SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2016

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number: 001-34207

Dynavax Technologies Corporation

(Exact name of registrant as specified in its charter)

Delaware	**33-0728374**
(State or other jurisdiction of incorporation or organization)	*(IRS Employer Identification No.)*

2929 Seventh Street, Suite 100
Berkeley, CA 94710-2753
(510) 848-5100

(Address, including Zip Code, and telephone number, including area code, of the registrant's principal executive offices)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class:	**Name of Each Exchange on Which Registered:**
Common Stock, $0.001 Par Value	The NASDAQ Stock Market LLC
Preferred Shares Purchase Rights	

Securities Registered Pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registration was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of the registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☐	Accelerated filer ☒	Non-accelerated filer ☐ (Do not check if a smaller reporting company)	Smaller reporting company ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting stock held by non-affiliates of the registrant, based upon the closing sale price of the common stock on June 30, 2016 as reported on the NASDAQ Capital Market, was approximately $409,000,000. Shares of common stock held by each officer and director and by each person known to the Company who owns 5% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of March 9, 2017, the registrant had outstanding 44,352,830 shares of common stock.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Definitive Proxy Statement for the registrant's 2017 Annual Meeting of Stockholders are incorporated by reference into Part III, Items 10-14 of this Form 10-K. The Definitive Proxy Statement will be filed no later than 120 days after the close of the registrant's fiscal year ended December 31, 2016.

INDEX

DYNAVAX TECHNOLOGIES CORPORATION

		Page No.
	PART I	
Item 1.	BUSINESS	3
Item 1A.	RISK FACTORS	12
Item 1B.	UNRESOLVED STAFF COMMENTS	25
Item 2.	PROPERTIES	25
Item 3.	LEGAL PROCEEDINGS	25
Item 4.	MINE SAFETY DISCLOSURE	26
	PART II	
Item 5.	MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES	27
Item 6.	SELECTED FINANCIAL DATA	28
Item 7.	MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	29
Item 7A.	QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK	37
Item 8.	FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA	38
Item 9.	CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE	61
Item 9A.	CONTROLS AND PROCEDURES	61
Item 9B.	OTHER INFORMATION	63
	PART III	
Item 10.	DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE	64
Item 11.	EXECUTIVE COMPENSATION	64
Item 12.	SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS	64
Item 13.	CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE	64
Item 14.	PRINCIPAL ACCOUNTING FEES AND SERVICES	64
	PART IV	
Item 15.	EXHIBITS, FINANCIAL STATEMENT SCHEDULES	65
Item 16.	FORM 10-K SUMMARY	69
	SIGNATURES	70

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 which are subject to a number of risks and uncertainties. All statements that are not historical facts are forward-looking statements, including statements about our ability to successfully develop and timely achieve regulatory approval for HEPLISAV-B™, our ability to successfully develop and obtain regulatory approval of our early stage product candidates, SD-101 and DV281, and our other early stage compounds, our business, collaboration and regulatory strategy, our intellectual property position, our product development efforts, our ability to commercialize our product candidates, including HEPLISAV-B, our ability to manufacture commercial supply and meet regulatory requirements, the timing of the introduction of our products, uncertainty regarding our capital needs and future operating results and profitability, anticipated sources of funds as well as our plans, objectives, strategies, expectations and intentions. These statements appear throughout our document and can be identified by the use of forward-looking language such as "may," "will," "should," "expect," "plan," "anticipate," "believe," "estimate," "predict," "future," or "intend," or the negative of these terms or other variations or comparable terminology.

Actual results may vary materially from those in our forward-looking statements as a result of various factors that are identified in "Item 1A—Risk Factors" and "Item 7—Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere in this document. No assurance can be given that the risk factors described in this Annual Report on Form 10-K are all of the factors that could cause actual results to vary materially from the forward-looking statements. All forward-looking statements speak only as of the date of this Annual Report on Form 10-K. Readers should not place undue reliance on these forward-looking statements and are cautioned that any such forward-looking statements are not guarantees of future performance. We assume no obligation to update any forward-looking statements.

This Annual Report on Form 10-K includes trademarks and registered trademarks of Dynavax Technologies Corporation. Products or service names of other companies mentioned in this Annual Report on Form 10-K may be trademarks or registered trademarks of their respective owners. References herein to "we," "our," "us," "Dynavax" or the "Company" refer to Dynavax Technologies Corporation and its subsidiary.

PART I

ITEM 1. BUSINESS

OVERVIEW

We are a clinical-stage immunotherapy company focused on leveraging the power of the body's innate and adaptive immune responses through toll-like receptor ("TLR") stimulation. Our current product candidates are being investigated for use in multiple cancer indications, as a vaccine for the prevention of hepatitis B and as a disease modifying therapy for asthma.

OUR TECHNOLOGY

Toll-like Receptor Immune Modulation Platform

Toll-like receptors are a family of transmembrane proteins that play a vital role in innate immunity and subsequent adaptive immunity. Signaling through these receptors is triggered by the binding of a variety of pathogen-associated molecules and is essential to generation of innate immunity. The innate immune response is, in effect, the first line of defense against viruses, bacteria and other potential pathogens. The innate response also initiates and regulates the generation of an adaptive immune response composed of highly specific antibodies and T cells. Our research is focused primarily on stimulation of a subset of TLRs that have evolved to recognize bacterial and viral nucleic acids.

Our research has resulted in the identification of proprietary synthetic oligonucleotides (short segments of DNA), that mimic the activity of microbial DNA and selectively activate one of these important receptors, TLR9. These are called CpG oligonucleotides – CpGs for short – referring to the presence of specific nucleotide sequences containing the CG base pair. In addition, we are developing compounds that activate two other important innate receptors, TLR7 and TLR8. These TLR agonists are able to stimulate or modify immune responses as single agents and can synergize with other classes of immunotherapeutic agents. In combination with tumor antigens or vaccines, these TLR agonists can substantially enhance and prolong protective immune responses. Thus this portfolio of novel and potent activators opens multiple opportunities for expanding the scope of cancer immunotherapy, enhancing the efficiency of vaccines and modulating allergic diseases.

DEVELOPMENT PROGRAMS

Our pipeline of product candidates includes the following. Each clinical stage program is discussed in further detail below.

Product Candidate	Combination	Indication(s)	Stage of Development	Partner
HEPLISAV-B		Adult Hepatitis B prevention	Phase 3	
AZD1419		Asthma Disease Modification	Phase 2	AstraZeneca[1]
Immuno-oncology				
SD-101	Pembrolizumab (anti-PD1)	Melanoma	Phase 2	Merck & Co[2]
SD-101	Pembrolizumab (anti-PD1)	Head and Neck Squamous Cell Carcinoma	Phase 2	Merck & Co[2]
SD-101	Anti-IL10	Multiple Malignancies	Phase 1	Merck & Co[3]
DV281	Anti-PD1	Non-small Cell Lung Cancer	Phase 1 planned for Q2 2017	
DV230F		Liver Tumors	Preclinical	
DV1001		TLR 7&8 agonist for multiple malignancies	Preclinical	

[1] AstraZeneca is funding and conducting the study and has licensed worldwide commercial rights.
[2] Under clinical collaboration with Merck & Co. Dynavax is funding the study and maintains all commercial rights to SD-101.
[3] Study funded and conducted by Merck & Co. Dynavax retains all commercial rights to SD-101.

Immuno-oncology

Immuno-oncology is a rapidly advancing field that focuses on modulating the immune system to develop or enhance anti-tumor activities in order to control growth or eliminate tumors. The industry is exploring multiple strategies and technologies aimed at enhancing and prolonging anti-tumor immune responses and inhibiting the actions of multiple immune checkpoints that limit the effectiveness of anti-tumor responses. Agents that inhibit two of these immune checkpoints, CTLA-4 and the PD-1/PD-L1 interaction, have been approved for a number of cancer indications. These checkpoint inhibitors represent a major advance in cancer treatment, yet a majority of patients fail to respond to these inhibitors used as single agents. In many instances, it appears that the failure to respond correlates with anti-tumor activity that remains inadequate even with checkpoint blockade. Thus, a major opportunity in immuno-oncology is the development of immunostimulatory approaches that increase the number, location and functional state of tumor-reactive cytotoxic T cells, enabling remission and durable control of tumor growth.

Through our expertise in TLR biology we have designed compounds that stimulate multiple innate mechanisms, activating a cascade of anti-tumor activities including stimulating the tumor microenvironment, generating tumor specific T cells and initiating a systemic distribution of those cells to all tumor sites. These compounds were specifically designed to stimulate multiple pathways of tumor killing through type 1 interferon induction and highly efficient stimulation of antigen presenting functions of plasmacytoid dendritic cells.

Our clinical development strategy for immuno-oncology applications is based on two key principles. The first is that immune activation by TLR agonists will be significantly more effective when focused on the tumor than when administered as a systemic therapy. This has been shown in many studies with mouse tumor models and has been confirmed in pioneering academic studies of intratumoral injection of CpGs in lymphoma patients. These studies indicate TLR9 stimulation applied locally allows optimal concentrations of the CpG to be achieved at the site of highest concentrations of tumor antigens and T cells that recognize those antigens. Local stimulation of innate anti-tumor mechanisms, such as Natural Killer cells, should enhance release of tumor antigens and locally induced chemokine gradients can lead to enhanced recruitment of additional tumor-reactive T cells.

The second principle is the development of combinations that have complementary mechanisms of action and have the potential for synergistic, rather than additive clinical effects. An example is our development of combination treatment of intra-tumoral SD-101 with the PD-1 inhibitor, pembrolizumab. Pembrolizumab releases anti-tumor T cells from one of the most potent of the immune checkpoints, while intratumoral SD-101 generates both greater numbers and more highly functional cytotoxic T cells directed against tumor cells. We have published studies showing the mechanisms of this synergy in mouse tumor models.

We are developing our initial immuno-oncology product candidate, SD-101, to eventually be combined with a variety of immunotherapies when activation of an anti-tumor immune response is desirable. We are targeting combinations with checkpoint inhibitors that offer activities synergistic with TLR 9 stimulation, with an initial focus on approved checkpoint inhibitors in indications that have generally low response rates and would provide a clear path to approval. As a result we began our first combination trial in metastatic melanoma with SD-101, our novel intratumoral TLR9 agonist, in combination with KEYTRUDA® (pembrolizumab), an anti-PD1 therapy approved for metastatic melanoma, under a clinical collaboration with Merck & Co. We have expanded this trial to include head and neck squamous cell carcinoma, another approved indication for KEYTRUDA. In addition, under this clinical collaboration, Merck is conducting a Phase 1 trial in multiple malignancies with SD-101 in combination with their investigational anti-IL10 compound.

Additionally there are ongoing and planned investigator sponsored studies to support our strategy to develop SD-101 in combination with multiple checkpoint inhibitors and other agents in multiple indications.

SD-101 – TLR9 Agonist for intratumoral injection

Our lead cancer immunotherapy candidate is SD-101, a C Class CpG TLR9 agonist that was selected for characteristics optimal for treatment of cancer, including high interferon induction. Directly injecting SD-101 into a tumor site optimizes its effect by ensuring proximity to tumor-specific antigens. In animal models, SD-101 demonstrated significant anti-tumor effects at both the injected site and at distant sites. We are conducting a clinical program intended to assess potential efficacy of SD-101 in a range of tumors and in combination with a range of treatments, including checkpoint inhibitors and other therapies.

In October 2014, we initiated a Phase 1/2 multicenter clinical trial of intratumoral administration of SD-101 in adults with untreated low-grade B-cell lymphoma. Key objectives of this study were to assess the systemic, or abscopal, effect on non-injected lesions and to measure levels of CD8+ T cells in the injected site. In December of 2016 we reported interim clinical data from 28 evaluable patients demonstrating tumor regression in untreated tumor sites in a majority of the patients and increases in CD8+ cells were observed in the injected tumor, which correlated with abscopal tumor shrinkage.

SD-101 in combination with KEYTRUDA® (pembrolizumab) in Melanoma

In October 2015, we initiated a Phase 1/2 multicenter clinical trial to assess the safety and potential efficacy of intratumoral SD-101 in combination with Merck's anti-PD-1 therapy, KEYTRUDA® (pembrolizumab), in patients with advanced or metastatic melanoma. The study includes patients who have disease that is progressing while receiving an anti-PD-1 therapy and patients who are naïve to anti-PD-1 therapy.

In March 2017, we reported results from the Phase 1 dose escalation part of the study, evaluating 17 patients for efficacy and 22 patients for safety. In patients naïve to anti-PD-1 treatment, responses were observed in six out of seven patients, for an overall response rate of 86%. This includes two (29%) complete responses and four (57%) partial responses. Target tumor shrinkage was observed in all 7 evaluable patients. In 10 patients with progressive disease who initiated KEYTRUDA anti-PD-1 monotherapy prior to enrollment, one partial response was observed and five patients had stable disease while receiving KEYTRUDA and SD-101, with four of the 10 patients experiencing target tumor shrinkage. In early 2017 we completed the initial dose escalation phase and have begun the expansion phase of the trial. In this expansion phase patients will be stratified into two groups, anti-PD1 therapy naïve patients and patients with progressive disease while on anti-PD1 therapy.

SD-101 in combination with KEYTRUDA generally was well-tolerated. No dose-limiting toxicities of the combination were observed in any dose cohort, and a maximum tolerated dose was not identified. The most common treatment-emergent adverse events were injection site reactions and transient grade 1 to 2 flu-like symptoms, including fever, chills and myalgia that respond to over the counter medications such as acetaminophen. The study also includes biomarker assessments, suggesting that treatment with SD-101 and KEYTRUDA resulted in elevation of gene signatures consistent with an increase in Th1 immune cell types as well as an increase in immune cell infiltrates such as CD8+ T-cells in the tumor microenvironment.

SD-101 in combination with KEYTRUDA® (pembrolizumab) in Head and Neck Squamous Cell Carcinoma

Based on the initial results from the combination of SD-101 and KEYTRUDA in melanoma, we have expanded the combination study with KEYTRUDA to include a Phase 2 trial in patients with recurrent or metastatic head and neck squamous cell cancers.

SD-101 in combination with MK-1966 (monoclonal antibody against IL-10)

Under our clinical collaboration, Merck has initiated a Phase 1 dose ranging study combining their monoclonal antibody against IL10 with SD-101.

DV281 – Inhaled TLR 9 agonist for lung cancer

We pioneered the development of an inhaled TLR9 agonist for asthma. The lead product candidate, AZD1419, was developed under a collaboration with AstraZeneca and is currently being evaluated by AstraZeneca in a phase 2 clinical trial in asthma patients. Based on this experience and our SD-101 research, we are developing a TLR9 agonist, DV281, designed for delivery to lung cancer patients as an inhaled aerosol.

Although we continue to advance the strategy of focused delivery of a CpG in studies with intratumoral injection of SD-101, there are many tumor types for which direct, repeated injection is not feasible. Non-small cell lung cancer ("NSCLC") represents one such challenge. This major type of lung cancer is known to respond to a variety of immunotherapy approaches and several inhibitors of the PD-1/PD-L1 checkpoint pathway have been approved for NSCLC. Yet response rates to these agents remain low. A strategy for focused delivery to lung tumors is direct administration to the lung by inhalation. To accomplish this, we have developed DV281, a novel investigational TLR9 agonist designed specifically for focused delivery to primary lung tumors and lung metastases. DV281 is similar in biological activity and mechanism of action to SD-101, but has been optimized for administration as an aerosol.

Studies in preclinical animal models of lung cancer show that this direct delivery of DV281 to tumor-bearing lungs results in induction of interferons and cytokines and infiltration of T cells, responses similar to those observed after intratumoral injection of SD-101. Animal models also demonstrate synergy of inhaled DV281 with anti-PD1 antibodies in reducing tumor burden and generating a systemic and durable anti-tumor response. Inhaled DV281, delivered by a nebulizer, is planned to enter clinical trials for NSCLC, in combination with anti-PD-1 therapy, in the second quarter of 2017.

Vaccine Adjuvants

Our vaccine research to date has focused on the use of TLR9 agonists as novel adjuvants. Different TLR9 agonist molecules are taken up within different endosomes within target cells, stimulating different signaling pathways. CpG B-Class TLR9 agonists, such as our 1018 vaccine adjuvant, are selectively taken up by late endosomes (more mature endosomes also known as multivesicular bodies), resulting in signaling that leads to release of cytokines necessary for T cell activation and establishing long-term immunity but with modest induction of interferon alpha. TLR9 stimulation also helps generate memory T Helper 1 ("Th1") cells that can stimulate the immune system to induce long-lasting effects. As a result, TLR9 adjuvanted vaccines induce a specific Th1 immune response and durable levels of protective antibodies.

HEPLISAV-B

Our most advanced product candidate is HEPLISAV-B, an investigational adult hepatitis B vaccine. HEPLISAV-B combines 1018, a proprietary TLR9 agonist adjuvant, and recombinant hepatitis B surface antigen ("rHBsAg" or "HBsAg") that is manufactured by Dynavax GmbH, our wholly-owned subsidiary in Düsseldorf, Germany. In Phase 3 trials, HEPLISAV-B demonstrated earlier protection with fewer doses than a currently approved hepatitis B vaccine and a similar adverse event profile. Our original Biologics License Application (BLA) was submitted to the U.S. Food and Drug Administration (FDA) in April 2012. FDA issued a Complete Response Letter (CRL) to Dynavax in February 2013 requesting an additional clinical trial to increase the safety database.

In March 2016, we resubmitted the BLA for HEPLISAV-B to the FDA to add more than 5,000 subjects to the HEPLSIAV-B safety database. The total safety database for HEPLISAV-B currently includes 10,038 participants. The FDA issued a CRL to Dynavax in November 2016 requesting information regarding several topics, including clarification of specific adverse events of special interest (AESIs), a numerical imbalance in a small number of cardiac events in a single study, new analyses of the integrated safety data base across different time periods, and post-marketing commitments. We resubmitted the BLA in February 2017 and the FDA has established August 10, 2017 as the Prescription Drug User Fee Act action date.

In order to maintain the ability to pursue HEPLISAV-B through the review period we enacted a restructuring plan to suspend manufacturing activities, commercial preparations and other longer term investment related to HEPLISAV-B. If the product is approved, we plan to use existing stockpiled inventory to support initial sales.

HEPLISAV-B Potential Commercial Opportunity

Dynavax has worldwide commercial rights to HEPLISAV-B. Our only pending request for regulatory approval is in the U.S., so our initial commercialization efforts will be in the U.S.. There are three approved hepatitis B vaccines in the U.S.: Engerix-B and Twinrix® from GlaxoSmithKline plc ("GSK") and Recombivax-HB® from Merck & Co. ("Merck"). Key market segments for these products consist of persons considered to be at high risk for hepatitis B virus ("HBV") infection and include people with multiple sexual partners or injection drug use, healthcare workers and first responders, international travelers, chronic liver disease patients and, in the U.S., people with diabetes mellitus (type 1 and type 2).

Currently, the U.S. market for adult hepatitis B vaccines is approximately $270 million annually. In late 2012 the Advisory Committee on Immunization Practices ("ACIP") expanded its recommendation for adults who should be vaccinated against hepatitis B to include people with diabetes mellitus (type 1 and type 2). According to the Centers for Disease Control and Prevention ("CDC") there are 20 million adults diagnosed with diabetes and another 1.5 million new cases diagnosed each year. This population represented a significant increase in the number of adults recommended for vaccination against hepatitis B in the U.S.

Autoimmune and Inflammatory Diseases

We also have clinical and preclinical programs focused on therapeutics for autoimmune and inflammatory diseases.

AZD1419 for Asthma

AZD1419 is being developed for the treatment of asthma pursuant to a collaboration with AstraZeneca AB ("AstraZeneca"). AZD1419 is designed to change the basic immune response to environmental allergens, such as house dust and pollens, leading to prolonged reduction in asthma symptoms by converting the response from one primarily mediated by type-2 helper T cells to type-1 helper T cells.

A Phase 1a study of AZD1419 demonstrated its safety and tolerability in healthy subjects. The study also produced dose-dependent induction of genes by endogenous interferon, as measured in sputum, indicating presence of the drug at the target site and expected activity. On the basis of those results, the parties agreed to bypass a planned Phase 1b trial and proceed directly to Phase 2. AstraZeneca initiated a Phase 2 trial in asthma patient during 2016, which AstraZeneca will fully fund and conduct.

Under our September 2006 Research Collaboration and License Agreement with AstraZeneca, as amended, remaining potential milestone payments to us total approximately $100 million based on the achievement of certain development and regulatory objectives. In addition, upon commercialization, we are eligible to receive tiered royalties ranging from the mid to high single-digits based on product sales of any products originating from the collaboration. We have the option to co-promote in the United States products arising from the collaboration, if any. AstraZeneca has the right to sublicense its rights upon our prior consent.

INTELLECTUAL PROPERTY

Our commercial success depends in part on our ability to obtain and maintain proprietary protection for our drug candidates, technology and know-how, to operate without infringing the proprietary rights of others and to prevent others from infringing our proprietary rights. In addition to seeking patent protection in the U.S., we generally file patent applications in Australia, Canada, Europe, Japan and additional foreign countries on a selective basis to further protect the inventions that we or our partners consider important to the development of our business. We also rely on trade secrets and contracts to protect our proprietary information.

As of December 31, 2016, our intellectual property portfolio included over 30 issued U.S. patents, over 260 issued or granted foreign patents and over 40 additional pending U.S. and foreign patent applications claiming compositions containing TLR agonists or antagonists, methods of use, and/or methods of manufacture thereof.

We have an issued U.S. patent covering the TLR agonist contained in our HEPLISAV-B investigational vaccine that will expire in 2018, and have corresponding issued patents in several major European and other countries. We have issued patents expiring in 2023 and covering compositions such as SD-101 and their uses in the U.S. and in several major European and other countries. We own or have an exclusive license to U.S. and foreign patents and patent applications pending for each of our other product candidates and/or their uses. At present, it is not known or determinable whether patents will issue from any of these applications or what the specific expiration dates would be for any patents that do issue.

Individual patents extend for varying periods depending on the date of filing of the patent application or the date of patent issuance and the legal term of patents in the countries in which they are obtained. Generally, patents issued in the U.S. are effective for:

- the longer of 17 years from the issue date or 20 years from the earliest effective filing date, if the patent application was filed prior to June 8, 1995; and
- 20 years from the earliest effective filing date, if the patent application was filed on or after June 8, 1995.

In addition, in certain instances, a patent term can be extended to recapture a portion of the term effectively lost as a result of the FDA regulatory review period. The duration of patents varies in accordance with provisions of applicable local law, but typically is 20 years from the filing date. Our patent estate, based on patents existing now and expected by us to issue based on pending applications, will expire on dates ranging from 2017 to 2036.

The actual protection afforded by a patent varies on a product-by-product basis, from country-to-country and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory related extensions, the availability of legal remedies in a particular country and the validity and enforceability of the patents.

Because patent applications in the U.S. and many foreign jurisdictions typically are not published until 18 months after filing and publications of discoveries in the scientific literature often lag behind actual discoveries, we cannot be certain that we were the first to make the inventions claimed in each of our issued patents or pending patent applications or that we were the first to invent and/or the first to file for protection of the inventions set forth in these patent applications. The U.S. Patent and Trademark Office ("PTO") may declare interference proceedings to determine the priority of inventions with respect to our patent applications and those of other parties or reexamination or reissue proceedings to determine if the scope of a patent should be narrowed.

Our commercial success depends significantly on our ability to operate without infringing patents and proprietary rights of third parties. A number of pharmaceutical companies and biotechnology companies, including Pfizer, Inc. ("Pfizer"), as well as universities and research institutions, may have filed patent applications or may have been granted patents that cover inventions similar to the inventions owned or licensed to us. We cannot determine with certainty whether patents or patent applications of other parties may materially affect our ability to make, use or sell any products. If another party controls patents or patent applications covering our products, we may not be able to obtain the rights we need to those patents or patent applications in order to commercialize our products. Two of our potential competitors, Merck and GSK, are exclusive licensees of broad patents covering HBsAg, a component of HEPLISAV-B. In addition, the Institut Pasteur owns or has exclusive licenses to patents covering HBsAg. While some of these patents have expired or will soon expire outside the U.S., they remain in force in the U.S. In order to commercialize HEPLISAV-B, we may be involved in litigation or licensing in respect of some or all of these patents. To the extent we are able to commercialize HEPLISAV-B in the U.S. while these patents remain in force, Merck, GSK, their licensors or the Institut Pasteur may bring claims against us.

Litigation may be necessary to enforce patents issued or licensed to us or to determine the scope or validity of another party's proprietary rights. The existence of third-party patent applications and patents could significantly reduce the coverage of the patents owned by or licensed to us and limit our ability to obtain meaningful patent protection. For example, Pfizer has issued U.S. and foreign patent claims as well as patent claims pending with the PTO and foreign patent offices that, if held to be valid, could require us to obtain a license in order to commercialize one or more of our formulations of TLR agonist other than with respect to HEPLISAV-B, for which we have a license. Litigation or any other proceedings, such as patent interferences, could result in substantial costs to and diversion of effort by us, and an adverse outcome in a court or patent office could subject us to significant liabilities, require disputed rights to be licensed from other parties, or require us to cease using some of our technology. We may not prevail in these actions or proceedings, if any.

In addition, other parties may duplicate, design around or independently develop similar or alternative technologies to ours or our licensors.

We may rely, in some circumstances, on trade secrets and confidentiality agreements to protect our technology. Although trade secrets are difficult to protect, wherever possible, we use confidential disclosure agreements to protect the proprietary nature of our technology. Our policy is to require each of our commercial partners, employees, consultants and advisors to enter into an agreement before beginning their employment, consulting or advisory relationship with us that in general provides that the individuals must keep confidential and not disclose to other parties any of our confidential information developed or learned by the individuals during the course of their relationship with us except in limited circumstances. These agreements also generally provide that we own all inventions conceived by the individuals in the course of rendering their employment or services to us. However, there can be no assurance that these agreements will not be breached, that we will have adequate remedies for any breach, or that our trade secrets and/or proprietary information will not otherwise become known or be independently discovered by competitors. To the extent that our employees, consultants or contractors use intellectual property owned by others in their work for us, disputes may also arise as to the rights in related or resulting know-how and inventions.

COMPETITION

The biotechnology and pharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. Our products and development programs target a number of areas, including vaccine adjuvants, cancer immunotherapy and autoimmune and inflammatory diseases. There are many commercially available products for the prevention and treatment of these diseases. Many companies and institutions are making substantial investments in developing additional products to treat these diseases that could compete directly or indirectly with our products under development.

Our cancer immunotherapy, SD-101, if developed, approved and commercialized will compete with a range of therapies being used or studied to treat blood cancers and solid tumor malignancies, including:

- Chemotherapeutic agents;
- Immuno-oncology agents, including immune checkpoint inhibitors such as anti- CTLA4 and anti-PD1 antibodies, immune stimulation therapies including agonists of TLR and other innate immune recognition receptors; and
- Targeted therapies, such as BRAF inhibitors and MEK inhibitors.

Approved and late-stage investigational cancer immunotherapeutics are marketed or being developed by numerous companies, including AstraZeneca/MedImmune, Bristol-Myers Squibb, Celgene, Gilead, Roche/Genentech, and Merck.

We are in direct competition with a number of other companies developing TLR agonist as well as other mechanisms of action that are focused on stimulating the immune response. These companies include Aduro Biotech, Inc., Idera Pharmaceuticals, Inc., Immune Design Corp. and Checkmate Pharmaceuticals, Inc..

HEPLISAV-B, a two-dose hepatitis B vaccine, if approved and commercialized, will compete directly with conventional three-dose marketed vaccines Engerix-B from GSK as well as Recombivax-HB marketed by Merck, among others. There are also modified schedules of conventional hepatitis B vaccines for limited age ranges that are approved in the European Union and U.S. In addition, HEPLISAV-B will compete against Twinrix, a multivalent vaccine marketed by GSK for protection against hepatitis B and hepatitis A.

Our asthma therapy, AZD1419, if developed, approved and commercialized, will compete indirectly with existing asthma therapies, such as inhaled beta-agonists, corticosteroids, leukotriene inhibitors and IgE monoclonal antibodies, including those marketed by Merck, Roche/Genentech, Novartis International AG, AstraZeneca and GSK.

Many of the entities developing and marketing these competing products have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing than we do. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative agreements with large, established companies with access to capital. These entities may also compete with us in recruiting and retaining qualified scientific and management personnel, as well as in acquiring technologies complementary to or necessary for our programs.

REGULATORY CONSIDERATIONS

In the U.S., pharmaceutical and biological products are subject to rigorous review and approval by the FDA under the Federal Food, Drug, and Cosmetic Act, the Public Health Service Act and other federal statutes and regulations. In Europe, under the centralized procedure, a company submits a single application to the European Medicines Agency (“EMA”). The steps ordinarily required by the regulatory authorities before a new drug or biological product may be marketed in the U.S. and in most other countries include but are not limited to the following:

- completion of preclinical laboratory tests, preclinical studies and formulation studies;
- submission to the regulatory authority of a clinical application for a new drug or biologic which must become effective before clinical trials may begin;
- performance of adequate and well-controlled human clinical trials to establish the safety and efficacy of the drug or biologic for each proposed indication;
- demonstration of the consistent manufacturing of drug substance and drug product;
- the submission of a new drug application to the regulatory authority; and
- regulatory review and approval of the application before any commercial marketing, sale or shipment of the drug or biologic.

If applicable requirements are not met, regulatory authorities may issue fines, require that a company recall its products, seize products, require that a company totally or partially suspend the production of its products, refuse to approve a marketing application, pursue criminal prosecution and/or revoke previously granted marketing authorizations.

To secure regulatory authority approval, we must submit extensive non-clinical and clinical data, adequate evidence of a product manufactured by a well-controlled process that is safe and effective for its intended use, and other supporting information to the regulatory authority. The number of preclinical studies and clinical trials that will be required for FDA and foreign regulatory agency approvals varies depending on the product candidate, the disease or condition for which the product candidate is in development and regulations applicable to any particular drug candidate. Data obtained from preclinical and clinical activities are susceptible to varying interpretations, which could delay, limit or prevent regulatory approval or clearance. Further, the results from preclinical testing and early clinical trials may not be predictive of results obtained in later clinical trials. In addition, the development of the drug substance and drug product may require manufacturing modifications to ensure future regulatory acceptance. The approval process takes many years, requires the expenditures of substantial resources, and involves post-marketing surveillance.

Delays experienced during the approval process may materially reduce the period during which we will have exclusive rights to exploit patented products or technologies. Delays can occur at any stage of drug development and as a result of many factors, certain of which are not under our control, including but not limited to the following:

- lack of efficacy, or incomplete or inconclusive results from clinical trials;
- unforeseen safety issues;
- failure by investigators to adhere to protocol requirements, including patient enrollment criteria;
- slower than expected rate of patient recruitment;
- failure by subjects to comply with trial protocol requirements;
- inability to follow patients adequately after treatment;
- inability to qualify and enter into arrangements with third parties to manufacture sufficient quality and quantities of materials for use in clinical trials;
- failure by a contract research organization to fulfill contractual obligations; and
- adverse changes in regulatory policy during the period of product development or the period of review of any application for regulatory approval or clearance.

The FDA or foreign regulatory agency may also require post-marketing testing and surveillance to monitor the effects of approved products or place conditions on any approvals that could restrict the commercial applications of these products. Following approval, we may be required to conduct additional post-marketing studies. The regulatory authority may withdraw product approvals if we do not continue to comply with regulatory standards or if problems occur following initial marketing.

Non-clinical studies involve laboratory evaluation of product characteristics or animal studies to assess the initial efficacy and safety of the product. The FDA or other foreign regulatory agency, under its good laboratory practices regulations, regulates certain non-clinical studies. Research and preclinical studies do not involve the introduction of a product candidate in human subjects. These activities involve identification of potential product candidates, modification of promising candidates to optimize their biological activity, as well as preclinical studies to assess safety and effectiveness in animals. In clinical trials, the product candidate is administered to humans. Violations of these regulations can, in some cases, lead to invalidation of those studies, requiring these studies to be repeated. The results of these tests, together with manufacturing information and analytical data, are submitted to the regulatory authority as part of a clinical application, which must be approved by the regulatory authority before we can commence clinical investigations in humans.

Clinical trials involve the administration of the investigational product to humans under the supervision of a qualified principal investigator. We must conduct our clinical trials in accordance with current Good Clinical Practices (“GCP”) regulations under protocols submitted to applicable regulatory authorities as part of the clinical application. GCP regulations mandate comprehensive documentation for the clinical protocol, record keeping, training, and facilities including computers. Quality assurance and inspections are designed to ensure that these GCP standards are achieved. Additionally, each clinical trial must be approved and conducted under the auspices of an Institutional Review Board (“IRB”) or Independent Ethics Committee and with patient informed consent. The IRB will consider, among other matters, ethical factors, the safety of human subjects and the possibility of liability of the institution conducting the trial.

The stages of the regulatory process include clinical trials in three sequential phases that may overlap. Phase 1 clinical trials typically involve the administration of a product candidate into a small group of healthy human subjects. These trials are the first attempt to evaluate a drug's safety, determine a safe dose range and identify side effects. During Phase 2 trials, the product candidate is introduced into patients who suffer from the medical condition that the product candidate is intended to treat. Phase 2 studies are designed to evaluate whether a product candidate shows evidence of effectiveness, to further evaluate dosage, and to identify possible adverse effects and safety risks. When Phase 2 evaluations demonstrate that a product candidate appears to be both safe and effective, Phase 3 trials are undertaken to confirm a product candidate's effectiveness and to test for safety in an expanded patient population. If the results of Phase 3 trials appear to confirm effectiveness and safety, the data gathered in all phases of clinical trials form the basis for an application for regulatory approval of the product candidate.

We and all of our contract manufacturers are required to comply with the applicable FDA or foreign regulatory agency current Good Manufacturing Practices ("GMP") regulations. Manufacturers of biologics also must comply with a regulatory authority's general biological product standards. Failure to comply with the statutory and regulatory requirements subjects the manufacturer to possible legal or regulatory action, such as suspension of manufacturing, seizure of product or voluntary recall of a product. Good manufacturing practice regulations require quality control and quality assurance as well as the corresponding maintenance of records and documentation. Before granting product approval, the regulatory authority must determine that our or our third party contractor's manufacturing facilities meet GMP requirements before we can use them in the commercial manufacture of our products. In addition, our facilities are subject to periodic inspections by the regulatory authority for continued compliance with GMP requirements during clinical development as well as following product approval. Adverse experiences with the product must be reported to the FDA or foreign regulatory agency and could result in the imposition of market restriction through labeling changes or in product removal.

If our products are approved for sale, we will be subject to further regulatory requirements under federal and state provisions such as federal "sunshine" laws, anti-kickback laws, false claims laws and state law equivalents of those and other regulations. We are also subject to various federal, state, local and foreign laws, regulations and recommendations relating to safe working conditions, laboratory and manufacturing practices, the experimental use of animals and the use and disposal of hazardous or potentially hazardous substances, including radioactive compounds and infectious disease agents, used in connection with our research. We cannot accurately predict the extent of government regulation that might result from any future legislation or administrative action.

MANUFACTURING

We rely on our facility in Düsseldorf, Germany and third parties to perform the multiple processes involved in manufacturing our product candidates, including the manufacturing of TLR agonists, antigens, and the formulation, fill and finish of the resultant products. We have relied on a limited number of suppliers to produce products for clinical trials and a single supplier to produce our 1018 for HEPLISAV-B. In order to successfully manufacture and commercialize HEPLISAV-B, if approved, we have secured long term supply agreements with the key third party suppliers and vendors for supply of product for commercialization. To date, we have manufactured only small quantities of TLR agonists ourselves for development purposes. We currently manufacture the HBsAg for HEPLISAV-B at our Dynavax GmbH facility.

RESEARCH AND DEVELOPMENT

Conducting a significant amount of research and development has been central to our business model. Our research and development expenses were $84.5 million, $86.9 million and $84.6 million for the years ended December 31, 2016, 2015 and 2014, respectively.

ENVIRONMENT

We have made, and will continue to make, expenditures for environmental compliance and protection. We do not expect that expenditures for compliance with environmental laws will have a material effect on our results of operations in the future.

EMPLOYEES

As of December 31, 2016, we had 251 full-time employees, including 142 employees in our headquarters in Berkeley, California and 109 employees in our office and manufacturing facility in Düsseldorf, Germany. As of February 28, 2017, we had 196 employees, including 97 full-time employees in Berkeley, California and 99 employees in Düsseldorf, Germany, many of whom are part-time due to a furlough program initiated in January 2017.

THE COMPANY AND BACKGROUND

Dynavax Technologies Corporation was incorporated in California in August 1996 under the name Double Helix Corporation, and we changed our name to Dynavax Technologies Corporation in September 1996. We were reincorporated in Delaware in November 2000 and listed on the NASDAQ Capital Market under the ticker symbol "DVAX".

Our principal executive offices are located at 2929 Seventh Street, Suite 100, Berkeley, California, 94710-2753. Our telephone number is (510) 848-5100. We make available, free of charge on our website located at www.dynavax.com, our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports, as soon as reasonably practicable after filing such reports with the Securities and Exchange Commission. Our code of conduct, audit committee charter, nominating and corporate governance committee charter, compensation committee charter and audit committee complaint procedures are also posted on our website and are each available in print to any stockholder upon request by writing to: 2929 Seventh Street, Suite 100, Berkeley, California 94710-2753. The contents of our website are not incorporated by reference into this report.

ITEM 1A. RISK FACTORS

This Annual Report on Form 10-K contains forward-looking statements concerning our future products, product candidates, timing of development activities, commercialization efforts, regulatory strategies, intellectual property position, expenses, revenues, liquidity and cash needs, as well as our plans and strategies. These forward-looking statements are based on current expectations and we assume no obligation to update this information. Numerous factors could cause our actual results to differ significantly from the results described in these forward-looking statements, including the following risk factors.

Risks Related to our Business

We are dependent on the success of our product candidates, especially HEPLISAV-B and SD-101, which depend on regulatory approval. The FDA or foreign regulatory agencies may determine our clinical trials or other data regarding safety, efficacy, consistency of manufacture or compliance with GMP regulations are insufficient for regulatory approval. Failure to obtain regulatory approvals or the delay and additional costs that would be required to obtain regulatory approvals could require us to discontinue operations.

None of our product candidates has been approved for sale by any regulatory agency. Any product candidate we develop is subject to extensive regulation by federal, state and local governmental authorities in the U.S., including the FDA, and foreign regulatory agencies. Our success is primarily dependent on our ability to obtain regulatory approvals for our most advanced product candidates. Approval processes in the U.S. and in other countries are uncertain, can take many years and require the expenditure of substantial resources, and we are unable to predict the timing of when regulatory approval may be received, if ever, in any jurisdiction.

For our most advanced product, HEPLISAV-B, we received a second complete response letter ("CRL") in November 2016 ("2016 CRL") from the FDA based upon their review of our BLA filing. In the U.S., our BLA must be approved by the FDA and corresponding applications to foreign regulatory agencies must be approved by those agencies before we may sell the product in their respective geographic area. Obtaining approval of a BLA and corresponding foreign applications is highly uncertain and we may fail to obtain approval. The BLA review process is extensive, lengthy, expensive and uncertain, and the FDA or foreign regulatory agencies may delay, limit or deny approval of our application for many reasons, including: whether the data from our clinical trials, including the Phase 3 results, or the development program are satisfactory to the FDA or foreign regulatory agency; disagreement with the number, design, size, conduct or implementation of our clinical trials or a conclusion that the data fails to meet statistical or clinical significance or safety requirements; acceptability of data generated at our clinical trial sites that are monitored by third party contract research organizations ("CROs"); the results of an advisory committee that may recommend against approval of our BLA or may recommend that the FDA or other agencies require, as a condition for approval, additional preclinical studies or clinical trials; and deficiencies in our manufacturing processes or facilities or those of our third party contract manufacturers and suppliers, if any. For example, in our first CRL, received in 2013, HEPLISAV-B was not approvable for the proposed indication based on insufficient patient safety data for an indication in adults 18-70 years of age without further evaluation of safety. While we conducted a study intended to obtain additional safety data information and submitted the study results and additional information regarding our manufacturing controls and facilities to the FDA, after we resubmitted our BLA we received the 2016 CRL from the FDA seeking additional information on several additional topics, including clarification regarding specific adverse events of special interest, a numerical imbalance in a small number of cardiac events in a single study (HBV-23), new analyses of the integrated safety database across different time periods, and post-marketing commitments. We have responded to the 2016 CRL, but there can be no assurance that we will address the outstanding FDA questions in a manner sufficient for approval in the U.S. We currently expect a review period of at least six months from the date of submission of our response to the 2016 CRL.

In February 2014, we announced our withdrawal of our Marketing Authorization Application ("MAA") for approval to the EMA, in part because the required time frame for response under the MAA procedure was not long enough to permit the collection of the necessary clinical data.

In addition, we obtain guidance from regulatory authorities on certain aspects of our clinical development activities and seek to comply with written guidelines provided by the authorities. These discussions and written guidelines are not binding obligations on the part of the regulatory authorities and the regulatory authorities may require additional patient data or studies to be conducted. Regulatory authorities may revise or retract previous guidance during the course of a clinical trial or after completion of the trial. The authorities may also disqualify a clinical trial from consideration in support of approval of a potential product if they deem the guidelines have not been met. The FDA or foreign regulatory agencies may determine our clinical trials or other data regarding safety, efficacy or consistency of manufacture or compliance with GMP regulations are insufficient for regulatory approval.

Failure to receive approval or significant additional delay in obtaining an FDA decision on whether to approve our BLA for HEPLISAV-B would have a material adverse effect on our business and results of operations, including possible termination of HEPLISAV-B development and further restructuring of our organization. In January 2017, following our receipt of the 2016 CRL, we restructured our business to emphasize our immuno-oncology programs and implemented a reduction in our global workforce of approximately 38 percent. While this reduced our cash outlay, we continue to maintain expenditures relating to HEPLISAV-B and our immuno-oncology programs remain at an early stage and will require additional funding. Even if HEPLISAV-B is approved, the labeling approved by the relevant regulatory authority may restrict how and to whom we and our potential partners, if any, may market the product or the manner in which our product may be administered and sold, which could significantly limit the commercial opportunity for such product.

Before granting product approval, the FDA must determine that our or our third party contractors' manufacturing facilities meet GMP requirements before we can use them in the commercial manufacture of our products. We and all of our contract manufacturers are required to comply with the applicable GMP regulations. Manufacturers of biological products must also comply with the FDA's general biological product standards. In addition, GMP regulations require quality control and quality assurance as well as the corresponding maintenance of records and documentation sufficient to ensure the quality of the approved product. Failure to comply with the statutory and regulatory requirements subjects the manufacturer to possible legal or regulatory action, such as delay of approval, suspension of manufacturing, seizure of product or voluntary recall of a product.

The FDA may require more clinical trials for our product candidates than we currently expect or are conducting before granting regulatory approval, if regulatory approval is granted at all. Our clinical trials may be extended which may lead to substantial delays in the regulatory approval process for our product candidates, which will impair our ability to generate revenues.

Our registration and commercial timelines depend on further discussions with the FDA and corresponding foreign regulatory agencies and requirements and requests they may make for additional data or completion of additional clinical trials. Any such requirements or requests could:

- adversely affect our ability to timely and successfully commercialize or market these product candidates;
- result in significant additional costs;
- potentially diminish any competitive advantages for those products;
- potentially limit the markets for those products;
- adversely affect our ability to enter into collaborations or receive milestone payments or royalties from potential collaborators;
- cause us to abandon the development of the affected product candidate; or
- limit our ability to obtain additional financing on acceptable terms, if at all.

Clinical trials for our product candidates are expensive and time consuming, may involve combinations with other agents, may take longer than we expect or may not be completed at all, and their outcomes are uncertain.

We are currently undertaking clinical trials of SD-101, including combination studies with other oncology agents, and expect to commence clinical trials for other product candidates in our immuno-oncology pipeline in the future. Our strategy with respect to development of SD-101 involves combination studies with other oncology agents. While we believe that this combination agent approach increases the potential for success, our clinical trials involving SD-101 are and will continue to be dependent on agreement with our combination agent study partners regarding the use of the other agents, concurrence on a protocol and supply of clinical materials. Most of our combination agent study partners, such as Merck, are significantly larger than we are and are conducting various other combination studies with other immuno-oncology agents and collaborators. We are not certain these clinical trials will be successful, or that even if successful we would be able to reach agreement to conduct larger, more extensive clinical trials required to achieve regulatory approval for a combination product candidate regimen. In addition, results from smaller, earlier stage clinical studies may not be representative of larger, controlled clinical trials that would be required in order to obtain regulatory approval of a product candidate or a combination of product candidates.

Each of our clinical trials requires the investment of substantial planning, expense and time and the timing of the commencement, continuation and completion of these clinical trials may be subject to significant delays relating to various causes, including scheduling conflicts with participating clinicians and clinical institutions, difficulties in identifying and enrolling participants who meet trial eligibility criteria, failure of participants to complete the clinical trial, delay or failure to obtain Institutional Review Board ("IRB") or regulatory approval to conduct a clinical trial at a prospective site, unexpected adverse events and shortages of available drug supply. Participant enrollment is a function of many factors, including the size of the relevant population, the proximity of participants to clinical sites, the eligibility criteria for the trial, the existence of competing clinical trials and the availability of alternative or new treatments.

Failure by us or our CROs to conduct a clinical study in accordance with GCP standards and other applicable regulatory requirements could result in disqualification of the clinical trial from consideration in support of approval of a potential product.

We are responsible for conducting our clinical trials consistent with GCP standards and for oversight of our vendors to ensure that they comply with such standards. We depend on medical institutions and CROs to conduct our clinical trials in compliance with GCP. To the extent that they fail to comply with GCP standards, fail to enroll participants for our clinical trials, or are delayed for a significant time in the execution of our trials, including achieving full enrollment, we may be affected by increased costs, program delays or both, which may harm our business.

Clinical trials must be conducted in accordance with FDA or other applicable foreign government guidelines and are subject to oversight by the FDA, other foreign governmental agencies and IRBs at the medical institutions where the clinical trials are conducted. In addition, clinical trials must be conducted with supplies of our product candidates produced under GMP and other requirements in foreign countries, and may require large numbers of participants.

The FDA or other foreign governmental agencies or we ourselves could delay, suspend or halt our clinical trials of a product candidate for numerous reasons, including with respect to our product candidates and those of our partners in combination agent studies:

- deficiencies in the trial design;
- deficiencies in the conduct of the clinical trial including failure to conduct the clinical trial in accordance with regulatory requirements or clinical protocols;
- deficiencies in the clinical trial operations or trial sites resulting in the imposition of a clinical hold;
- a product candidate may have unforeseen adverse side effects, including fatalities, or a determination may be made that a clinical trial presents unacceptable health risks;
- the time required to determine whether a product candidate is effective may be longer than expected;
- fatalities or other adverse events arising during a clinical trial that may not be related to clinical trial treatments;
- a product candidate or combination study may appear to be no more effective than current therapies;
- the quality or stability of a product candidate may fail to conform to acceptable standards;
- the inability to produce or obtain sufficient quantities of a product candidate to complete the trials;
- our inability to reach agreement on acceptable terms with prospective CROs and trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- our inability to obtain IRB approval to conduct a clinical trial at a prospective site;
- the inability to obtain regulatory approval to conduct a clinical trial;
- lack of adequate funding to continue a clinical trial, including the occurrence of unforeseen costs due to enrollment delays, requirements to conduct additional trials and studies and increased expenses associated with the services of our CROs and other third parties;
- the inability to recruit and enroll individuals to participate in clinical trials for reasons including competition from other clinical trial programs for the same or similar indications; or
- the inability to retain participants who have initiated a clinical trial but may withdraw due to side effects from the therapy, lack of efficacy or personal issues, or who are lost to further follow-up.

In addition, we may experience significant setbacks in advanced clinical trials, even after promising results in earlier trials, such as unexpected adverse events that occur when our product candidates are combined with other therapies and drugs or given to larger populations, which often occur in later-stage clinical trials. In addition, clinical results are frequently susceptible to varying interpretations that may delay, limit or prevent regulatory approvals. Also, patient advocacy groups and parents of trial participants may demand additional clinical trials or continued access to drug even if our interpretation of clinical results received thus far leads us to determine that additional clinical trials or continued access are unwarranted. Any disagreement with patient advocacy groups or parents of trial participants may require management's time and attention and may result in legal proceedings being instituted against us, which could be expensive, time-consuming and distracting, and may result in delay of the program. Negative or inconclusive results or adverse medical events, including participant fatalities that may be attributable to our product candidates, during a clinical trial may necessitate that it be redesigned, repeated or terminated. Further, some of our clinical trials may be overseen by a Data Safety Monitoring Board ("DSMB"), and the DSMB may determine to delay or suspend one or more of these trials due to safety or futility findings based on events occurring during a clinical trial. Any such delay, suspension, termination or request to repeat or redesign a trial could increase our costs and prevent or significantly delay our ability to commercialize our product candidates.

SD-101, HEPLISAV-B and most of our earlier stage programs rely on oligonucleotide TLR agonists. Serious adverse event data relating to TLR agonists may require us to reduce the scope of or discontinue our operations.

Most of our programs, including our most advanced such as HEPLISAV-B and SD-101, incorporate TLR9 agonist CpG oligonucleotides. If any of our product candidates in clinical trials or similar products from competitors produce serious adverse event data, we may be required to delay, discontinue or modify many of our clinical trials or our clinical trial strategy. If a safety risk based on mechanism of action or the molecular structure were identified, it may hinder our ability to develop our product candidates or enter into potential collaboration or commercial arrangements. Rare diseases and a numerical imbalance in cardiac adverse events have been observed in patients in our clinical trials. If adverse event data are found to apply to our TLR agonist and/or inhibitor technology as a whole, we may be required to significantly reduce or discontinue our operations.

We have no commercialization experience, and the time and resources to reinstitute manufacturing and develop sales, marketing and distribution capabilities for HEPLISAV-B are significant. If we fail to achieve and sustain commercial success for HEPLISAV-B, either independently or with a partner, our business would be harmed.

If our most advanced product candidate, HEPLISAV-B, is approved, we will need us to establish sales, marketing and distribution capabilities, or make arrangements with third parties to perform these services. These efforts will require resources and time and we may not be able to enter into these arrangements on acceptable terms. In particular, significant resources may be necessary to successfully market, sell and distribute HEPLISAV-B to patients with diabetes, a group recommended by the Centers for Disease Control ("CDC") and Advisory Committee on Immunization Practices ("ACIP") to receive hepatitis B vaccination. Moreover, our pricing and reimbursement strategies with respect to our initial approval plans for HEPLISAV-B may significantly impact our ability to achieve commercial success in this potential patient population.

If we, or our partners, if any, are not successful in setting our marketing, pricing and reimbursement strategy, recruiting sales and marketing personnel or in building a sales and marketing infrastructure, we will have difficulty commercializing HEPLISAV-B, which would adversely affect our business and financial condition. To the extent we rely on other pharmaceutical or biotechnology companies with established sales, marketing and distribution systems to market HEPLISAV-B, we will need to establish and maintain partnership arrangements, and we may not be able to enter into these arrangements on acceptable terms or at all. To the extent that we enter into co-promotion or other arrangements, certain revenues we receive will depend upon the efforts of third parties, which may not be successful and are only partially in our control.

We rely on our facility in Düsseldorf, Germany and third parties to supply materials or perform processes necessary to manufacture our product candidates. We rely on a limited number of suppliers to produce the oligonucleotides we require for development and commercialization. Additionally, we have limited experience in manufacturing our product candidates in commercial quantities.

We rely on our facility in Düsseldorf and third parties to perform the multiple processes involved in manufacturing our product candidates, including 1018 and SD-101, certain antigens, the combination of the oligonucleotide and the antigens, and the formulation, fill and finish. In connection with our restructuring in January 2017, we elected to retain, but furlough, the majority of the workforce in Düsseldorf supporting the manufacture of HEPLISAV-B and utilize the existing stockpiled inventory of HEPLISAV-B to meet initial demand if the product is approved. If HEPLISAV-B is approved, we will need to re-activate our facility in Düsseldorf and scale up to meet demand in excess of current supply. Regulatory or other limitations on our ability to re-activate our manufacturing facility, or the termination or interruption of relationships with key suppliers may result in higher cost or delays in our product development or commercialization efforts

We have also relied on a limited number of suppliers to produce oligonucleotides for clinical trials and a single supplier to produce our 1018 for HEPLISAV-B. To date, we have manufactured only small quantities of oligonucleotides ourselves for development purposes. If we were unable to maintain our existing suppliers for 1018 and SD-101, we would have to establish an alternate qualified manufacturing capability, which would result in significant additional operating costs and delays in developing and commercializing our product candidates, particularly HEPLISAV-B. We or other third parties may not be able to produce product at a cost, quantity and quality that are available from our current third-party suppliers or at all.

We utilize our facility in Düsseldorf to manufacture rHBsAg for HEPLISAV-B. The commercial manufacturing of biological products is a time-consuming and complex process, which must be performed in compliance with GMP regulations. There can be no assurance that the FDA will find our manufacturing controls and facilities to be acceptable to support the approval of HEPLISAV-B.

In addition, we may not be able to comply with ongoing and comparable foreign regulations, and our manufacturing process may be subject to delays, disruptions or quality control/quality assurance problems. Noncompliance with these regulations or other problems with our manufacturing process may limit, delay or disrupt the commercialization of HEPLISAV-B or our other product candidates and could result in significant expense.

If we receive regulatory approval for our product candidates, we will be subject to ongoing FDA and foreign regulatory obligations and continued regulatory review.

We and our third party manufacturers and suppliers are required to comply with applicable GMP regulations and other international regulatory requirements. The regulations require that our product candidates be manufactured and records maintained in a prescribed manner with respect to manufacturing, testing and quality control/quality assurance activities. Manufacturers and suppliers of key components and materials must be named in a BLA submitted to the FDA for any product candidate for which we are seeking FDA approval. Additionally, third party manufacturers and suppliers and any manufacturing facility must undergo a pre-approval inspection before we can obtain marketing authorization for any of our product candidates. Even after a manufacturer has been qualified by the FDA, the manufacturer must continue to expend time, money and effort in the area of production and quality control to ensure full compliance with GMP. Manufacturers are subject to regular, periodic inspections by the FDA following initial approval. Further, to the extent that we contract with third parties for the manufacture of our products, our ability to control third-party compliance with FDA requirements will be limited to contractual remedies and rights of inspection.

If, as a result of the FDA's inspections, it determines that the equipment, facilities, laboratories or processes do not comply with applicable FDA regulations and conditions of product approval, the FDA may not approve the product or may suspend the manufacturing operations. If the manufacturing operations of any of the suppliers for our product candidates are suspended, we may be unable to generate sufficient quantities of commercial or clinical supplies of product to meet market demand, which would harm our business. In addition, if delivery of material from our suppliers were interrupted for any reason, we might be unable to ship our approved product for commercial supply or to supply our products in development for clinical trials. Significant and costly delays can occur if the qualification of a new supplier is required.

Failure to comply with regulatory requirements could prevent or delay marketing approval or require the expenditure of money or other resources to correct. Failure to comply with applicable requirements may also result in warning letters, fines, injunctions, civil penalties, recall or seizure of products, total or partial suspension of production, refusal of the government to renew marketing applications and criminal prosecution, any of which could be harmful to our ability to generate revenues and our stock price.

Any regulatory approvals that we receive for our product candidates are likely to contain requirements for post-marketing follow-up studies, which may be costly. Product approvals, once granted, may be modified based on data from subsequent studies or commercial use. As a result, limitations on labeling indications or marketing claims, or withdrawal from the market may be required if problems occur after approval and commercialization.

We may develop, seek regulatory approval for and market our product candidates outside the U.S., requiring a significant commitment of resources. Failure to successfully manage our international operations could result in significant unanticipated costs and delays in regulatory approval or commercialization of our product candidates.

We may seek to introduce certain of our product candidates, including HEPLISAV-B, in various markets outside the U.S. Developing, seeking regulatory approval for and marketing our product candidates outside the U.S. could impose substantial burdens on our resources and divert management's attention from domestic operations. International operations are subject to risk, including:

- the difficulty of managing geographically distant operations, including recruiting and retaining qualified employees, locating adequate facilities and establishing useful business support relationships in the local community;
- compliance with varying international regulatory requirements, laws and treaties;
- securing international distribution, marketing and sales capabilities;

- adequate protection of our intellectual property rights;
- obtaining regulatory and pricing approvals at a level sufficient to justify commercialization;
- legal uncertainties and potential timing delays associated with tariffs, export licenses and other trade barriers;
- diverse tax consequences;
- the fluctuation of conversion rates between foreign currencies and the U.S. dollar; and
- regional and geopolitical risks.

We have withdrawn our MAA for HEPLISAV-B in Europe and we may not be able to provide sufficient data or respond to other comments to our previously filed MAA sufficient to obtain regulatory approvals in Europe in a reasonable time period or at all. Any failure or delay in obtaining regulatory approval in one jurisdiction may have a negative effect on the regulatory approval process in other jurisdictions. If we are unable to successfully manage our international operations, we may incur significant unanticipated costs and delays in regulatory approval or commercialization of our product candidates, which would impair our ability to generate revenues.

If any products we develop are not accepted by the market or if regulatory agencies limit our labeling indications, require labeling content that diminishes market uptake of our products or limits our marketing claims, we may be unable to generate significant revenues, if any.

Even if we obtain regulatory approval for our product candidates and are able to commercialize them, our products may not gain market acceptance among physicians, patients, healthcare payors and the medical community.

The degree of market acceptance of any of our approved products will depend upon a number of factors, including:

- the indication for which the product is approved and its approved labeling;
- the presence of other competing approved therapies;
- the potential advantages of the product over existing and future treatment methods;
- the relative convenience and ease of administration of the product;
- the strength of our sales, marketing and distribution support;
- the price and cost-effectiveness of the product; and
- sufficient third-party reimbursement.

The FDA or other regulatory agencies could limit the labeling indication for which our product candidates may be marketed or could otherwise limit marketing efforts for our products. If we are unable to achieve approval or successfully market any of our product candidates, or marketing efforts are restricted by regulatory limits, our ability to generate revenues could be significantly impaired.

We face uncertainty regarding coverage, pricing and reimbursement and the practices of third party payors, which may make it difficult or impossible to sell our product candidates on commercially reasonable terms.

In both domestic and foreign markets, our ability to achieve profitability will depend in part on the negotiation of a favorable price or the availability of appropriate reimbursement from third party payors, in particular for HEPLISAV-B where existing products are already marketed. While in the U.S., pricing for hepatitis B vaccines is currently stable and reimbursement is favorable as private and public payors recognize the value of prophylaxis in this setting given the high costs of potential morbidity and mortality, there can be no assurance that HEPLISAV-B would launch with stable pricing and favorable reimbursement.

Existing laws affecting the pricing and coverage of pharmaceuticals and other medical products by government programs and other third party payors may change before any of our product candidates are approved for marketing. In addition, third party payors are increasingly challenging the price and cost-effectiveness of medical products and services, and pricing and reimbursement decisions may not allow our products to compete effectively with existing or competitive products. Because we intend to offer products, if approved, that involve new technologies and new approaches to treating disease, the willingness of third party payors to reimburse for our products is uncertain. We will have to charge a price for our products that is sufficient to enable us to recover our considerable investment in product development and our operating costs. Adequate third-party reimbursement may not be available to enable us to maintain price levels sufficient to achieve profitability and could harm our future prospects and reduce our stock price.

We are unable to predict what impact the Health Care and Education Reconciliation Act of 2010 or other reform legislation will have on our business or future prospects. The uncertainty as to the nature and scope of the implementation of any proposed reforms limits our ability to forecast changes that may affect our business. In Europe, the success of our products, in particular HEPLISAV-B, will depend largely on obtaining and maintaining government reimbursement because many providers in European countries are unlikely to use medical products that are not reimbursed by their governments. Many countries in Europe have adopted legislation and increased efforts to control prices of healthcare products. We are unable to predict the impact these actions will have on our business or future prospects.

We rely on CROs to conduct our clinical trials. If these third parties do not fulfill their contractual obligations or meet expected deadlines, our planned clinical trials may be delayed and we may fail to obtain the regulatory approvals necessary to commercialize our product candidates.

We rely on third parties to conduct our clinical trials. If these third parties do not perform their obligations or meet expected deadlines our planned clinical trials may be extended, delayed, modified or terminated. While we conduct regular reviews of the data, we are dependent on the processes and quality control efforts of our third party contractors to ensure that detailed, quality records are maintained to support the results of the clinical trials that they are conducting on our behalf. Any extension, delay, modification or termination of our clinical trials or failure to ensure adequate documentation and the quality of the results in the clinical trials could delay or otherwise adversely affect our ability to commercialize our product candidates and could have a material adverse effect on our business and operations.

A key part of our business strategy is to establish collaborative relationships to commercialize and fund development of our product candidates. We may not succeed in establishing and maintaining collaborative relationships, which may significantly limit our ability to develop and commercialize our products successfully, if at all.

We may need to establish collaborative relationships to obtain domestic and international sales, marketing and distribution capabilities for our product candidates, in particular with respect to the commercialization of HEPLISAV-B, if approved. Failure to obtain a collaborative relationship for HEPLISAV-B, particularly in markets requiring extensive sales efforts, may significantly impair the potential for this product. The process of establishing and maintaining collaborative relationships is difficult, time-consuming and involves significant uncertainty, including:

- our partners may seek to renegotiate or terminate their relationships with us due to unsatisfactory clinical results, manufacturing issues, a change in business strategy, a change of control or other reasons;
- our shortage of capital resources may impact the willingness of companies to collaborate with us;
- our contracts for collaborative arrangements are terminable at will on written notice and may otherwise expire or terminate and we may not have alternative funding available;
- our partners may choose to pursue alternative technologies, including those of our competitors;
- we may have disputes with a partner that could lead to litigation or arbitration;
- we have limited control over the decisions of our partners and they may change the priority of our programs in a manner that would result in termination of the agreement or add significant delay in the partnered program;
- our ability to generate future payments and royalties from our partners depends upon the abilities of our partners to establish the safety and efficacy of our drug candidates, obtain regulatory approvals and successfully manufacture and achieve market acceptance of products developed from our drug candidates;
- we or our partners may fail to properly initiate, maintain or defend our intellectual property rights, where applicable, or a party may use our proprietary information in such a way as to invite litigation that could jeopardize or potentially invalidate our proprietary information or expose us to potential liability;
- our partners may not devote sufficient capital or resources towards our product candidates; and
- our partners may not comply with applicable government regulatory requirements.

If any collaborator fails to fulfill its responsibilities in a timely manner, or at all, our research, clinical development, manufacturing or commercialization efforts pursuant to that collaboration could be delayed or terminated, or it may be necessary for us to assume responsibility for expenses or activities that would otherwise have been the responsibility of our collaborator. If we are unable to establish and maintain collaborative relationships on acceptable terms or to successfully transition terminated collaborative agreements, we may have to delay or discontinue further development of one or more of our product candidates, undertake development and commercialization activities at our own expense or find alternative sources of capital.

Many of our competitors have greater financial resources and expertise than we do. If we are unable to successfully compete with existing or potential competitors as a result of these disadvantages we may be unable to generate revenues and our business will be harmed.

We compete with pharmaceutical companies, biotechnology companies, academic institutions and research organizations, in developing therapies to prevent or treat cancer and infectious and inflammatory diseases. For example, if it is approved in the future, HEPLISAV-B will compete in the U.S. with established hepatitis B vaccines marketed by Merck and GSK and outside the U.S. with vaccines from those companies and several additional established pharmaceutical companies. The field of oncology therapeutics is extremely competitive, with numerous biotechnology and pharmaceutical companies developing therapies for all of the targets the Company is pursuing. Competitors may develop more effective, more affordable or more convenient products or may achieve earlier patent protection or commercialization of their products. These competitive products may render our product candidates obsolete or limit our ability to generate revenues from our product candidates.

Existing and potential competitors may also compete with us for qualified scientific and management personnel, as well as for technology that would be advantageous to our business. Although certain of our employees have commercialization experience, as a company we currently have limited sales, marketing and distribution capabilities. Our success in developing marketable products and achieving a competitive position will depend, in part, on our ability to attract and retain qualified personnel. If we do not succeed in attracting new personnel and retaining and motivating existing personnel, our operations may suffer and we may be unable to obtain financing, enter into collaborative arrangements, sell our product candidates or generate revenues.

As we evolve from a company primarily involved in research and development to a company potentially involved in commercialization, we may encounter difficulties in managing our growth and expanding our operations successfully.

If we are successful in advancing HEPLISAV-B through the development stage towards commercialization, we will need to expand our organization, including adding marketing and sales capabilities or contracting with third parties to provide these capabilities for us. As our operations expand, we expect that we will also need to manage additional relationships with various collaborative partners, suppliers and other third parties. Future growth will impose significant added responsibilities on our organization, in particular on management. Our future financial performance and our ability to commercialize HEPLISAV-B and to compete effectively will depend, in part, on our ability to manage any future growth effectively. To that end, we may not be able to manage our growth efforts effectively, and hire, train and integrate additional management, administrative and sales and marketing personnel, and our failure to accomplish any of these activities could prevent us from successfully growing our company.

If we fail to comply with the extensive requirements applicable to biopharmaceutical manufacturers and marketers under the healthcare fraud and abuse, anticorruption, privacy, transparency and other laws of the jurisdictions in which we conduct our business, we may be subject to significant liability.

Our activities, and the activities of our agents, including some contracted third parties, are subject to extensive government regulation and oversight both in the U.S. and in foreign jurisdictions. If we obtain approval for and commercialize a vaccine or other product, our interactions with physicians and others in a position to prescribe or purchase our products will be subject to a legal regime designed to prevent healthcare fraud and abuse. We also are subject to laws pertaining to transparency of transfers of value to healthcare providers; privacy and data protection; compliance with industry voluntary compliance guidelines; and prohibiting the payment of bribes. Relevant U.S. laws include:

- the Anti-Kickback Statute, which prohibits persons from, among other things, knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal health care programs, such as the Medicare and Medicaid programs;
- federal false claims laws which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, claims for payment to the government or its agents that are false or fraudulent;
- laws that require transparency regarding financial arrangements with health care professionals, such as the reporting and disclosure requirements imposed by the Patient Protection and Affordable Care Act (“PPACA”) and state laws;
- the federal Health Insurance Portability and Accountability Act of 1997 (“HIPAA”), which created new federal criminal statutes that prohibit executing a scheme to defraud any healthcare benefit program and making false statements relating to healthcare matters;
- HIPAA, as amended by the Health Information Technology and Criminal Health Act, and its implementing regulations, which imposes certain requirements relating to the privacy, security, and transmission of individually identifiable health information;
- the Foreign Corrupt Practices Act, which prohibits the payment of bribes to foreign government officials and requires that a company’s books and records accurately reflect the company’s transactions; and

- foreign and state law equivalents of each of the federal laws described above, such as anti-kickback and false claims laws which may apply to items or services reimbursed by state health insurance programs or any third party payor, including commercial insurers; and state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the applicable compliance guidance promulgated by the federal government.

The Office of Inspector General for the Department of Health and Human Services, the Department of Justice, states' Attorneys General and other governmental authorities actively enforce the laws and regulations discussed above. These entities also coordinate extensively with the FDA, using legal theories that connect violations of the Federal Food, Drug and Cosmetic Act (such as off-label promotion) to the eventual submission of false claims to government healthcare programs. Prosecution of such promotion cases under the healthcare fraud and abuse laws provides the potential for private parties (qui tam relators, or "whistleblowers") to initiate cases on behalf of the government and provides for significantly higher penalties upon conviction.

In the U.S., pharmaceutical and biotechnology companies have been the target of numerous government prosecutions and investigations alleging violations of law, including claims asserting impermissible off-label promotion of pharmaceutical products, payments intended to influence the referral of federal or state health care business, submission of false claims for government reimbursement, or submission of incorrect pricing information.

Violations of any of the laws described above or any other applicable governmental regulations and other similar foreign laws may subject us, our employees or our agents to criminal and/or civil sanctions, including fines, civil monetary penalties, exclusion from participation in government health care programs (including Medicare and Medicaid), and the restriction or restructuring of our operations, any of which could adversely affect our ability to operate our business and our financial results. Additionally, whether or not we have complied with the law, an investigation into alleged unlawful conduct may cause us to incur significant expense, cause reputational damage, divert management time and attention, and otherwise adversely affect our business. While we have developed and instituted a corporate compliance program, we cannot guarantee that we, our employees, our consultants, contractors, or other agents are or will be in compliance with all applicable U.S. or foreign laws.

We expect there will continue to be federal and state laws and/or regulations, proposed and implemented, that could impact our operations and business. The extent to which future legislation or regulations, if any, relating to health care fraud and abuse laws and/or enforcement, may be enacted or what effect such legislation or regulation would have on our business remains uncertain.

The loss of key personnel, including our Chief Executive Officer, could delay or prevent achieving our objectives.

We depend on our senior executive officers, as well as key scientific and other personnel. Our research, product development and business efforts could be adversely affected by the loss of one or more key members of our scientific or management staff, including our Chief Executive Officer. We currently have no key person insurance on any of our employees.

We face product liability exposure, which, if not covered by insurance, could result in significant financial liability.

While we have not experienced any product liability claims to date, the use of any of our product candidates in clinical trials and the sale of any approved products will subject us to potential product liability claims and may raise questions about a product's safety and efficacy. As a result, we could experience a delay in our ability to commercialize one or more of our product candidates or reduced sales of any approved product candidates. In addition, a product liability claim may exceed the limits of our insurance policies and exhaust our internal resources. We have obtained limited clinical trial liability and umbrella insurance coverage for our clinical trials. This coverage may not be adequate or may not continue to be available in sufficient amounts, at an acceptable cost or at all. We also may not be able to obtain commercially reasonable product liability insurance for any product approved for marketing in the future. A product liability claim, product recalls or other claims, as well as any claims for uninsured liabilities or in excess of insured liabilities, would divert our management's attention from our business and could result in significant financial liability.

We are involved in legal actions that are expensive and time consuming, and, if resolved adversely, could harm our business, financial condition, or results of operations.

Securities class action lawsuits against us are pending and purported stockholder derivative complaints have been brought against us. Any negative outcome from such lawsuits could result in payments of monetary damages or fines, or adversely affect our products, and accordingly our business, financial condition, or results of operations could be materially and adversely affected.

There can be no assurance that a favorable final outcome will be obtained in these cases, and defending any lawsuit is costly and can impose a significant burden on management and employees. Any litigation to which we are a party may result in an onerous or unfavorable judgment that may not be reversed upon appeal or in payments of monetary damages or fines not covered by insurance, or we may decide to settle lawsuits on unfavorable terms, which could adversely affect our business, financial conditions, or results of operations.

We use hazardous materials and controlled substances in our business. Any claims or liabilities relating to improper handling, storage or disposal of these materials and substances could be time consuming and costly to resolve.

Our research and product development activities involve the controlled storage, use and disposal of hazardous and radioactive materials and biological waste, and controlled substances. We are subject to federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these materials, substances, and certain waste products. We believe we are currently in compliance with all government permits that are required for the storage, use and disposal of these materials and controlled substances. However, we cannot eliminate the risk of accidental contamination or injury to persons or property from these materials, or that controlled substances will be accidentally stored or used in violation of relevant federal, state and local requirements. In the event of an accident related to hazardous materials or a violation of requirements pertaining to controlled substances, we could be held liable for damages, cleanup costs or penalized with fines, and this liability could exceed the limits of our insurance policies and exhaust our internal resources. We may have to incur significant costs to comply with future environmental laws and regulations, and laws and regulations pertaining to the storage and use of controlled substances.

Significant disruptions of information technology systems or breaches of data security could adversely affect our business.

Our business is increasingly dependent on critical, complex and interdependent information technology systems, including Internet-based systems, to support business processes as well as internal and external communications. The size and complexity of our computer systems make them potentially vulnerable to breakdown, malicious intrusion and computer viruses that may result in the impairment of key business processes.

In addition, our systems are potentially vulnerable to data security breaches—whether by employees or others—that may expose sensitive data to unauthorized persons. Such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personally identifiable information (including sensitive personal information) of our employees, collaborators, clinical trial patients, and others. A data security breach or privacy violation that leads to disclosure or modification of or prevents access to patient information, including personally identifiable information or protected health information, could harm our reputation, compel us to comply with federal and/or state breach notification laws, subject us to mandatory corrective action, require us to verify the correctness of database contents and otherwise subject us to liability under laws and regulations that protect personal data, resulting in increased costs or loss of revenue. If we are unable to prevent such data security breaches or privacy violations or implement satisfactory remedial measures, our operations could be disrupted, and we may suffer loss of reputation, financial loss and other regulatory penalties because of lost or misappropriated information, including sensitive patient data. In addition, these breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above. Moreover, the prevalent use of mobile devices that access confidential information increases the risk of data security breaches, which could lead to the loss of confidential information, trade secrets or other intellectual property. While we have implemented security measures to protect our data security and information technology systems, such measures may not prevent such events.

Such disruptions and breaches of security could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to our Finances and Capital Requirements

We have incurred substantial losses since inception and do not have any commercial products that generate revenue.

We have experienced significant net losses in each year since our inception. Our accumulated deficit was $812.2 million as of December 31, 2016. To date, our revenue has resulted from collaboration agreements, government and private agency grants and services and license fees from our customers, including the customers of our wholly-owned subsidiary Dynavax GmbH. We anticipate that we will incur substantial additional net losses in future years as a result of our continuing investment in research and development activities and our efforts to further develop and seek regulatory approval of HEPLISAV-B.

We do not have any products that generate revenue. There can be no assurance whether HEPLISAV-B or any of our other product candidates can be successfully developed, financed or commercialized in a timely manner based on our current plans. We will not be able to achieve approval or generate meaningful sales without significant additional resources. Our ability to generate revenue depends upon obtaining regulatory approvals for our product candidates, generating product sales and entering into and maintaining successful collaborative relationships.

If we are unable to generate significant revenues or achieve profitability, we may be required to reduce or discontinue our current and planned operations, enter into a transaction that constitutes a change in control of the company or raise additional capital on less than favorable terms.

If we are unable to generate significant revenues or achieve profitability, we will require substantial additional capital to continue development of our product candidates and if our most advanced candidate, HEPLISAV-B, is approved, to commence sales and marketing activities.

To continue development of our product candidates and, if it is approved, to launch HEPLISAV-B, we will need significant additional funds. Addressing this need may occur through strategic alliance and licensing arrangements and/or future public or private financings. We expect to continue to spend substantial funds in connection with:

- development, manufacturing and, if approved, commercialization of our product candidates, particularly HEPLISAV-B;
- various human clinical trials for our product candidates; and
- protection of our intellectual property.

The cash requirements of our current operations will be significantly impacted by the FDA decision regarding our response to its 2016 CRL for HEPLISAV-B. Although we believe we have current funds for the next twelve months based on our current operational plans, cash, cash equivalents and marketable securities on hand, we expect that if HEPLISAV-B is approved by the FDA, we will require additional capital following approval, in particular if we fail to enter into a third party collaboration following approval.

Sufficient additional financing through future public or private financings, strategic alliance and licensing arrangements or other financing sources may not be available on acceptable terms or at all. Our ability to raise additional capital in the equity and debt markets is dependent on a number of factors, including, but not limited to, the market demand for our common stock, which itself is subject to a number of development and business risks and uncertainties, as well as the uncertainty that we would be able to raise such additional capital at a price or on terms that are favorable to us. Equity or other financings, if completed, could result in significant dilution or otherwise adversely affect the rights of existing stockholders. If adequate funds are not available in the future, we may need to delay, reduce the scope of, or put on hold the HEPLISAV-B program or other development programs while we seek strategic alternatives.

Risks Related to our Intellectual Property

We rely on licenses to intellectual property from third parties. Impairment of these licenses or our inability to maintain them would severely harm our business.

Our current research and development efforts depend in part upon our license arrangements for intellectual property owned by third parties. Our dependence on these licenses subjects us to numerous risks, such as disputes regarding the use of the licensed intellectual property and the creation and ownership of new discoveries under such license agreements. In addition, these license arrangements require us to make timely payments to maintain our licenses and typically contain diligence or milestone-based termination provisions. Our failure to meet any obligations pursuant to these agreements could allow our licensors to terminate our agreements or undertake other remedies such as converting exclusive to non-exclusive licenses if we are unable to cure or obtain waivers for such failures or amend such agreements on terms acceptable to us. In addition, our license agreements may be terminated or may expire by their terms, and we may not be able to maintain the exclusivity of these licenses. If we cannot obtain and maintain licenses that are advantageous or necessary to the development or the commercialization of our product candidates, we may be required to expend significant time and resources to develop or license similar technology or to find other alternatives to maintaining the competitive position of our products. If such alternatives are not available to us in a timely manner or on acceptable terms, we may be unable to continue development or commercialize our product candidates. In the absence of a current license, we may be required to redesign our technology so it does not infringe a third party's patents, which may not be possible or could require substantial funds and time.

If third parties successfully assert that we have infringed their patents and proprietary rights or challenge our patents and proprietary rights, we may become involved in intellectual property disputes and litigation that would be costly, time consuming and delay or prevent development or commercialization of our product candidates.

We may be exposed to future litigation by third parties based on claims that our product candidates or proprietary technologies infringe their intellectual property rights, or we may be required to enter into litigation to enforce patents issued or licensed to us or to determine the ownership, scope or validity of our or another party's proprietary rights, including a challenge as to the validity of our issued and pending claims. From time to time we are involved in various interference and other administrative proceedings related to our intellectual property which has caused us to incur certain legal expenses. If we become involved in any litigation and/or other significant interference proceedings related to our intellectual property or the intellectual property of others, we will incur substantial additional expenses and it will divert the efforts of our technical and management personnel.

Two of our potential competitors, Merck and GSK, are exclusive licensees of broad patents covering methods of production of rHBsAg, a component of HEPLISAV-B. In addition, the Institut Pasteur also owns or has exclusive licenses to patents relating to aspects of production of rHBsAg in the U.S. While some of these patents have expired or will soon expire outside the U.S., they remain in force in the U.S. To the extent we are able to commercialize HEPLISAV-B in the U.S. while these patents remain in force, Merck, GSK or their respective licensors or the Institut Pasteur may bring claims against us.

If we or our collaborators are unsuccessful in defending or prosecuting our issued and pending claims or in defending potential claims against our products, for example, as may arise in connection with the commercialization of HEPLISAV-B or any similar product candidate, we or our collaborator could be required to pay substantial damages or be unable to commercialize our product candidates or use our proprietary technologies without a license from such third party. A license may require the payment of substantial fees or royalties, require a grant of a cross-license to our technology or may not be available on acceptable terms, if at all. Any of these outcomes could require us to change our business strategy and could materially impact our business and operations.

One of our potential competitors, Pfizer, has issued patent claims, as well as patent claims pending with the PTO and foreign patent offices, that may be asserted against our TLR agonist products and our TLR inhibitor products. We may need to obtain a license to one or more of these patent claims held by Pfizer by paying fees or royalties or offering rights to our own proprietary technologies to commercialize one or more of our formulations other than with respect to HEPLISAV-B, for which we have a license. A license for other uses may not be available to us on acceptable terms, if at all, which could preclude or limit our ability to commercialize our products.

If the combination of patents, trade secrets and contractual provisions that we rely on to protect our intellectual property is inadequate, the value of our product candidates will decrease.

Our success depends on our ability to:

- obtain and protect commercially valuable patents or the rights to patents both domestically and abroad;
- operate without infringing upon the proprietary rights of others; and
- prevent others from successfully challenging or infringing our proprietary rights.

We will be able to protect our proprietary rights from unauthorized use only to the extent that these rights are covered by valid and enforceable patents or are effectively maintained as trade secrets. We try to protect our proprietary rights by filing and prosecuting U.S. and foreign patent applications. However, in certain cases such protection may be limited, depending in part on existing patents held by third parties, which may only allow us to obtain relatively narrow patent protection. In the U.S., legal standards relating to the validity and scope of patent claims in the biopharmaceutical field can be highly uncertain, are still evolving and involve complex legal and factual questions for which important legal principles remain unresolved.

The biopharmaceutical patent environment outside the U.S. is even more uncertain. We may be particularly affected by this uncertainty since several of our product candidates may initially address market opportunities outside the U.S., where we may only be able to obtain limited patent protection.

The risks and uncertainties that we face with respect to our patents and other proprietary rights include the following:

- we may not receive an issued patent for any of our patent applications or for any patent applications that we have exclusively licensed;
- the pending patent applications we have filed or to which we have exclusive rights may take longer than we expect to result in issued patents;
- the claims of any patents that are issued may not provide meaningful protection or may not be valid or enforceable;
- we might not be able to develop additional proprietary technologies that are patentable;
- the patents licensed or issued to us or our collaborators may not provide a competitive advantage;
- patents issued to other parties may limit our intellectual property protection or harm our ability to do business;
- other parties may independently develop similar or alternative technologies or duplicate our technologies and commercialize discoveries that we attempt to patent; and
- other parties may design around technologies we have licensed, patented or developed.

We also rely on trade secret protection and confidentiality agreements to protect our interests in proprietary know-how that is not patentable and for processes for which patents are difficult to enforce. We cannot be certain that we will be able to protect our trade secrets adequately. Any disclosure of confidential data in the public domain or to third parties could allow our competitors to learn our trade secrets. If we are unable to adequately obtain or enforce proprietary rights, we may be unable to commercialize our products, enter into collaborations, generate revenues or maintain any advantage we may have with respect to existing or potential competitors.

Risks Related to an Investment in our Common Stock

Our stock price is subject to volatility, and your investment may suffer a decline in value.

The market prices for securities of biopharmaceutical companies have in the past been, and are likely to continue in the future, to be, very volatile. The market price of our common stock is subject to substantial volatility depending upon many factors, many of which are beyond our control, including:

- progress or results of any of our clinical trials or regulatory or manufacturing efforts, in particular any announcements regarding the progress or results of our planned trials and BLA filing and communications, from the FDA or other regulatory agencies, including a decision by the FDA regarding our response to its 2016 CRL for HEPLISAV-B and the potential for an advisory committee meeting for HEPLISAV-B;
- our ability to receive timely regulatory approval for our product candidates;
- our ability to establish and maintain collaborations for the development and commercialization of our product candidates;
- our ability to raise additional capital to fund our operations;
- the success or failure of clinical trials involving our immuno-oncology product candidates and the product candidates of third party collaborators in combination studies;
- technological innovations, new commercial products or drug discovery efforts and preclinical and clinical activities by us or our competitors;
- changes in our intellectual property portfolio or developments or disputes concerning the proprietary rights of our products or product candidates;
- our ability to obtain component materials and successfully enter into manufacturing relationships for our product candidates or establish manufacturing capacity on our own;
- our ability to establish and maintain licensing agreements for intellectual property necessary for the development of our product candidates;
- changes in government regulations, general economic conditions or industry announcements;
- issuance of new or changed securities analysts' reports or recommendations;
- actual or anticipated fluctuations in our quarterly financial and operating results; and
- the volume of trading in our common stock.

One or more of these factors could cause a substantial decline in the price of our common stock. In addition, securities class action and shareholder derivative litigation has often been brought against a company following a decline in the market price of its securities. We are currently the target of such litigation, resulting from the decline in our common stock following the disclosure in 2013 that the FDA would not approve HEPLISAV-B for sale without a significant additional clinical study, and following the disclosure in November 2016 of the FDA's 2016 CRL related to HEPLISAV-B. We may in the future be the target of additional such litigation. Securities and shareholder derivative litigation could result in substantial costs, and divert management's attention and resources, which could harm our business, operating results and financial condition.

The anti-takeover provisions of our certificate of incorporation, our bylaws, Delaware law and our share purchase rights plan may prevent or frustrate a change in control, even if an acquisition would be beneficial to our stockholders, which could affect our stock price adversely and prevent attempts by our stockholders to replace or remove our current management.

Provisions of our certificate of incorporation and bylaws may delay or prevent a change in control, discourage bids at a premium over the market price of our common stock and adversely affect the market price of our common stock and the voting or other rights of the holders of our common stock. These provisions include:

- authorizing our Board of Directors to issue additional preferred stock with voting rights to be determined by the Board of Directors;
- limiting the persons who can call special meetings of stockholders;
- prohibiting stockholder actions by written consent;
- creating a classified board of directors pursuant to which our directors are elected for staggered three year terms;
- providing that a supermajority vote of our stockholders is required for amendment to certain provisions of our certificate of incorporation and bylaws; and

- establishing advance notice requirements for nominations for election to our Board of Directors or for proposing matters that can be acted on by stockholders at stockholder meetings.

Our share purchase rights plan may have certain anti-takeover effects. Specifically, the rights issued pursuant to the plan will cause substantial dilution to a person or group that attempts to acquire the Company on terms not approved by our Board of Directors. Although the rights should not interfere with any merger or other business combination approved by the Board of Directors since the rights issued may be amended to permit such acquisition or redeemed by the Company at $0.001 per right prior to the earliest of (i) the time that a person or group has acquired beneficial ownership of 20% or more of our common stock or (ii) the final expiration date of the rights, the effect of the rights plan may deter a potential acquisition of the Company. In addition, we remain subject to the provisions of the Delaware corporation law that, in general, prohibit any business combination with a beneficial owner of 15% or more of our common stock for three years unless the holder's acquisition of our stock was approved in advance by our Board of Directors.

We will continue to incur increased costs and demands upon management as a result of complying with the laws and regulations affecting public companies, which could affect our operating results.

As a public company, we will continue to incur legal, accounting and other expenses associated with reporting requirements and corporate governance requirements, including requirements under the Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, as well as new rules implemented by the SEC and the NASDAQ Stock Market LLC. We may need to continue to implement additional financial and accounting systems, procedures and controls to accommodate changes in our business and organization and to comply with new reporting requirements. There can be no assurance that we will be able to maintain a favorable assessment as to the adequacy of our internal control over financial reporting. If we are unable to reach an unqualified assessment, or our independent registered public accounting firm is unable to issue an unqualified attestation as to the effectiveness of our internal control over financial reporting as of the end of our fiscal year, investors could lose confidence in the reliability of our financial reporting which could harm our business and could impact the price of our common stock.

Future sales of our common stock or the perception that such sales may occur in the public market could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. As of December 31, 2016 we had 38,598,618 shares of common stock outstanding, all of which shares were eligible for sale in the public market, subject in some cases to the volume limitations and manner of sale requirements under Rule 144 of the Securities Act of 1933, as amended.

Future sales of our common stock, including pursuant to our 2015 ATM Agreement with Cowen, would cause immediate dilution and could adversely affect the market price of our common stock. Under our universal shelf registration statement filed by us in November 2015, as amended in February 2017, we may sell any combination of common stock, preferred stock, debt securities and warrants in one or more offerings in the aggregate amount of up to $200,000,000, which includes amounts sold pursuant to our 2015 ATM. The sale or issuance of our securities, as well as the existence of outstanding options and shares of common stock reserved for issuance under our option and equity incentive plans also may adversely affect the terms upon which we are able to obtain additional capital through the sale of equity securities.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

As of December 31, 2016, we lease approximately 55,200 square feet of laboratory and office space in Berkeley, California under agreements expiring in June 2018. We also lease approximately 5,600 square meters of laboratory and office space in Düsseldorf, Germany under lease agreements expiring in March 2023.

ITEM 3. LEGAL PROCEEDINGS

From time to time in the ordinary course of business, Dynavax receives claims or allegations regarding various matters, including employment, vendor and other similar situations in the conduct of our operations.

On June 18, 2013, the first of two substantially similar securities class action complaints was filed in the U.S. District Court for the Northern District of California against the Company and certain of its former executive officers. The second was filed on June 26, 2013. On August 22, 2013, these two complaints and all related actions that subsequently may be filed in, or transferred to, the District Court were consolidated into a single case entitled *In re Dynavax Technologies Securities Litigation*. On September 27, 2013, the Court appointed a lead plaintiff and lead counsel. On November 12, 2013, lead plaintiff filed his consolidated class action complaint (the "consolidated complaint"), which named a former director of the Company as a defendant in addition to the Company and the former executive officers identified in the two prior complaints (collectively, the "defendants"). The consolidated complaint alleged that between April 26, 2012 and June 10, 2013, the Company and certain of its executive officers and directors violated Sections 10(b) and 20(a) of the Exchange Act and Rule 10b-5 promulgated thereunder, in connection with statements related to the Company's product, HEPLISAV-B, an investigational adult hepatitis B vaccine. The consolidated complaint sought unspecified damages, interest, attorneys' fees, and other costs.

On September 7, 2016, the parties signed the Stipulation of Settlement, which provides for a payment of $4.5 million by the defendants, of which the Company is responsible for $4.1 million, and results in the dismissal and release of all claims against the defendants in connection with the securities class action, upon final court approval. The settlement will be paid for by the Company's insurance carriers. On February 6, 2017, the Court approved the settlement and entered a Final Order and Judgment dismissing the case with prejudice.

On July 3, 2013, a purported stockholder derivative complaint was filed in the Superior Court of California for the County of Alameda against certain of our current and former executive officers and directors. On August 9, 2013, a substantially similar purported stockholder derivative complaint was filed in the U.S. District Court for the Northern District of California. The derivative complaints allege breaches of fiduciary duties by the defendants and other violations of law. In general, the complaints allege that certain of our current and former executive officers and directors caused or allowed for the dissemination of materially false and misleading statements regarding our product, HEPLISAV-B. Plaintiffs are seeking unspecified monetary damages, including restitution from defendants, attorneys' fees and costs, and other relief.

On August 21, 2013, pursuant to a stipulation between the parties, the state court stayed the state derivative case pending a decision on the Company's motion to dismiss in the *In re Dynavax Technologies Securities Litigation*. On October 17, 2013, pursuant to a stipulation between the parties, the federal court stayed the federal derivative case pending a decision on the Company's motion to dismiss in the *In re Dynavax Technologies Securities Litigation*. On May 8, 2015, the parties filed a stipulation to keep the state derivative case stayed until a final resolution in the *In re Dynavax Technologies Securities Litigation*. On May 15, 2015, the parties also stipulated to keep the federal derivative case stayed until a final resolution in the *In re Dynavax Technologies Securities Litigation*.

On November 18, 2016, two substantially similar securities class action complaints were filed in the U.S. District Court for the Northern District of California against the Company and two of its executive officers, in *Soontjens v. Dynavax Technologies Corporation et. al.*, ("*Soontjens*") and *Shumake v. Dynavax Technologies Corporation et al.*, ("*Shumake*"). The *Soontjens* complaint alleges that between March 10, 2014 and November 11, 2016, the Company and certain of its executive officers violated Sections 10(b) and 20(a) of the Exchange Act and Rule 10b-5 promulgated thereunder, in connection with statements related to HEPLISAV-B. The *Shumake* complaint alleges violations of the same statutes related to the same subject, but between January 7, 2016 and November 11, 2016. The plaintiffs in both actions are seeking an unspecified amount of damages and attorneys' fees and costs. On January 17, 2017, these two actions and all related actions that subsequently may be filed in, or transferred to, the District Court were consolidated into a single case entitled *In re Dynavax Technologies Securities Litigation*. On January 31, 2017, the court appointed lead plaintiff and lead counsel. Lead plaintiff's deadline to file a consolidated amended complaint is March 17, 2017.

Additionally, on January 18, 2017, the Company was made aware of a derivative complaint that a purported stockholder of the Company intends to file in the Superior Court of California for the County of Alameda against certain of the Company's current executive officers and directors. Following this, on January 19, 2017, another purported stockholder of the Company filed a separate derivative complaint in the Superior Court of California for the County of Alameda against the same officers and directors who were named in the yet-to-be filed complaint that the Company was made aware of on January 18, 2017. Both complaints generally allege that the defendants caused or allowed the Company to issue materially misleading statements and/or omit material information regarding HEPLISAV-B and the clinical trial related thereto and otherwise mismanaged the clinical trial related to HEPLISAV-B. Plaintiffs are seeking unspecified monetary damages, including restitution from defendants, corporate governance changes, attorneys' fees and costs, and other relief.

The Company believes that it has meritorious defenses and intends to defend these lawsuits vigorously. However, the lawsuits are subject to inherent uncertainties, the actual costs may be significant, and we may not prevail. We believe we are entitled to coverage under our relevant insurance policies with respect to these lawsuits, but coverage could be denied or prove to be insufficient.

ITEM 4. MINE SAFETY DISCLOSURE

Not applicable.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information and Holders

Our common stock is traded on the NASDAQ Capital Market under the ticker symbol "DVAX". Public trading of our common stock commenced on February 19, 2004. The following table sets forth for the periods indicated the high and low intra-day sale prices per share of our common stock.

	Common Stock Price	
	High	Low
2016		
First Quarter	$ 29.86	$ 15.52
Second Quarter	$ 23.62	$ 12.84
Third Quarter	$ 17.50	$ 10.11
Fourth Quarter	$ 13.23	$ 3.20
2015		
First Quarter	$ 26.89	$ 15.80
Second Quarter	$ 24.60	$ 18.53
Third Quarter	$ 32.49	$ 22.61
Fourth Quarter	$ 28.49	$ 21.65

As of March 7, 2017, there were approximately 55 holders of record of our common stock, as shown on the records of our transfer agent. We believe that our stockholders exceed 13,800 as the number of record holders excludes shares held in "street name" through brokers.

Dividends

We have never paid any cash dividends on our common stock. We currently expect to retain future earnings, if any, for use in the operation and expansion of our business and do not anticipate paying any cash dividends in the foreseeable future.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

Period	(a) Total Number of Shares (or Units) Purchased[1] (In thousands)	(b) Average Price Paid per Share (or Unit)	(c) Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs	(d) Maximum Number (or Approximate Dollar Value) of Shares (or Units) that May Yet Be Purchased Under the Plans or Programs
October 1, 2016 to October 31, 2016	-	$ -	-	-
November 1, 2016 to November 30, 2016	-	-	-	-
December 1, 2016 to December 31, 2016	42,511	4.62	-	-
Total	42,511	$ 4.62	-	-

(1) During December 2016, the Company withheld 42,511 shares of common stock on behalf of its employees for employee tax obligations due upon vesting of restricted stock.

ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations, and with the Consolidated Financial Statements and Notes thereto which are included elsewhere in this Form 10-K. The Consolidated Statements of Operations Data for the years ended December 31, 2016, 2015 and 2014 and the Consolidated Balance Sheets Data as of December 31, 2016 and 2015 are derived from the audited Consolidated Financial Statements included elsewhere in this Form 10-K. The Consolidated Statements of Operations Data for the years ended December 31, 2013 and 2012 and the Consolidated Balance Sheets Data as of December 31, 2014, 2013 and 2012 are derived from audited Consolidated Financial Statements that are not included in this Form 10-K. Historical results are not necessarily indicative of results to be anticipated in the future.

	Year Ended December 31,				
	2016	2015	2014	2013	2012
	(In thousands, except per share data)				
Consolidated Statements of Operations Data:					
Total revenues	$ 11,043	$ 4,050	$ 11,032	$ 11,251	$ 9,714
Operating expenses:					
Research and development	84,493	86,943	84,580	50,870	49,146
General and administrative	37,257	22,180	17,377	25,943	28,164
Unoccupied facility expense	-	-	386	926	-
Total operating expenses	121,750	109,123	102,343	77,739	77,310
Loss from operations	(110,707)	(105,073)	(91,311)	(66,488)	(67,596)
Other (expense) income:					
Interest income	755	205	191	116	291
Interest expense	-	(572)	(35)	-	(2,351)
Other (expense) income, net	(2,492)	317	433	(348)	(293)
Loss on extinguishment of debt(1)	-	(1,671)	-	-	-
Net loss	(112,444)	(106,794)	(90,722)	(66,720)	(69,949)
Net loss attributable to Dynavax	(112,444)	(106,794)	(90,722)	(66,720)	(69,949)
Preferred stock deemed dividend(2)	-	-	-	(8,469)	-
Net loss allocable to Dynavax common stockholders	$ (112,444)	$ (106,794)	$ (90,722)	$ (75,189)	$ (69,949)
Basic and diluted net loss per share allocable to Dynavax common stockholders	$ (2.92)	$ (3.25)	$ (3.45)	$ (3.83)	$ (4.10)
Shares used to compute basic and diluted net loss per share allocable to Dynavax common stockholders	38,506	32,881	26,289	19,628	17,047

(1) In September 2015, we repaid all outstanding amounts under a loan agreement. We recognized the repayment to be a substantial modification to the debt instrument and applied debt extinguishment accounting to record a one-time loss on extinguishment of debt in the amount of $1.7 million.

(2) Deemed dividend related to beneficial conversion feature of convertible preferred stock. The fair value of the common stock into which the Series B Preferred Stock was convertible exceeded the allocated purchase price of the Series B Preferred Stock by $8.5 million on the date of issuance, resulting in a deemed dividend. The Company recognized the deemed dividend as a one-time, non-cash, deemed dividend to the holders of Series B Preferred Stock on the date of issuance, which is the date the stock first became convertible.

	December 31,				
	2016	2015	2014	2013	2012
	(In thousands)				
Consolidated Balance Sheets Data:					
Cash, cash equivalents and marketable securities	$ 81,415	$ 196,125	$ 122,652	$ 189,376	$ 125,130
Working capital	69,563	171,161	107,158	176,186	109,173
Total assets	109,680	216,633	138,290	204,622	139,752
Long-term debt(1)	-	-	9,559	-	-
Accumulated deficit	(812,171)	(699,727)	(592,933)	(502,211)	(435,491)
Total stockholders' equity	89,201	187,079	100,482	186,294	114,826

(1) All outstanding amounts under a loan agreement were repaid in cash September 2015.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following Management's Discussion and Analysis of Financial Condition and Results of Operations contains forward-looking statements that involve a number of risks and uncertainties. Our actual results could differ materially from those indicated by forward-looking statements as a result of various factors, including but not limited to, the period for which we estimate our cash resources are sufficient, the availability of additional funds, as well as those set forth under "Risk Factors" and those that may be identified from time to time in our reports and registration statements filed with the Securities and Exchange Commission.

The following discussion and analysis is intended to provide an investor with a narrative of our financial results and an evaluation of our financial condition and results of operations. The discussion should be read in conjunction with "Item 6—Selected Financial Data" and the Consolidated Financial Statements and the related notes thereto set forth in "Item 8—Financial Statements and Supplementary Data."

Overview

We are a clinical-stage immunotherapy company focused on leveraging the power of the body's innate and adaptive immune responses through toll-like receptor ("TLR") stimulation. Our current product candidates are being investigated for use in multiple cancer indications, as a vaccine for the prevention of hepatitis B and as a disease modifying therapy for asthma.

Our lead cancer immunotherapy candidate is SD-101, a C Class CpG TLR9 agonist that was selected for characteristics optimal for treatment of cancer, including high interferon induction. Directly injecting SD-101 into a tumor site optimizes its effect by ensuring proximity to tumor-specific antigens. In animal models, SD-101 demonstrated significant anti-tumor effects at both the injected site and at distant sites. We are conducting a clinical program intended to assess potential efficacy of SD-101 in a range of tumors and in combination with a range of treatments, including checkpoint inhibitors and other therapies.

HEPLISAV-B™ is our investigational adult hepatitis B vaccine. In March 2016, we resubmitted our application to market HEPLISAV-B to the FDA and in November 2016 the FDA issued a Complete Response Letter requesting information regarding several topics, including clarification of specific adverse events of special interest (AESIs), a numerical imbalance in a small number of cardiac events in a single study, new analyses of the integrated safety data base across different time periods, and post-marketing commitments. We resubmitted the application in February 2017 and the FDA has established August 10, 2017 as the Prescription Drug User Fee Act action date.

In order to maintain the ability to pursue HEPLISAV-B through the review period, in January 2017 we enacted a restructuring plan to suspend manufacturing activities, commercial preparations and other longer term investment related to HEPLISAV-B. In addition, we reduced our global workforce by 38 percent and expect to incur restructuring costs related to one-time employee termination benefits, currently estimated to be $3.0 million, which will be primarily paid in cash in the first quarter of 2017. If HEPLISAV-B is approved, we plan to use existing stockpiled inventory to support initial commercial demand.

AZD1419 is being developed by AstraZeneca AB ("AstraZeneca") for the treatment of asthma pursuant to a collaboration and license agreement. AstraZeneca initiated a Phase 2a trial in 2016.

Our revenues consist of amounts earned from collaborations, grants and fees from services and licenses. Product revenue will depend on our ability to receive regulatory approvals for, and successfully market, our drug candidates. We have yet to generate any revenues from product sales and have recorded an accumulated deficit of $812.2 million as of December 31, 2016. These losses have resulted principally from costs incurred in connection with research and development activities, compensation and other related personnel costs and general corporate expenses. Research and development activities include costs of outside contracted services including clinical trial costs, manufacturing and process development costs, research costs and other consulting services. Salaries and other personnel-related costs include non-cash stock-based compensation associated with options and other equity awards granted to employees. General corporate expenses include outside services such as accounting, consulting, business development, commercial, investor relations, insurance services and legal costs. Our operating results may fluctuate substantially from period to period principally as a result of the timing of preclinical activities and other activities related to clinical trials for our drug candidates.

Since our inception, we have relied primarily on the proceeds from public and private sales of our equity securities, government grants and revenues from collaboration agreements to fund our operations. We expect to continue to spend substantial funds in connection with the development and manufacturing of our product candidates, particularly SD-101, our lead investigational cancer immunotherapeutic product candidate, human clinical trials for our other product candidates and additional applications and advancement of our technology. In order to continue our development activities and if HEPLISAV-B is approved, we will need additional funding or a partnership to enable commercialization. This may occur through strategic alliance and licensing arrangements and/or future public or private debt and equity financings. If adequate funds are not available in the future, we may need to delay, reduce the scope of or put on hold one or more development programs while we seek strategic alternatives.

Critical Accounting Policies and the Use of Estimates

The accompanying discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements and the related disclosures, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of these financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the balance sheet dates and the reported amounts of revenues and expenses for the periods presented. On an ongoing basis, we evaluate our estimates, assumptions and judgments described below that have the greatest potential impact on our consolidated financial statements, including those related to revenue recognition, research and development activities and stock-based compensation. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Accounting assumptions and estimates are inherently uncertain and actual results may differ materially from these estimates under different assumptions or conditions.

While our significant accounting policies are more fully described in Note 2 to the Consolidated Financial Statements, we believe the following critical accounting policies reflect the more significant judgments and estimates used in the preparation of our financial statements.

Revenue Recognition

Our revenues consist of amounts earned from collaborations, grants and fees from services and licenses. We enter into license and manufacturing agreements and collaborative research and development arrangements with pharmaceutical and biotechnology partners that may involve multiple deliverables. Our arrangements may include one or more of the following elements: upfront license payments, cost reimbursement for the performance of research and development activities, milestone payments, other contingent payments, contract manufacturing service fees, royalties and license fees. Each deliverable in the arrangement is evaluated to determine whether it meets the criteria to be accounted for as a separate unit of accounting or whether it should be combined with other deliverables. In order to account for the multiple-element arrangements, the Company identifies the deliverables included within the arrangement and evaluates which deliverables represent separate units of accounting. Analyzing the arrangement to identify deliverables requires the use of judgment, and each deliverable may be an obligation to deliver services, a right or license to use an asset, or another performance obligation. We recognize revenue when there is persuasive evidence that an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable and collectability is reasonably assured.

Non-refundable upfront fees received for license and collaborative agreements and other payments under collaboration agreements where we have continuing performance obligations related to the payments are deferred and recognized over our estimated performance period. Revenue is recognized on a ratable basis, unless we determine that another method is more appropriate, through the date at which our performance obligations are completed. Management makes its best estimate of the period over which we expect to fulfill our performance obligations, which may include clinical development activities. Given the uncertainties of research and development collaborations, significant judgment is required to determine the duration of the performance period. We recognize revenues for costs that are reimbursed under collaborative agreements as the related research and development costs are incurred.

Contingent consideration received for the achievement of a substantive milestone is recognized in its entirety in the period in which the milestone is achieved. A milestone is defined as an event having all of the following characteristics: (i) there is substantive uncertainty at the date the arrangement is entered into that the event will be achieved, (ii) the event can only be achieved based in whole or in part on either the entity’s performance or a specific outcome resulting from the entity’s performance and (iii) if achieved, the event would result in additional payments being due to the entity.

Our license and collaboration agreements with our partners provide for payments to be paid to us upon the achievement of milestones. Given the challenges inherent in developing biologic products, there is substantial uncertainty whether any such milestones will be achieved at the time we entered into these agreements. In addition, we evaluate whether milestones meet the criteria to be considered substantive. The conditions include: (i) work is contingent on either of the following: (a) the vendor’s performance to achieve the milestone or (b) the enhancement of the value of the deliverable item or items as a result of a specific outcome resulting from the vendor’s performance to achieve the milestone; (ii) it relates solely to past performance and (iii) it is reasonable relative to all the deliverable and payment terms within the arrangement. As a result of our analysis, we may consider our development milestones to be substantive. Milestone payments that are contingent upon the achievement of substantive at-risk performance criteria are recognized in full upon achievement of those milestone events in accordance with the terms of the agreement. All revenue recognized to date under our collaborative agreements has been nonrefundable.

Research and Development Expenses and Accruals

Research and development expenses include personnel and facility-related expenses, outside contracted services including clinical trial costs, manufacturing and process development costs, research costs and other consulting services and non-cash stock-based compensation. Research and development costs are expensed as incurred. Amounts due under contracts with third parties may be either fixed fee or fee for service, and may include upfront payments, monthly payments and payments upon the completion of milestones or receipt of deliverables. Non-refundable advance payments under agreements are capitalized and expensed as the related goods are delivered or services are performed.

Our accrual for clinical trials is based on estimates of the services received and efforts expended pursuant to contracts with clinical trial centers and clinical research organizations. We may terminate these contracts upon written notice and we are generally only liable for actual effort expended by the organizations to the date of termination, although in certain instances we may be further responsible for termination fees and penalties. The Company estimates its research and development expenses and the related accrual as of each balance sheet date based on the facts and circumstances known to the Company at that time.

Stock-Based Compensation

Stock-based compensation expense for restricted stock units and stock options is estimated at the grant date based on the award's estimated fair value-based measurement and is recognized on a straight-line basis over the award's requisite service period, assuming estimated forfeiture rates. Fair value of restricted stock units is determined at the date of grant using our closing stock price. Our determination of the fair value-based measurement of stock options on the date of grant using an option-pricing model is affected by our stock price, as well as assumptions regarding a number of subjective variables. We selected the Black-Scholes option pricing model as the most appropriate method for determining the estimated fair value-based measurement of our stock options. The Black-Scholes model requires the use of highly subjective assumptions which determine the fair value-based measurement of stock options. These assumptions include, but are not limited to, our expected stock price volatility over the term of the awards, and projected employee stock option exercise behaviors. In the future, as additional empirical evidence regarding these input estimates becomes available, we may change or refine our approach of deriving these input estimates. These changes could impact our fair value-based measurement of stock options granted in the future. Changes in the fair value-based measurement of stock awards could materially impact our operating results.

Our current estimate of volatility is based on the historical volatility of our stock price. To the extent volatility in our stock price increases in the future, our estimates of the fair value of options granted in the future could increase, thereby increasing stock-based compensation cost recognized in future periods. We derive the expected term assumption primarily based on our historical settlement experience, while giving consideration to options that have not yet completed a full life cycle. Stock-based compensation cost is recognized only for awards ultimately expected to vest. Our estimate of the forfeiture rate is based primarily on our historical experience. To the extent we revise this estimate in the future, our share-based compensation cost could be materially impacted in the period of revision.

Recent Accounting Pronouncements

Accounting Standards Update ("ASU") 2014-09

In May 2014, the Financial Accounting Standards Board ("FASB") issued guidance codified in ASC 606, Revenue Recognition — Revenue from Contracts with Customers, which amends the guidance in former ASC 605, Revenue Recognition, which provides a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and will supersede most current revenue recognition guidance. In July 2015, the FASB deferred the effective date for annual reporting periods beginning after December 15, 2017 (including interim periods within those periods), with early application permitted. The FASB issued supplemental adoption guidance and clarification to ASU 2014-09 in March 2016, April 2016 and May 2016 within ASU 2016-08 "Revenue From Contracts With Customers: Principal vs. Agent Considerations," ASU 2016-10 "Revenue From Contracts with Customers: Identifying Performance Obligations and Licensing," and ASU 2016-12 "Revenue from Contracts with Customers: Narrow-Scope Improvements and Practical Expedients," respectively. We are currently evaluating the impact (if any) this guidance will have on our consolidated financial statements. We anticipate adoption of ASC 606 using the modified retrospective method with a cumulative catch-up adjustment to the opening balance sheet of retained earnings at the effective date, during the first quarter of 2018. The Company will continue to review variable consideration, potential disclosures, and the method of adoption in order to complete the evaluation of the impact on the consolidated financial statements. In addition, the Company will continue to monitor additional changes, modifications, clarifications or interpretations undertaken by the FASB, which may impact the current conclusions.

Results of Operations

Revenues

Revenues consist of amounts earned from collaborations, grants and services and license fees. Service and license fees include revenues related to research and development and contract manufacturing services, license fees and royalty payments.

The following is a summary of our revenues (in thousands, except for percentages):

	Year Ended December 31,			Increase (Decrease) from 2015 to 2016		Increase (Decrease) from 2014 to 2015	
Revenues:	**2016**	**2015**	**2014**	**$**	**%**	**$**	**%**
Collaboration revenue	$ 9,778	$ 2,765	$ 7,933	$ 7,013	254%	$ (5,168)	(65)%
Grant revenue	381	683	2,688	(302)	(44)%	(2,005)	(75)%
Service and license revenue	884	602	411	282	47%	191	46%
Total revenues	$ 11,043	$ 4,050	$ 11,032	$ 6,993	173%	$ (6,982)	(63)%

2016 versus 2015

Collaboration revenue increased due to recognition of $7.2 million under the research collaboration and license agreement with AstraZeneca for the initiation of a Phase 2a trial by AstraZeneca in 2016. Grant revenue decreased due to expiration of various contracts with the National Institute of Health in 2015. Service and license revenue increased due to revenue received from manufacturing services performed on behalf of a third party.

2015 versus 2014

Collaboration revenue decreased due to winding down of work performed for the Phase 1 clinical trial for AZD1419, extension of the estimated performance period for the $5.4 million payment received from AstraZeneca in March 2014, and expiration of our collaboration agreement with GSK in 2014. Grant revenue decreased due to expiration of our National Institute of Health's National Institute of Allergy and Infectious Diseases ("NIAID") contracts for adjuvant development in 2014. The overall decrease was partially offset by an increase of service and license revenue due to revenue received from manufacturing services performed on behalf of a third party.

We expect our collaboration revenue from existing collaboration agreements to decrease in 2017 as compared to 2016, as milestones under our existing agreements, related mainly to development and regulatory objectives, are anticipated to occur subsequent to 2017.

Research and Development

Research and development expense consists primarily of compensation and related personnel costs (which include benefits, recruitment, travel and supply costs), outside services, allocated facility costs and non-cash stock-based compensation. Outside services relate to our preclinical experiments and clinical trials, regulatory filings and manufacturing of our product candidates. For the years ended December 31, 2016, 2015 and 2014, approximately 67%, 80% and 80%, respectively, of our total research and development expense, excluding non-cash stock-based compensation, is related to our investigational adult hepatitis B vaccine, HEPLISAV-B. The following is a summary of our research and development expense (in thousands, except for percentages):

	Year Ended December 31,			Increase (Decrease) from 2015 to 2016		Increase (Decrease) from 2014 to 2015	
Research and Development:	**2016**	**2015**	**2014**	**$**	**%**	**$**	**%**
Compensation and related personnel costs	$ 34,333	$ 30,183	$ 24,352	$ 4,150	14%	$ 5,831	24%
Outside services	32,540	45,495	50,923	(12,955)	(28)%	(5,428)	(11)%
Facility costs	10,878	7,142	6,437	3,736	52%	705	11%
Non-cash stock-based compensation	6,742	4,123	2,868	2,619	64%	1,255	44%
Total research and development	$ 84,493	$ 86,943	$ 84,580	$ (2,450)	(3)%	$ 2,363	3%

2016 versus 2015

Compensation and related personnel costs and non-cash stock-based compensation increased due to an overall increase in employee headcount in preparation for the anticipated commercialization of HEPLISAV-B and recognition of expense related to share-based awards granted to employees in 2015 and 2016. Outside services expense decreased primarily due to lower activity related to completion in October 2015 of HBV-23, a large Phase 3 study of HEPLISAV-B. The decrease in costs relating to HBV-23 was partially offset by increased costs relating to seeking regulatory approval, preparation for commercialization of HEPLISAV-B and the ongoing development of SD-101 and earlier stage oncology programs. Facility costs, which includes an overhead allocation primarily comprised of occupancy and related expenses, increased primarily due to an increased allocation of facilities expenses resulting from an increase in R&D headcount.

2015 versus 2014

Compensation and related personnel costs and non-cash stock-based compensation increased due to an overall increase in employee headcount in preparation for the anticipated commercialization of HEPLISAV-B and share-based awards granted to employees. Outside services expense decreased primarily due to lower activity related to HBV-23, which concluded in late 2015. Facility costs increased due to an overall increase in employee headcount.

General and Administrative

General and administrative expense consists primarily of compensation and related personnel costs; costs for outside services such as accounting, commercial development, consulting, business development and investor relations and for insurance; legal costs that include corporate and patent-related expenses; allocated facility costs and non-cash stock-based compensation.

The following is a summary of our general and administrative expenses (in thousands, except for percentages):

	Year Ended December 31,			Increase (Decrease) from 2015 to 2016		Increase (Decrease) from 2014 to 2015	
General and Administrative:	**2016**	**2015**	**2014**	**$**	**%**	**$**	**%**
Compensation and related personnel costs	$ 11,814	$ 8,765	$ 6,637	$ 3,049	35%	$ 2,128	32%
Outside services	14,400	5,588	4,325	8,812	158%	1,263	29%
Legal costs	2,458	1,721	2,491	737	43%	(770)	(31)%
Facility costs	1,201	912	703	289	32%	209	30%
Non-cash stock-based compensation	7,384	5,194	3,221	2,190	42%	1,973	61%
Total general and administrative	$ 37,257	$ 22,180	$ 17,377	$ 15,077	68%	$ 4,803	28%

2016 versus 2015

Compensation and related personnel costs increased due to an overall increase in employee headcount in preparation for the anticipated commercial launch of HEPLISAV-B in the United States. Outside services increased due to expenses related to sourcing of a debt financing commitment and retention of consultants for administrative and commercial development services for the anticipated commercial launch of HEPLISAV-B. Non-cash stock-based compensation increased due to increased annual stock option grants in 2016 and a full year of expense related to 2015 annual option grants recognized in 2016.

2015 versus 2014

Compensation and related personnel costs increased due to an overall increase in employee headcount in preparation for the anticipated commercial launch of HEPLISAV-B in the United States. Outside services increased due to the hiring of consultants for administrative and commercial development services. Non-cash stock-based compensation increased due to increased annual stock option grants in 2015 and a full year of expense related to 2014 annual option grants recognized in 2015. Legal costs decreased as certain ongoing litigation expenses incurred during 2015 were covered under our insurance. Facility costs increased due to an increase in rent expense as the portion of our facility in Berkeley, California, previously accounted for as a sublease, was occupied by us during 2015.

Interest Income, Interest Expense, Other (Expense) Income, Net and Loss on Extinguishment of Debt

Interest income is reported net of amortization of premiums and discounts on marketable securities and realized gains and losses on investments. Interest expense for the year ended December 31, 2015 includes interest expense related to a loan agreement entered into in December 2014. In September 2015, the debt was fully repaid. Other (expense) income, net includes gains and losses on foreign currency transactions. In addition, other (expense) income, net for the year ended December 31, 2016 includes expenses related to an unutilized note purchase agreement which was terminated in December 2016.

The following is a summary of our interest income and expense, other (expense) income, net, and loss on extinguishment of debt (in thousands, except for percentages):

	Year Ended December 31,			Increase (Decrease) from 2015 to 2016		Increase (Decrease) from 2014 to 2015	
	2016	2015	2014	$	%	$	%
Interest income	$ 755	$ 205	$ 191	$ 550	268%	$ 14	7%
Interest expense	$ -	$ (572)	$ (35)	$ (572)	(100)%	$ 537	1534%
Other (expense) income, net	$ (2,492)	$ 317	$ 433	$ (2,809)	(886)%	$ (116)	(27)%
Loss on extinguishment of debt	$ -	$ (1,671)	$ -	$ (1,671)	(100)%	$ 1,671	100%

2016 versus 2015

Interest income increased due to a marketable security balance during the year containing higher yielding securities. Interest expense decreased due to repayment in September 2015 of the loan under the Loan Agreement. Other (expense) income, net decreased due to a $1.0 million payment upon entering into and subsequent $1.5 million payment related to termination of a note purchase agreement. In addition, other (expense) income, net increased by $0.2 million due to a gain on foreign currency transactions resulting from fluctuations in the value of the Euro compared to the U.S. dollar. In September 2015, we recognized a one-time loss on extinguishment of debt of $1.7 million related to the early repayment of the outstanding balance under the terms of the loan agreement.

Other (expense) income, net includes expense of $5.0 million related to the settlement of securities litigation and the tentative settlement of derivative complaints initiated in 2013. This expense was offset by $5.0 million in other income as the settlements will be paid for by the Company's insurers. For more information about the Company's settlements, see Note 7, *Commitments and Contingencies*, in our Notes to Consolidated Financial Statements.

2015 versus 2014

Interest income for the year ended December 31, 2015, remained flat compared to the same period in 2014. Interest expense increased due to interest expense related to the Loan Agreement. Other (expense) income, net decreased due to a reduced gain on foreign currency transactions resulting from fluctuations in the value of the Euro compared to the U.S. dollar and withholding taxes paid in Europe as compared to the prior year. During the year ended December 31, 2015, we recognized a one-time loss on extinguishment of debt of $1.7 million related to the early repayment of the outstanding balance under the terms of the loan agreement.

Liquidity and Capital Resources

As of December 31, 2016, we had $81.4 million in cash, cash equivalents and marketable securities. Since our inception, we have relied primarily on the proceeds from public and private sales of our equity securities, government grants and revenues from collaboration agreements to fund our operations. Our funds are currently invested in short-term money market funds, U.S. Treasuries, U.S. Government agency securities and corporate debt securities.

On November 12, 2015, we entered into an At Market Issuance Sales Agreement ("2015 ATM Agreement") with Cowen and Company, LLC ("Cowen") under which we may offer and sell our common stock having aggregate sales proceeds of up to $90 million from time to time through Cowen as our sales agent. We initiated sales under the 2015 ATM Agreement during the first quarter of 2017 and we have received cash of $23.3 million resulting from sales of 5,650,322 shares of common stock, as of March 9, 2017.

2016 versus 2015

During the year ended December 31, 2016, we used $107.1 million of cash for our operations primarily due to our net loss of $112.4 million, of which $18.1 million consisted of non-cash charges such as stock-based compensation, depreciation and amortization, write-off of assets in progress and accretion and amortization on marketable securities. By comparison, during the year ended December 31, 2015, we used $92.6 million of cash for our operations primarily due to a net loss of $106.8 million, of which $13.3 million consisted of non-cash charges such as stock-based compensation, depreciation and amortization, loss on extinguishment of debt and accretion and amortization on marketable securities. Cash used in our operations during 2016 increased by $14.5 million. Net cash used in operating activities is impacted by changes in our operating assets and liabilities due to timing of cash receipts and expenditures.

During the year ended December 31, 2016, cash provided by investing activities was $86.2 million compared to $85.8 million of cash used in investing activities for the year ended December 31, 2015. Cash provided by investing activities during the year ended December 31, 2016 included $94.0 million of net proceeds from maturities of marketable securities compared with $78.8 million of net purchases of marketable securities during the same period in 2015. Net cash used in the purchases of equipment increased by $0.8 million from 2015 to 2016 primarily due to upgrades made to our manufacturing facility. In December 2016, we terminated planning for a manufacturing facility, and incurred a one-time write-off of an amount equal to the carrying amount of the asset of approximately $0.9 million.

During the year ended December 31, 2016 and 2015, cash provided by financing activities was $0.5 million and $174.0 million, respectively. During the year ended December 31, 2015, we received $134.9 million in net proceeds from a public offering of common stock and $49.0 million in net proceeds from issuance of common stock under our 2014 At Market Issuance Sales Agreement (“2014 ATM Agreement”) with Cowen and Company, LLC., which terminated in July 2015. These proceeds were partially offset by an $11.0 million repayment of the loan in September 2015. We received proceeds of $0.5 million and $1.1 million from exercises of options and warrants as well as employee purchases of our common stock under the 2014 Employee Stock Purchase Plan during the year ended December 31, 2016 and 2015, respectively.

2015 versus 2014

During the year ended December 31, 2015, we used $92.6 million of cash for our operations primarily due to our net loss of $106.8 million, of which $13.3 million consisted of non-cash charges such as stock-based compensation, depreciation and amortization, cash-settled stock based compensation, accretion and amortization on marketable securities and loss on extinguishment of debt. By comparison, during the year ended December 31, 2014, we used $73.7 million of cash for our operations primarily due to a net loss of $90.7 million, of which $8.7 million consisted of non-cash charges such as stock-based compensation, depreciation and amortization and accretion and amortization on marketable securities. Cash used in our operations during 2015 increased by $18.8 million. Net cash used in operating activities is impacted by changes in our operating assets and liabilities due to timing of cash receipts and expenditures.

During the year ended December 31, 2015, cash used in investing activities was $85.8 million compared to $90.6 million of cash provided by investing activities for the year ended December 31, 2014. Cash used in investing activities during the year ended December 31, 2015 included $78.8 million of net purchases of marketable securities compared with $92.3 million of net proceeds from maturities of marketable securities during the same period in 2014. Net cash used in the purchases of equipment increased by $5.3 million compared to the prior year and totaled $7.0 million and $1.7 million in 2015 and 2014, respectively. The increase is due primarily to the purchase of manufacturing equipment for our product candidate, HEPLISAV-B.

During the year ended December 31, 2015 and 2014, cash provided by financing activities was $174.0 million and $9.9 million, respectively. During the year ended December 31, 2015, we received $134.9 million in net proceeds from a public offering of common stock and $49.0 million in net proceeds from issuance of common stock under our 2014 ATM Agreement. In 2014 we received proceeds of $9.6 million under a loan agreement and $0.3 million from exercises of options and warrants as well as employee purchases of our common stock under the 2014 Employee Stock Purchase Plan.

We have incurred significant operating losses and negative cash flows from operations since our inception. As of December 31, 2016, we had cash, cash equivalents and marketable securities of $81.4 million and cash used in operating activities of $107.1 million. We adopted FASB issued ASU No. 2014-15, Presentation of Financial Statements — Going Concern (Subtopic 205-40) effective December 31, 2016. We have evaluated and concluded there are no conditions or events, considered in the aggregate, that raise substantial doubt about our ability to continue as a going concern for a period of one year following the date that these financial statements are issued. We expect to continue to spend substantial funds in connection with the development and manufacturing of our product candidates, particularly SD-101, our lead investigational cancer immunotherapeutic product candidate, human clinical trials for our other product candidates and additional applications and advancement of our technology. In order to continue our development activities and if HEPLISAV-B is approved, we will need additional funding or a partnership to enable commercialization. This may occur through strategic alliance and licensing arrangements and/or future public or private debt and equity financings. Sufficient funding may not be available, or if available, may be on terms that significantly dilute or otherwise adversely affect the rights of existing stockholders. If adequate funds are not available in the future, we may need to delay, reduce the scope of or put on hold one or more development programs while we seek strategic alternatives, which could have an adverse impact on our ability to achieve our intended business objectives.

The Company's ability to raise additional capital in the equity and debt markets, should the Company choose to do so, is dependent on a number of factors, including, but not limited to, the market demand for the Company's common stock, which itself is subject to a number of development and business risks and uncertainties, as well as the uncertainty that the Company would be able to raise such additional capital at a price or on terms that are favorable to the Company.

Contractual Obligations

The following summarizes our significant contractual obligations at December 31, 2016 and the effect those obligations are expected to have on our liquidity and cash flows in future periods (in thousands):

Contractual Obligations:	Total	2017	2018-2019	2020-2021	2022 and Thereafter
Operating leases	$ 6,409	$ 2,560	$ 2,129	$ 1,159	$ 561
Total	$ 6,409	$ 2,560	$ 2,129	$ 1,159	$ 561

We lease our facilities in Berkeley, California (the "Berkeley Lease"), and Düsseldorf, Germany (the "Düsseldorf Lease") under operating leases that expire in June 2018 and March 2023, respectively.

During 2004, we established a letter of credit with Silicon Valley Bank as security for the Berkeley Lease in the amount of $0.4 million. The letter of credit remained outstanding as of December 31, 2016 and is collateralized by a certificate of deposit for $0.4 million which has been included in restricted cash in the consolidated balance sheets as of December 31, 2016 and 2015. Under the terms of the Berkeley Lease, if the total amount of our cash, cash equivalents and marketable securities falls below $20 million for a period of more than 30 consecutive days during the lease term, the amount of the required security deposit will increase to $1.1 million until such time as our projected cash and cash equivalents will exceed $20 million for the remainder of the lease term, or until our actual cash and cash equivalents remains above $20 million for a period of 12 consecutive months.

During 2004, we also established a letter of credit with Deutsche Bank as security for our Düsseldorf Lease in the amount of 0.2 million Euros. The letter of credit remained outstanding through December 31, 2016 and is collateralized by a certificate of deposit for 0.2 million Euros which has been included in restricted cash in the consolidated balance sheets as of December 31, 2016 and 2015.

In addition to the non-cancelable commitments included above, we have entered into contractual arrangements that obligate us to make payments to the contractual counterparties upon the occurrence of future events. In addition, in the normal course of operations, we have entered into license and other agreements and intend to continue to seek additional rights relating to compounds or technologies in connection with our discovery, manufacturing and development programs. Under the terms of the agreements, we may be required to pay future up-front fees, milestones and royalties on net sales of products originating from the licensed technologies, if any, or other payments contingent upon the occurrence of future events that cannot reasonably be estimated.

We rely on and have entered into agreements with research institutions, contract research organizations and clinical investigators as well as clinical and commercial material manufacturers. These agreements are terminable by us upon written notice. Generally, we are liable only for actual effort expended by the organizations at any point in time during the contract through the notice period.

Off-balance Sheet Arrangements

We do not have any off-balance sheet arrangements as defined by rules enacted by the SEC and accordingly, no such arrangements are likely to have a current or future effect on our financial position.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Quantitative and Qualitative Disclosure about Market Risk

Interest Rate Risk

We are subject to interest rate risk. Our investment portfolio is maintained in accordance with our investment policy, which defines allowable investments, specifies credit quality standards and limits the credit exposure of any single issuer. The primary objective of our investment activities is to preserve principal and, secondarily, to maximize income we receive from our investments without significantly increasing risk. Some of the securities that we invest in may have market risk. This means that a change in prevailing interest rates may cause the principal amount of the investment to fluctuate. To minimize this risk, we maintain our portfolio of cash equivalents and investments in short-term money market funds, U.S. government agency securities, U.S. Treasuries and corporate debt securities. We do not invest in auction rate securities or securities collateralized by home mortgages, mortgage bank debt or home equity loans. We do not have derivative financial instruments in our investment portfolio. To assess our risk, we calculate that if interest rates were to rise or fall from current levels by 100 basis points or by 125 basis points, the pro forma change in fair value of our net unrealized loss on investments would be $0.4 million or $0.5 million, respectively.

Due to the short duration and nature of our cash equivalents and marketable securities, as well as our intention to hold the investments to maturity, we do not expect any material loss with respect to our investment portfolio.

Foreign Currency Risk

We have certain investments outside the U.S. for the operations of Dynavax GmbH with exposure to foreign exchange rate fluctuations. The cumulative translation adjustment reported in the consolidated balance sheet as of December 31, 2016 was $3.6 million primarily related to translation of Dynavax GmbH assets, liabilities and operating results from Euros to U.S. dollars. As of December 31, 2016, the effect of our exposure to these exchange rate fluctuations has not been material, and we do not expect it to become material in the foreseeable future. We do not hedge our foreign currency exposures and have not used derivative financial instruments for speculation or trading purposes.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

	Page No.
Report of Independent Registered Public Accounting Firm	39
Consolidated Financial Statements:	
Consolidated Balance Sheets	40
Consolidated Statements of Operations	41
Consolidated Statements of Comprehensive Loss	41
Consolidated Statements of Stockholders' Equity	42
Consolidated Statements of Cash Flows	43
Notes to Consolidated Financial Statements	44

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Dynavax Technologies Corporation

We have audited the accompanying consolidated balance sheets of Dynavax Technologies Corporation as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2016. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Dynavax Technologies Corporation at December 31, 2016 and 2015, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Dynavax Technologies Corporation's internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) and our report dated March 13, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Redwood City, California
March 13, 2017

DYNAVAX TECHNOLOGIES CORPORATION

CONSOLIDATED BALANCE SHEETS

(In thousands, except per share amounts)

	December 31,	
	2016	**2015**
Assets		
Current assets:		
Cash and cash equivalents	$ 24,289	$ 44,812
Marketable securities available-for-sale	57,126	151,313
Accounts and other receivables	1,342	1,394
Prepaid expenses and other current assets	6,842	2,427
Total current assets	89,599	199,946
Property and equipment, net	17,174	13,804
Goodwill	1,971	2,043
Restricted cash	602	609
Other assets	334	231
Total assets	$ 109,680	$ 216,633
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 3,796	$ 3,433
Accrued research and development	5,048	7,361
Accrued liabilities	11,192	15,337
Deferred revenues	-	2,654
Total current liabilities	20,036	28,785
Other long-term liabilities	443	769
Total liabilities	20,479	29,554
Commitments and contingencies (Note 7)		
Stockholders' equity:		
Preferred stock: $0.001 par value; 5,000 shares authorized at December 31, 2016 and December 31, 2015; no shares issued and outstanding at December 31, 2016 and December 31, 2015	-	-
Common stock: $0.001 par value; 69,500 shares authorized at December 31, 2016 and 2015; 38,599 and 38,446 shares issued and outstanding at December 31, 2016 and 2015, respectively	39	38
Additional paid-in capital	904,957	889,698
Accumulated other comprehensive loss	(3,624)	(2,930)
Accumulated deficit	(812,171)	(699,727)
Total stockholders' equity	89,201	187,079
Total liabilities and stockholders' equity	$ 109,680	$ 216,633

See accompanying notes.

DYNAVAX TECHNOLOGIES CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share amounts)

	Year Ended December 31,		
	2016	**2015**	**2014**
Revenues:			
Collaboration revenue	$ 9,778	$ 2,765	$ 7,933
Grant revenue	381	683	2,688
Service and license revenue	884	602	411
Total revenues	11,043	4,050	11,032
Operating expenses:			
Research and development	84,493	86,943	84,580
General and administrative	37,257	22,180	17,377
Unoccupied facility expense	-	-	386
Total operating expenses	121,750	109,123	102,343
Loss from operations	(110,707)	(105,073)	(91,311)
Other (expense) income:			
Interest income	755	205	191
Interest expense	-	(572)	(35)
Other (expense) income, net	(2,492)	317	433
Loss on extinguishment of debt	-	(1,671)	-
Net loss	$ (112,444)	$ (106,794)	$ (90,722)
Basic and diluted net loss per share	$ (2.92)	$ (3.25)	$ (3.45)
Weighted average shares used to compute basic and diluted net loss per share	38,506	32,881	26,289

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

(In thousands)

	Year Ended December 31,		
	2016	**2015**	**2014**
Net loss	$ (112,444)	$ (106,794)	$ (90,722)
Other comprehensive (loss) income:			
Unrealized (loss) gain on marketable securities available-for-sale	(8)	11	32
Cumulative foreign currency translation adjustments	(686)	(1,272)	(1,553)
Total other comprehensive loss	(694)	(1,261)	(1,521)
Total comprehensive loss	$ (113,138)	$ (108,055)	$ (92,243)

See accompanying notes.

DYNAVAX TECHNOLOGIES CORPORATION

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands)

	Common Stock		Preferred Stock					
	Shares	Par Amount	Shares	Par Amount	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total Stockholders' Equity
Balances at December 31, 2013	26,280	$ 263	43	$ -	$ 688,390	$ (148)	$ (502,211)	$ 186,294
Issuance of common stock upon exercise of stock options and restricted stock awards	5	-	-	-	49	-	-	49
Reverse stock split	-	(237)	-	-	237	-	-	-
Issuance of common stock under Employee Stock Purchase Plan	11	-	-	-	130	-	-	130
Warrants exercised	11	-	-	-	163	-	-	163
Stock compensation expense	-	-	-	-	6,089	-	-	6,089
Total other comprehensive loss	-	-	-	-	-	(1,521)	-	(1,521)
Net loss	-	-	-	-	-	-	(90,722)	(90,722)
Balances at December 31, 2014	26,307	$ 26	43	$ -	$ 695,058	$ (1,669)	$ (592,933)	$ 100,482
Conversion of Preferred Stock	4,343	5	(43)	-	(3)	-	-	2
Issuance of common stock upon exercise of stock options and restricted stock awards	37	-	-	-	531	-	-	531
Issuance of common stock under Employee Stock Purchase Plan	23	-	-	-	291	-	-	291
Issuance of common stock, net of issuance costs	7,353	7	-	-	183,890	-	-	183,897
Warrants exercised	383	-	-	-	228	-	-	228
Stock compensation expense	-	-	-	-	9,703	-	-	9,703
Total other comprehensive loss	-	-	-	-	-	(1,261)	-	(1,261)
Net loss	-	-	-	-	-	-	(106,794)	(106,794)
Balances at December 31, 2015	38,446	$ 38	-	$ -	$ 889,698	$ (2,930)	$ (699,727)	$ 187,079
Issuance (withholding) of common stock upon exercise of stock options and restricted stock awards, net	107	1	-	-	(84)	-	-	(83)
Issuance of common stock under Employee Stock Purchase Plan	46	-	-	-	615	-	-	615
Stock compensation expense	-	-	-	-	14,728	-	-	14,728
Total other comprehensive loss	-	-	-	-	-	(694)	-	(694)
Net loss	-	-	-	-	-	-	(112,444)	(112,444)
Balances at December 31, 2016	38,599	$ 39	-	$ -	$ 904,957	$ (3,624)	$ (812,171)	$ 89,201

See accompanying notes.

DYNAVAX TECHNOLOGIES CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Year Ended December 31,		
	2016	**2015**	**2014**
Operating activities			
Net loss	$ (112,444)	$ (106,794)	$ (90,722)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	2,257	1,365	1,404
Write-off of assets in progress	862	-	-
Loss (gain) on disposal of property and equipment	91	46	(24)
Accretion of discounts and amortization of premiums on marketable securities	178	660	881
Unoccupied facility expense	-	-	386
Accretion of debt discount related to debt financing	-	(115)	-
Cash-settled portion of stock compensation expense	602	387	-
Stock compensation expense	14,126	9,316	6,089
Loss on extinguishment of debt	-	1,671	-
Changes in operating assets and liabilities:			
Accounts and other receivables	52	(667)	900
Prepaid expenses and other current assets	560	1,631	(2,683)
Restricted cash and other assets	(103)	(211)	277
Accounts payable	1,181	1,246	(523)
Accrued liabilities and other long term liabilities	(11,759)	9,017	4,810
Deferred revenues	(2,654)	(10,111)	5,467
Net cash used in operating activities	(107,051)	(92,559)	(73,738)
Investing activities			
Purchases of marketable securities	(126,754)	(208,936)	(44,807)
Proceeds from maturities of marketable securities	220,760	130,110	137,071
Purchases of property and equipment, net	(7,757)	(6,970)	(1,667)
Net cash provided by (used in) investing activities	86,249	(85,796)	90,597
Financing activities			
Proceeds from issuances of common stock, net	-	183,897	-
Payment of debt	-	(10,988)	-
(Withholding) proceeds from exercise of stock options and restricted stock awards, net	(84)	531	49
Proceeds from Employee Stock Purchase Plan	615	291	130
Proceeds from exercise of warrants	-	228	163
Proceeds from long-term debt, net	-	-	9,559
Net cash provided by financing activities	531	173,959	9,901
Effect of exchange rate changes on cash and cash equivalents	(252)	(303)	(371)
Net (decrease) increase in cash and cash equivalents	(20,523)	(4,699)	26,389
Cash and cash equivalents at beginning of year	44,812	49,511	23,122
Cash and cash equivalents at end of year	$ 24,289	$ 44,812	$ 49,511
Supplemental disclosure of cash flow information			
Cash paid during the year for interest	$ -	$ 720	$ -
Accrual for litigation settlement and insurance recovery	$ 4,975	$ -	$ -
Return of unused development funding to AstraZeneca AB “AstraZeneca” (Note 9)	$ 7,200	$ -	$ -
Milestone payment from AstraZeneca (Note 9)	$ 7,200	$ -	$ -
Non-cash investing and financing activities:			
Disposal of fully depreciated property and equipment	$ 2,354	$ 1,436	$ 841
Net change in unrealized (loss) gain on marketable securities	$ (8)	$ 11	$ 32

See accompanying notes.

1. Organization

Dynavax Technologies Corporation ("we," "our," "us," "Dynavax" or the "Company"), is a clinical-stage immunotherapy company focused on leveraging the power of the body's innate and adaptive immune response through toll-like receptor ("TLR") stimulation. Our current product candidates are being investigated for use in multiple cancer indications, as a vaccine for the prevention of hepatitis B and as a disease modifying therapy for asthma. We were incorporated in California in August 1996 under the name Double Helix Corporation, and we changed our name to Dynavax Technologies Corporation in September 1996. We reincorporated in Delaware in 2000.

Subsidiaries

In April 2006, we completed the acquisition of Dynavax GmbH, a wholly-owned subsidiary in Düsseldorf, Germany.

2. Summary of Significant Accounting Policies

Basis of Presentation and Principles of Consolidation

The consolidated financial statements are prepared in accordance with U.S. generally accepted accounting principles ("GAAP") and include our accounts and those of our wholly-owned subsidiary. All significant intercompany accounts and transactions among the entities have been eliminated from the consolidated financial statements. We operate in one business segment: the discovery and development of biopharmaceutical products.

Liquidity and Financial Condition

We have incurred significant operating losses and negative cash flows from operations since our inception. As of December 31, 2016, we had cash, cash equivalents and marketable securities of $81.4 million and cash used in operating activities of $107.1 million. We adopted FASB issued ASU No. 2014-15, Presentation of Financial Statements — Going Concern (Subtopic 205-40) effective December 31, 2016. We have evaluated and concluded there are no conditions or events, considered in the aggregate, that raise substantial doubt about our ability to continue as a going concern for a period of one year following the date that these financial statements are issued.

We expect to continue to spend substantial funds in connection with the development and manufacturing of our product candidates, particularly SD-101, our lead investigational cancer immunotherapeutic product candidate, human clinical trials for our other product candidates and additional applications and advancement of our technology. In order to continue our development activities and if HEPLISAV-B™ is approved, we will need additional funding or a partnership to enable commercialization. This may occur through strategic alliance and licensing arrangements and/or future public or private debt and equity financings. Sufficient funding may not be available, or if available, may be on terms that significantly dilute or otherwise adversely affect the rights of existing stockholders. If adequate funds are not available in the future, we may need to delay, reduce the scope of or put on hold one or more development programs while we seek strategic alternatives, which could have an adverse impact on our ability to achieve our intended business objectives.

The Company's ability to raise additional capital in the equity and debt markets is dependent on a number of factors, including, but not limited to, the market demand for the Company's common stock, which itself is subject to a number of development and business risks and uncertainties, as well as the uncertainty that the Company would be able to raise such additional capital at a price or on terms that are favorable to the Company.

Use of Estimates

The preparation of financial statements in conformity with GAAP requires management to make informed estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Management's estimates are based on historical information available as of the date of the consolidated financial statements and various other assumptions we believe are reasonable under the circumstances. Actual results could differ materially from these estimates.

Foreign Currency Translation

We consider the local currency to be the functional currency for our international subsidiary, Dynavax GmbH. Accordingly, assets and liabilities denominated in this foreign currency are translated into U.S. dollars using the exchange rate in effect on the balance sheet date. Revenues and expenses are translated at average exchange rates prevailing throughout the year. Currency translation adjustments arising from period to period are charged or credited to accumulated other comprehensive income (loss) in stockholders' equity. For the years ended December 31, 2016, 2015 and 2014, we reported an unrealized loss of $0.7 million, $1.3 million and $1.6 million, respectively. Realized gains and losses resulting from currency transactions are included in other (expense) income in the consolidated statements of operations. For the years ended December 31, 2016, 2015 and 2014, we reported a gain of $0.2 million, $0.1 million and $0.4 million, respectively, resulting from currency transactions in our consolidated statements of operations.

Cash, Cash Equivalents and Marketable Securities

We consider all liquid investments purchased with an original maturity of three months or less and that can be liquidated without prior notice or penalty to be cash equivalents. Management determines the appropriate classification of marketable securities at the time of purchase. In accordance with our investment policy, we invest in short-term money market funds, U.S. Treasuries, U.S. government agency securities and corporate debt securities. We believe these types of investments are subject to minimal credit and market risk.

We have classified our entire investment portfolio as available-for-sale and available for use in current operations and accordingly have classified all investments as short-term. Available-for-sale securities are carried at fair value based on inputs that are observable, either directly or indirectly, such as quoted market prices for similar securities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the securities, with unrealized gains and losses included in accumulated other comprehensive income (loss) in stockholders' equity. Realized gains and losses and declines in value, if any, judged to be other than temporary on available-for-sale securities are included in interest income or expense. The cost of securities sold is based on the specific identification method. Management assesses whether declines in the fair value of investment securities are other than temporary. In determining whether a decline is other than temporary, management considers the following factors:

- Whether the investment has been in a continuous realized loss position for over 12 months;
- the duration to maturity of our investments;
- our intention and ability to hold the investment to maturity and if it is not more likely than not that we will be required to sell the investment before recovery of the amortized cost bases;
- the credit rating, financial condition and near-term prospects of the issuer; and
- the type of investments made.

To date, there have been no declines in fair value that have been identified as other than temporary.

Concentration of Credit Risk and Other Risks and Uncertainties

We determine our segments based on the way we organize our business by making operating decisions and assessing performance. In fiscal years 2016, 2015 and 2014, 92%, 85% and 96% of our revenues were earned in the United States, respectively, and the remaining revenues were earned in Germany. As of December 31, 2016 and 2015, 17% and 11%, respectively, of our long-lived assets were located in the United States and the remaining long-lived assets were located in Germany.

Financial instruments that are subject to concentration of credit risk consist primarily of cash equivalents, marketable securities and accounts receivable. Our policy is to invest cash in institutional money market funds and marketable securities of the U.S. government and corporate issuers with high credit quality to limit the amount of credit exposure. We currently maintain a portfolio of cash equivalents and marketable securities in a variety of securities, including short-term money market funds, U.S. government agency securities, U.S. Treasuries and corporate debt securities. We have not experienced any losses on our cash equivalents and marketable securities.

Our products will require approval from the U.S. Food and Drug Administration ("FDA") and foreign regulatory agencies before commercial sales can commence. There can be no assurance that our products will receive any of these required approvals. The denial or delay of such approvals have had a material adverse impact on our business and may impact our business in the future.

We are subject to risks common to companies in the biopharmaceutical industry, including, but not limited to, new technological innovations, clinical development risk, establishment of appropriate commercial partnerships, protection of proprietary

technology, compliance with government and environmental regulations, uncertainty of market acceptance of products, product liability, the volatility of our stock price and the need to obtain additional financing.

Long-Lived Assets

Property and equipment are recorded at cost. Depreciation is computed using the straight-line method over the estimated useful lives of the respective assets. Additions, major renewals and improvements are capitalized and repair and maintenance costs are charged to expense as incurred. Leasehold improvements are amortized over the remaining life of the initial lease term or the estimated useful lives of the assets, whichever is shorter.

We evaluate the carrying value of long-lived assets, including intangible assets, whenever events or changes in business circumstances or our planned use of long-lived assets indicate, based on undiscounted future operating cash flows, that their carrying amounts may not be fully recoverable or that their useful lives are no longer appropriate. When an indicator of impairment exists, undiscounted future operating cash flows of long-lived assets are compared to their respective carrying value. If the carrying value is greater than the undiscounted future operating cash flows of long-lived assets, the long-lived assets are written down to their respective fair values and an impairment loss is recorded. Fair value is determined primarily using the discounted cash flows expected to be generated from the use of assets. Significant management judgment is required in the forecast of future operating results that are used in the preparation of expected cash flows. No impairments of purchased intangible assets or material impairments of tangible assets have been identified during the years presented.

Goodwill

Our goodwill balance relates to our April 2006 acquisition of Dynavax GmbH. Goodwill represents the excess purchase price over the fair value of tangible and intangible assets acquired and liabilities assumed. Goodwill is not amortized but is subject to an annual impairment test. In performing its goodwill impairment review, we assess qualitative factors to determine whether it is more likely than not that the fair value of its reporting unit is less than its carrying amount, including goodwill. The qualitative factors include, but are not limited to macroeconomic conditions, industry and market considerations, and the overall financial performance of the Company. If after assessing the totality of these qualitative factors, we determine that it is not more likely than not that the fair value of its reporting unit is less than its carrying amount, then no additional assessment is deemed necessary. Otherwise, we will proceed to perform a test for goodwill impairment. The first step involves comparing the estimated fair value of the related reporting unit against its carrying amount including goodwill. If the carrying amount exceeds the fair value, impairment is calculated and recorded as a charge in the consolidated statements of operations. We determined that we have only one operating segment and there are no components of that operating segment that are deemed to be separate reporting units such that we have one reporting unit for purposes of our goodwill impairment testing. We evaluate goodwill for impairment on an annual basis and on an interim basis if events or changes in circumstances between annual impairment tests indicate that the asset might be impaired. No impairments have been identified for the years presented.

Revenue Recognition

Our revenues consist of amounts earned from collaborations, grants and fees from services and licenses. We enter into license and manufacturing agreements and collaborative research and development arrangements with pharmaceutical and biotechnology partners that may involve multiple deliverables. Our arrangements may include one or more of the following elements: upfront license payments, cost reimbursement for the performance of research and development activities, milestone payments, other contingent payments, contract manufacturing service fees, royalties and license fees. Each deliverable in the arrangement is evaluated to determine whether it meets the criteria to be accounted for as a separate unit of accounting or whether it should be combined with other deliverables. In order to account for the multiple-element arrangements, the Company identifies the deliverables included within the arrangement and evaluates which deliverables represent separate units of accounting. Analyzing the arrangement to identify deliverables requires the use of judgment, and each deliverable may be an obligation to deliver services, a right or license to use an asset, or another performance obligation. We recognize revenue when there is persuasive evidence that an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable and collectability is reasonably assured.

Non-refundable upfront fees received for license and collaborative agreements and other payments under collaboration agreements where we have continuing performance obligations related to the payments are deferred and recognized over our estimated performance period. Revenue is recognized on a ratable basis, unless we determine that another method is more appropriate, through the date at which our performance obligations are completed. Management makes its best estimate of the period over which we expect to fulfill our performance obligations, which may include clinical development activities. Given the uncertainties of research and development collaborations, significant judgment is required to determine the duration of the performance period. We recognize revenues for costs that are reimbursed under collaborative agreements as the related research and development costs are incurred.

Contingent consideration received for the achievement of a substantive milestone is recognized in its entirety in the period in which the milestone is achieved. A milestone is defined as an event having all of the following characteristics: (i) there is substantive

uncertainty at the date the arrangement is entered into that the event will be achieved, (ii) the event can only be achieved based in whole or in part on either the entity's performance or a specific outcome resulting from the entity's performance and (iii) if achieved, the event would result in additional payments being due to the entity.

Our license and collaboration agreements with our partners provide for payments to be paid to us upon the achievement of milestones. Given the challenges inherent in developing biologic products, there is substantial uncertainty whether any such milestones will be achieved at the time we entered into these agreements. In addition, we evaluate whether milestones meet the criteria to be considered substantive. The conditions include: (i) work is contingent on either of the following: (a) the vendor's performance to achieve the milestone or (b) the enhancement of the value of the deliverable item or items as a result of a specific outcome resulting from the vendor's performance to achieve the milestone; (ii) it relates solely to past performance and (iii) it is reasonable relative to all the deliverable and payment terms within the arrangement. As a result of our analysis, we may consider our development milestones to be substantive. Milestone payments that are contingent upon the achievement of substantive at-risk performance criteria are recognized in full upon achievement of those milestone events in accordance with the terms of the agreement. All revenue recognized to date under our collaborative agreements has been nonrefundable.

Our license and collaboration agreements with certain partners also provide for contingent payments based solely upon the performance of our partner. We expect to recognize the contingent payments as revenue upon receipt, provided that all other revenue recognition criteria have been satisfied.

Revenues from manufacturing services are recognized upon meeting the criteria for substantial performance and acceptance by the customer.

Revenue from royalty payments is contingent on future sales activities by our licensees. Royalty revenue is recognized when all revenue recognition criteria have been satisfied.

Revenue from government and private agency grants is recognized as the related research expenses are incurred and to the extent that funding is approved.

Research and Development Expenses and Accruals

Research and development expenses include personnel and facility-related expenses, outside contracted services including clinical trial costs, manufacturing and process development costs, research costs and other consulting services and non-cash stock-based compensation. Research and development costs are expensed as incurred. Amounts due under contracts with third parties may be either fixed fee or fee for service, and may include upfront payments, monthly payments and payments upon the completion of milestones or receipt of deliverables. Non-refundable advance payments under agreements are capitalized and expensed as the related goods are delivered or services are performed.

We contract with third parties to perform various clinical trial activities in the on-going development of potential products. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows to our vendors. Payments under the contracts depend on factors such as the achievement of certain events, successful enrollment of patients, and completion of portions of the clinical trial or similar conditions. Our accrual for clinical trials is based on estimates of the services received and efforts expended pursuant to contracts with clinical trial centers and clinical research organizations. We may terminate these contracts upon written notice and we are generally only liable for actual effort expended by the organizations to the date of termination, although in certain instances we may be further responsible for termination fees and penalties. The Company estimates its research and development expenses and the related accrual as of each balance sheet date based on the facts and circumstances known to the Company at that time. There have been no material adjustments to the Company's prior period accrued estimates for clinical trial activities through December 31, 2016.

Stock-Based Compensation

Stock-based compensation expense for restricted stock units and stock options is estimated at the grant date based on the award's estimated fair value and is recognized on a straight-line basis over the award's requisite service period, assuming estimated forfeiture rates. Fair value of restricted stock units is determined at the date of grant using the Company's closing stock price. Our determination of the fair value of stock options on the date of grant using an option-pricing model is affected by our stock price, as well as assumptions regarding a number of subjective variables. We selected the Black-Scholes option pricing model as the most appropriate method for determining the estimated fair value-based measurement of our stock options. The Black-Scholes model requires the use of highly subjective assumptions which determine the fair value-based measurement of stock options. These assumptions include, but are not limited to, our expected stock price volatility over the term of the awards, and projected employee stock option exercise behaviors. In the future, as additional empirical evidence regarding these input estimates becomes available, we may change or refine our approach of deriving these input estimates. These changes could impact our fair value of stock options granted in the future. Changes in the fair value of stock awards could materially impact our operating results.

Our current estimate of volatility is based on the historical volatility of our stock price. To the extent volatility in our stock price increases in the future, our estimates of the fair value of options granted in the future could increase, thereby increasing stock-based compensation cost recognized in future periods. We derive the expected term assumption primarily based on our historical settlement experience, while giving consideration to options that have not yet completed a full life cycle. Stock-based compensation cost is recognized only for awards ultimately expected to vest. Our estimate of the forfeiture rate is based primarily on our historical experience. To the extent we revise this estimate in the future, our share-based compensation cost could be materially impacted in the period of revision.

Income Taxes

We account for income taxes using the asset and liability method, under which deferred tax assets and liabilities are determined based on the differences between the financial reporting and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Additionally, we assess the likelihood that deferred tax assets will be recovered as deductions from future taxable income. We have provided a full valuation allowance on our deferred tax assets at December 31, 2016 and 2015 because we believe it is more likely than not that our deferred tax assets will not be realized as of December 31, 2016, and 2015.

The Company is required to file federal and state income tax returns in the United States and Germany. The preparation of these income tax returns requires the Company to interpret the applicable tax laws and regulations in effect on such jurisdictions, which could impact the amount of tax paid by us. An amount is accrued for the estimate of additional tax liabilities, including interest and penalties, for any uncertain tax positions taken or expected to be taken in an income tax return. We update the accrual for uncertain tax positions as more definitive information becomes available.

Recent Accounting Pronouncements

Accounting Standards Update ("ASU") 2014-09

In May 2014, the Financial Accounting Standards Board ("FASB") issued guidance codified in ASC 606, Revenue Recognition, Revenue from Contracts with Customers, which amends the guidance in former ASC 605, Revenue Recognition, which provides a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and will supersede most current revenue recognition guidance. In July 2015, the FASB deferred the effective date for annual reporting periods beginning after December 15, 2017 (including interim periods within those periods), with early application permitted. The FASB issued supplemental adoption guidance and clarification to ASU 2014-09 in March 2016, April 2016 and May 2016 within ASU 2016-08 "Revenue From Contracts With Customers: Principal vs. Agent Considerations," ASU 2016-10 "Revenue From Contracts with Customers: Identifying Performance Obligations and Licensing," and ASU 2016-12 "Revenue from Contracts with Customers: Narrow-Scope Improvements and Practical Expedients," respectively. We are currently evaluating the impact (if any) this guidance will have on our consolidated financial statements. We anticipate adoption of ASC 606 using the modified retrospective method with a cumulative catch-up adjustment to the opening balance sheet of retained earnings at the effective date, during the first quarter of 2018. The Company will continue to review variable consideration, potential disclosures, and the method of adoption in order to complete the evaluation of the impact on the consolidated financial statements. In addition, the Company will continue to monitor additional changes, modifications, clarifications or interpretations undertaken by the FASB, which may impact the current conclusions.

Accounting Standards Update 2016-02

In February 2016, the FASB issued ASU No. 2016-02, Leases (Topic 842). The ASU requires management to recognize lease assets and lease liabilities by lessees for all operating leases. The ASU is effective for annual periods beginning after December 15, 2018 and interim periods therein on a modified retrospective basis, with early application permitted. We are currently evaluating the impact this guidance will have on our consolidated financial statements.

Accounting Standards Update 2016-09

In March 2016, the FASB issued ASU 2016-09, Improvements to Employee Share-Based Payment Accounting. ASU 2016-09 modifies several aspects of the accounting for share-based payment transactions, including the accounting for income taxes and classification on the statement of cash flows. The standard becomes effective beginning in the first quarter of 2017. Early adoption is permitted for any entity in any interim or annual period. Therefore, the Company has early adopted this new standard as of December 31, 2016. The adoption of this standard did not have a material impact on our consolidated financial statements as of December 31, 2016.

3. Fair Value Measurements

The Company measures fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The accounting standard describes a fair value hierarchy based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value which are the following:

- Level 1—Observable inputs, such as quoted prices in active markets for identical assets or liabilities;
- Level 2—Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities; therefore, requiring an entity to develop its own valuation techniques and assumptions.

The carrying amounts of cash equivalents, accounts and other receivables, accounts payable and accrued liabilities are considered reasonable estimates of their respective fair value because of their short-term nature.

Recurring Fair Value Measurements

The following table represents the fair value hierarchy for our financial assets (cash equivalents and marketable securities) measured at fair value on a recurring basis (in thousands):

	Level 1	Level 2	Level 3	Total
December 31, 2016				
Money market funds	$ 18,981	$ -	$ -	$ 18,981
U.S. Treasuries	-	3,499	-	3,499
U.S. government agency securities	-	30,437	-	30,437
Corporate debt securities	-	24,941	-	24,941
Total	$ 18,981	$ 58,877	$ -	$ 77,858

	Level 1	Level 2	Level 3	Total
December 31, 2015				
Money market funds	$ 21,193	$ -	$ -	$ 21,193
U.S. government agency securities	-	17,622	-	17,622
Corporate debt securities	-	152,749	-	152,749
Total	$ 21,193	$ 170,371	$ -	$ 191,564

Money market funds are highly liquid investments and are actively traded. The pricing information on these investment instruments is readily available and can be independently validated as of the measurement date. This approach results in the classification of these securities as Level 1 of the fair value hierarchy.

U.S. Treasuries, U.S. Government agency securities and corporate debt securities are measured at fair value using Level 2 inputs. We review trading activity and pricing for these investments as of each measurement date. When sufficient quoted pricing for identical securities is not available, we use market pricing and other observable market inputs for similar securities obtained from various third party data providers. These inputs represent quoted prices for similar assets in active markets or these inputs have been derived from observable market data. This approach results in the classification of these securities as Level 2 of the fair value hierarchy.

There were no transfers between Level 1 and Level 2 during the twelve months ended December 31, 2016 and 2015.

4. Cash, Cash Equivalents and Marketable Securities

Cash, cash equivalents and marketable securities consist of the following (in thousands):

	Amortized Cost	Unrealized Gains	Unrealized Losses	Estimated Fair Value
December 31, 2016				
Cash and cash equivalents:				
Cash	$ 3,557	$ -	$ -	$ 3,557
Money market funds	18,981	-	-	18,981
U.S. government agency securities	1,751	-	-	1,751
Total cash and cash equivalents	24,289	-	-	24,289
Marketable securities available-for-sale:				
U.S. Treasuries	3,499	-	-	3,499
U.S. government agency securities	28,685	3	(2)	28,686
Corporate debt securities	24,938	5	(2)	24,941
Total marketable securities available-for-sale	57,122	8	(4)	57,126
Total cash, cash equivalents and marketable securities	$ 81,411	$ 8	$ (4)	$ 81,415
December 31, 2015				
Cash and cash equivalents:				
Cash	$ 4,561	$ -	$ -	$ 4,561
Money market funds	21,193	-	-	21,193
Corporate debt securities	19,052	7	(1)	19,058
Total cash and cash equivalents	44,806	7	(1)	44,812
Marketable securities available-for-sale:				
U.S. government agency securities	17,628	-	(6)	17,622
Corporate debt securities	133,679	71	(59)	133,691
Total marketable securities available-for-sale	151,307	71	(65)	151,313
Total cash, cash equivalents and marketable securities	$ 196,113	$ 78	$ (66)	$ 196,125

The maturities of our marketable securities available-for-sale are as follows (in thousands):

	December 31, 2016	
	Amortized Cost	Estimated Fair Value
Mature in one year or less	$ 57,122	$ 57,126
Mature after one year through two years	-	-
	$ 57,122	$ 57,126

There were no realized gains or losses from the sale of marketable securities in the years ended December 31, 2016, 2015 and 2014. All of our investments are classified as short-term and available-for-sale, as we consider them available to fund current operations and may not hold our investments until maturity.

5. Property and Equipment

Property and equipment consist of the following (in thousands):

	Estimated Useful Life (In years)	December 31, 2016	December 31, 2015
Manufacturing equipment	5-14	$ 10,086	$ 6,880
Lab equipment	5-13	6,280	6,096
Computer equipment	3	4,010	2,577
Furniture and fixtures	3-13	1,566	1,362
Leasehold improvements	5-8(1)	8,942	5,768
Assets in progress		2,298	6,645
		33,182	29,328
Less accumulated depreciation and amortization		(16,008)	(15,524)
Total		$ 17,174	$ 13,804

(1) Leasehold improvements are amortized over the remaining life of the initial lease term or the estimated useful lives of the assets, whichever is shorter.

Depreciation and amortization expense on property and equipment was $2.3 million, $1.4 million and $1.4 million for the years ended December 31, 2016, 2015 and 2014, respectively.

6. Current Accrued Liabilities and Accrued Research and Development

Current accrued liabilities and accrued research and development consist of the following (in thousands):

	December 31, 2016	December 31, 2015
Payroll and related expenses	$ 3,753	$ 5,866
Legal expenses	275	202
Litigation settlements accrual (Note 7)	4,975	-
Third party research expenses	2,784	5,241
Third party development expenses	2,002	2,072
Return of unused development funding to AstraZeneca (Note 9)	-	7,345
Other accrued liabilities	2,451	1,972
Total	$ 16,240	$ 22,698

7. Commitments and Contingencies

We lease our facilities in Berkeley, California (“Berkeley Lease”) and Düsseldorf, Germany (“Düsseldorf Lease”) under operating leases that expire in June 2018 and March 2023, respectively. The Berkeley Lease provides for periods of escalating rent. The total cash payments over the life of the lease are divided by the total number of months in the lease period and the average rent is charged to expense each month during the lease period. We entered into sublease agreements under the Düsseldorf Lease for a certain portion of the leased space.

Total net rent expense related to our operating leases for the years ended December 31, 2016, 2015 and 2014, was $2.2 million, $2.0 million and $1.7 million, respectively. Deferred rent was $0.3 million and $0.5 million as of December 31, 2016 and 2015, respectively. Accrued loss on lease was $0.3 million and $0.5 million as of December 31, 2016 and 2015, respectively.

Future minimum payments under the non-cancelable portion of our operating leases at December 31, 2016, excluding payments from sublease payments, are as follows (in thousands):

Year ending December 31,	
2017	$ 2,560
2018	1,491
2019	638
2020	644
2021	515
Thereafter	561
Total	$ 6,409

During 2004, we established a letter of credit with Silicon Valley Bank as security for our Berkeley Lease in the amount of $0.4 million. The letter of credit remained outstanding as of December 31, 2016, and is collateralized by a certificate of deposit for $0.4 million, which has been included in restricted cash in the consolidated balance sheets as of December 31, 2016 and 2015. Under the terms of the Berkeley Lease, if the total amount of our cash, cash equivalents and marketable securities falls below $20 million for a period of more than 30 consecutive days during the lease term, the amount of the required security deposit will increase to $1.1 million, until such time as our projected cash and cash equivalents will exceed $20 million for the remainder of the lease term, or until our actual cash and cash equivalents remains above $20 million for a period of 12 consecutive months.

During 2004, we also established a letter of credit with Deutsche Bank as security for our Düsseldorf Lease in the amount of 0.2 million Euros. The letter of credit remained outstanding through December 31, 2016 and is collateralized by a certificate of deposit for 0.2 million Euros, which has been included in restricted cash in the consolidated balance sheets as of December 31, 2016 and 2015.

In addition to the non-cancelable commitments included above, we have entered into contractual arrangements that obligate us to make payments to the contractual counterparties upon the occurrence of future events. In addition, in the normal course of operations, we have entered into license and other agreements and intend to continue to seek additional rights relating to compounds or technologies in connection with our discovery, manufacturing and development programs. Under the terms of the agreements, we may be required to pay future up-front fees, milestones and royalties on net sales of products originating from the licensed technologies, if any, or other payments contingent upon the occurrence of future events that cannot reasonably be estimated.

We rely on and have entered into agreements with research institutions, contract research organizations and clinical investigators as well as clinical and commercial material manufacturers. These agreements are terminable by us upon written notice. Generally, we are liable only for actual effort expended by the organizations at any point in time during the contract through the notice period.

From time to time, we may be involved in claims, suits, and proceedings arising from the ordinary course of our business, including actions with respect to intellectual property claims, commercial claims, and other matters. Such claims, suits, and proceedings are inherently uncertain and their results cannot be predicted with certainty. Regardless of the outcome, such legal proceedings can have an adverse impact on us because of legal costs, diversion of management resources, and other factors. In addition, it is possible that a resolution of one or more such proceedings could result in substantial damages, fines, penalties or orders requiring a change in our business practices, which could in the future materially and adversely affect our financial position, financial statements, results of operations, or cash flows in a particular period.

On September 7, 2016, Dynavax entered into a Stipulation of Settlement to settle the case entitled In re Dynavax Technologies Securities Litigation. The settlement, which was approved by the U.S. District Court for the Northern District of California on February 6, 2017, provides for a payment of $4.1 million by Dynavax and results in a dismissal and release of all claims against all defendants, including the Company. The settlement was paid for by the Company’s insurers. The Company recorded an accrual of $4.1 million reflected in accrued liabilities in the consolidated balance sheets and does not expect any significant additional charges related to this matter. In addition, the Company records anticipated recoveries under existing insurance contracts when recovery is assured. As the settlement will be paid by our insurers, we have recorded a current asset in the amount of $4.1 million reflected in prepaid expenses and other current assets in the consolidated balance sheets.

In February 2017, we tentatively agreed to a settlement for derivative complaints filed in 2013, all of which will be paid by the Company’s insurers. The Company recorded an accrual of $0.9 million reflected in accrued liabilities in the consolidated balance sheets and does not expect any significant additional charges related to this matter. In addition, the Company recorded a current asset in the amount of $0.9 million reflected in prepaid expenses and other current assets in the consolidated balance sheets. Amounts recorded for contingencies can result from a complex series of judgments about future events and uncertainties and can rely heavily on estimates and assumptions. For information about the risks associated with estimates and assumptions, see Use of Estimates in Note 1.

8. Symphony Dynamo, Inc.

In conjunction with a financing arrangement with Symphony Dynamo, Inc. and Symphony Dynamo Holdings LLC ("Holdings") in November 2009, we agreed to make contingent cash payments to Holdings equal to 50% of the first $50 million from any upfront, pre-commercialization milestone or similar payments received by us from any agreement with any third party with respect to the development and/or commercialization of cancer and hepatitis C therapies originally licensed to Symphony Dynamo, Inc., including SD-101. We have made no payments and have not recorded a liability as of December 31, 2016.

9. Collaborative Research, Development and License Agreements

AstraZeneca

Pursuant to a research collaboration and license agreement, as amended, with AstraZeneca we discovered and performed initial clinical development of AZD1419, a TLR9 agonist product candidate for the treatment of asthma.

Under the amended agreement we received non-refundable payments of $3.0 million and $5.4 million in 2011 and in 2014, respectively. These payments were deferred and recognized over the estimated period of performance at the time of payment, as subsequently revised.

We have also received payments for development work of $3.0 million, $6.0 million and $8.0 million, in 2011, 2012 and 2014, respectively, which were deferred and recognized as research and development expenses were incurred.

In January 2016, we amended our agreement with AstraZeneca whereby AstraZeneca will conduct the Phase 2a safety and efficacy trial of AZD1419 in patients with asthma that originally was to be conducted by Dynavax. Under the terms of the January 2016 amendment, unused amounts remaining from the $8.0 million payment received in 2014 will be returned to AstraZeneca or offset against future milestone payments that may be earned by us under the agreement, net of amounts we recognized as development work that was performed.

In June 2016, all of our remaining contractual obligations under our agreement with AstraZeneca were completed. As no further performance obligations remain, we revised the estimated period of performance of development work to June 2016 from September 2016, and recognized remaining deferred payments as revenue as of June 30, 2016. The revision of the performance period led to the recognition of an additional $0.8 million in collaboration revenue during 2016.

In November 2016, AstraZeneca initiated the Phase 2a trial of AZD1419 in asthma patients. Upon AstraZeneca's initiation of the Phase 2a trial, Dynavax earned a milestone payment of $7.2 million, which was offset against the $7.4 million in unused development funding previously advanced by AstraZeneca. Dynavax recognized the $7.2 million milestone as revenue during the fourth quarter of 2016. The remaining balance of unused development funding, net of the $7.2 million milestone payment, was $0.2 million which we recognized as a current liability on the accompanying consolidated balance sheets as of December 31, 2016.

Under the terms of the agreement, as amended, we are eligible to receive up to $100 million in additional milestone payments, based on the achievement of certain development and regulatory objectives. Additionally, upon commercialization, we are eligible to receive tiered royalties ranging from the mid to high single-digits based on product sales of any products originating from the collaboration. We have the option to co-promote in the United States products arising from the collaboration, if any. AstraZeneca has the right to sublicense its rights upon our prior consent.

The following table summarizes the revenues earned under our agreement with AstraZeneca, included as collaboration revenue in our consolidated statements of operations (in thousands):

	Year ended December 31,		
	2016	2015	2014
Initial and milestone payment	$ 7,722	$ 238	$ 681
Subsequent payment	1,953	892	2,554
Performance of research activities	103	1,635	2,174
Total	$ 9,778	$ 2,765	$ 5,409

As of December 31, 2016, no deferred revenue from the initial payment, subsequent payment and development funding payments remained. Total deferred revenue from these payments as of December 31, 2015 was $2.7 million.

Absent early termination, the agreement will expire when all of AstraZeneca's payment obligations expire. AstraZeneca has the right to terminate the agreement at any time upon prior written notice and either party may terminate the agreement early upon written notice if the other party commits an uncured material breach of the agreement.

GlaxoSmithKline ("GSK")

In November 2014 our research and development collaboration and license agreement with GSK expired and we recognized as collaboration revenue $2.5 million, which represented the remaining unrealized portion of the initial $10.0 million payment on signing of the agreement. Revenue from the initial payment from GSK was deferred and was being recognized over the estimated period of performance. Upon expiration of the agreement with GSK in November 2014, we regained global rights to continue the development of DV1179 and other TLR 7/9 inhibitors for all indications. As of December 31, 2016 and 2015 no deferred revenue relating to the initial payment remains.

10. Long-Term Debt

Note Purchase Agreement

In October 2016, we entered into a Note Purchase Agreement pursuant to which the Company would borrow $100.0 million upon approval of HEPLISAV-B. The Company paid the prospective lender $1.0 million upon entering into the Note Purchase Agreement and incurred additional expenses of $1.6 million in securing the Note Purchase Agreement. No notes were ultimately sold by the Company under the Note Purchase Agreement.

In December 2016, the Company terminated the Note Purchase Agreement and paid a termination fee of $1.5 million. The $1.0 million paid upon entering in the note purchase agreement and $1.5 million termination fee are included in other expense in the consolidated statements of operations. The additional expenses of $1.6 million related to securing the Note Purchase Agreement are included in loss from operations in the consolidated statement of operations.

Hercules Loan and Security Agreement

In December 2014, we entered into a Loan and Security Agreement ("Loan Agreement") with Hercules Technology Growth Capital, Inc. ("Hercules") under which we could borrow up to $40.0 million in two tranches. We drew down the first tranche of $10.0 million upon closing of the transaction on December 23, 2014. The second tranche, of $30.0 million, was available to be drawn at our option any time prior to September 30, 2015. No additional amounts were drawn down under the terms of the Loan Agreement.

In September 2015, we repaid all outstanding amounts under the Loan Agreement, at which time our obligations under the Loan Agreement terminated and Hercules released its security interests in all collateral under the Loan Agreement. We paid to Hercules $11.0 million, which consisted of $10.0 million outstanding principal, accrued but unpaid interest of $38 thousand, end of term fee of $0.8 million and prepayment charges of $0.2 million. We recognized the repayment to be a substantial modification to the debt instrument and applied debt extinguishment accounting to record a one-time loss on extinguishment of debt in the amount of $1.7 million.

11. Net Loss Per Share

Basic net loss per share is calculated by dividing the net loss by the weighted-average number of common shares outstanding during the period. Diluted net loss per share is computed by dividing the net loss by the weighted-average number of common shares outstanding during the period and giving effect to all potentially dilutive common shares using the treasury-stock method. For purposes of this calculation, outstanding stock options, stock awards, warrants and Series B Convertible Preferred Stock are considered to be potentially dilutive common shares and are only included in the calculation of diluted net loss per share when their effect is dilutive.

	December 31,		
	2016	2015	2014
Basic and diluted net loss per share (in thousands, except per share amounts):			
Numerator:			
Net loss	$ (112,444)	$ (106,794)	$ (90,722)
Denominator for basic and diluted net loss per share:			
Weighted-average common shares outstanding	38,506	32,881	26,289
Basic and diluted net loss per share	$ (2.92)	$ (3.25)	$ (3.45)

Outstanding warrants, stock options, stock awards and Series B Convertible Preferred Stock were excluded from the calculation of net loss per share allocable to common stockholders as the effect of their inclusion would have been anti-dilutive.

	December 31,		
	2016	2015	2014
Outstanding securities not included in diluted net loss per share calculation (in thousands):			
Stock options and stock awards	4,673	3,086	1,998
Series B Convertible Preferred Stock (as converted to common stock)	-	-	4,343
Warrants	-	-	1,081
	4,673	3,086	7,422

12. Common Stock and Warrants

Common Stock Outstanding

As of December 31, 2016, there were 38,598,618 shares of our common stock outstanding.

On November 12, 2015, we entered into an At Market Issuance Sales Agreement (the "2015 ATM Agreement") with Cowen under which we could offer and sell our common stock from time to time up to aggregate sales proceeds of $90 million through Cowen as our sales agent. We will pay Cowen a commission of up to 3.0% of the gross sales proceeds of any common stock sold through Cowen under the Agreement. As of December 31, 2016, we have sold no shares of common stock under the 2015 ATM Agreement. For information on sales under the 2015 ATM Agreement subsequent to December 31, 2016, see Note 17.

In July 2015, we completed an underwritten public offering of 5,227,273 shares of our common stock, including 681,818 shares sold pursuant to the full exercise of an overallotment option previously granted to the underwriters. All of the shares were offered at a price to the public of $27.50 per share. The net proceeds to us from this offering were approximately $134.9 million, after deducting the underwriting discount and other estimated offering expenses payable by us.

In June and July 2015, we sold an aggregate of 2,125,439 shares of common stock under an At Market Issuance Sales Agreement (the "2014 ATM Agreement") with Cowen and Company, LLC ("Cowen") resulting in net proceeds to us of approximately $49.0 million. The 2014 ATM Agreement terminated in July 2015.

Warrants

As of December 31, 2016 and 2015, no warrants were outstanding. During the year ended December 31, 2015 and 2014, warrants were exercised to purchase an aggregate of approximately 383,000 and 11,000 shares, respectively, of our common stock.

13. Equity Plans and Stock-Based Compensation

Stock Plans

Under the 2004 Stock Incentive Plan ("2004 Plan") options to purchase 173,832 shares of common stock remained outstanding as of December 31, 2016.

Under the 2010 Employment Inducement Award Plan ("Inducement Plan") options to purchase 12,450 shares of common stock remained outstanding as of December 31, 2016.

The 2011 Equity Incentive Plan ("2011 Plan") was approved by the Company's stockholders and adopted in January 2011. On May 31, 2016, the stockholders of the Company approved an amendment and restatement of the 2011 Plan to increase the number of shares of common stock authorized for issuance under the plan by 3,200,000. The 2011 Plan, as amended, provides for the issuance of up to 8,743,442 shares of our common stock to employees and non-employees of the Company and became effective on January 6, 2011. The 2011 Plan is administered by our Board of Directors, or a designated committee of the Board of Directors, and awards granted under the 2011 Plan have a term of 7 or 10 years unless earlier terminated by the Board of Directors. After the adoption of the 2011 Plan, no additional awards were granted under either the 2004 Plan or the Inducement Plan. As of January 6, 2011, all shares subject to awards outstanding under the 2004 Plan and Inducement Plan that expire or are forfeited will be included in the reserve for the 2011 Plan to the extent such shares would otherwise return to such plans. As of December 31, 2016, options to purchase 3,787,754 shares of common stock remained outstanding under the 2011 Plan. As of December 31, 2016, there were 3,157,399 shares of common stock reserved for issuance under the 2011 Plan.

Activity under our stock plans is set forth below:

	Shares Underlying Outstanding Options (in thousands)	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value (in thousands)
Balance at December 31, 2015	2,891	$ 23.34		
Options granted	1,414	19.56		
Options exercised	(16)	13.81		
Options cancelled:				
Options forfeited (unvested)	(84)	18.23		
Options cancelled (vested)	(230)	36.64		
Balance at December 31, 2016	3,975	21.38	6.68	$ -
Vested and expected to vest at December 31, 2016	3,951	21.40	6.67	$ -
Exercisable at December 31, 2016	1,836	23.94	5.73	$ -

The total intrinsic value of stock options exercised during the years ended December 31, 2016, 2015 and 2014 was $0.2 million, $0.4 million and $0.1 million, respectively. The total intrinsic value of exercised stock options is calculated based on the difference between the exercise price and the quoted market price of our common stock as of the close of the exercise date.

The total fair value of stock options vested during the years ended December 31, 2016, 2015 and 2014 was $12.1 million, $6.9 million and $5.6 million, respectively.

Our non-vested stock awards are comprised of restricted stock units granted with performance and time-based vesting criteria. A summary of the status of non-vested restricted stock units as of December 31, 2016, and activities during 2016 are summarized as follows:

	Number of Shares (In thousands)	Weighted-Average Grant-Date Fair Value
Non-vested as of December 31, 2015	195	$ 17.52
Granted	856	$ 12.42
Vested	(139)	$ 7.24
Forfeited or expired	(213)	$ 21.46
Non-vested as of December 31, 2016	699	$ 12.12

Stock-based compensation expense related to restricted stock units was approximately $2.4 million for the year ended December 31, 2016. The aggregate intrinsic value of the restricted stock units outstanding as of December 31, 2016, based on our stock price on that date, was $2.8 million.

The weighted average grant-date fair value of restricted stock units granted during the years ended December 31, 2016, 2015 and 2014 was, $12.42, $20.05 and $17.92, respectively. The total fair value of restricted stock units vested during the years ended December 31, 2016 and 2015 was $1.0 million and $0.1 million, respectively. No restricted stock units vested during 2014.

Stock-Based Compensation

Under our stock-based compensation plans, option awards generally vest over a four-year or three-year period contingent upon continuous service and unless exercised, expire seven or ten years from the date of grant (or earlier upon termination of continuous service). The Company has also granted performance-based equity awards to certain of our employees under the 2011 Plan. As of December 31, 2016, approximately 70,000 shares were outstanding related to options and restricted stock units subject to these performance-based vesting criteria. The fair value of each option is estimated on the date of grant using the Black-Scholes option valuation model and the following weighted-average assumptions:

	Stock Options			Employee Stock Purchase Plan		
	Year Ended December 31,			Year Ended December 31,		
	2016	2015	2014	2016	2015	2014
Weighted-average fair value	$ 9.54	$ 13.37	$ 15.16	$ 7.86	$ 9.18	$ 7.45
Risk-free interest rate	1.4%	1.7%	1.8%	0.6%	0.4%	0.2%
Expected life (in years)	4.9	5.9	5.9	1.2	1.2	1.2
Expected Volatility	0.7	0.7	1.4	0.6	0.6	0.9

Expected volatility is based on historical volatility of our stock price. The expected life of options granted is estimated based on historical option exercise and employee termination data. Our senior management, who hold a majority of the options outstanding, and other employees were grouped and considered separately for valuation purposes. The risk-free rate for periods within the contractual life of the option is based on the U.S. Treasury yield curve in effect at the time of grant. Forfeiture estimates are based on historical employee turnover. The dividend yield is zero percent for all years and is based on our history and expectation of dividend payouts.

Compensation expense is based on awards ultimately expected to vest and reflects estimated forfeitures. For equity awards with time-based vesting, the fair value is amortized to expense on a straight-line basis over the vesting periods. For equity awards with performance-based vesting criteria, the fair value is amortized to expense when the achievement of the vesting criteria becomes probable.

We recognized the following amounts of stock-based compensation expense (in thousands):

	Year Ended December 31,		
	2016	2015	2014
Employees and directors stock-based compensation expense	$ 14,126	$ 9,316	$ 6,062
Non-employees stock-based compensation expense	-	-	27
Total	$ 14,126	$ 9,316	$ 6,089

	Year Ended December 31,		
	2016	2015	2014
Research and development	$ 6,742	$ 4,123	$ 2,868
General and administrative	$ 7,384	5,193	3,221
Total	$ 14,126	$ 9,316	$ 6,089

In addition, the cash-settled portion of stock compensation expense was $0.6 million and $0.4 million for the years ended December 31, 2016 and 2015, respectively. No cash-settled portion of stock compensation expense was incurred during 2014.

As of December 31, 2016, the total unrecognized compensation cost related to non-vested stock options and awards deemed probable of vesting, including all stock options with time-based vesting, net of estimated forfeitures, amounted to $22.4 million, which is expected to be recognized over the remaining weighted-average vesting period of 2.3 years. As of December 31, 2016, the total unrecognized compensation cost related to non-vested stock options not deemed probable of vesting, net of estimated forfeitures, amounted to $0.5 million.

Employee Stock Purchase Plan

The 2014 Employee Stock Purchase Plan, as amended, (the "Purchase Plan") provides for the purchase of common stock by eligible employees and became effective on May 28, 2014. On May 31, 2016, stockholders approved an amendment to the Purchase Plan to increase the aggregate number of shares of common stock authorized for issuance under the plan to 250,000. The purchase price per share is the lesser of (i) 85% of the fair market value of the common stock on the commencement of the offer period (generally, the sixteenth day in February or August) or (ii) 85% of the fair market value of the common stock on the exercise date, which is the last day of a purchase period (generally, the fifteenth day in February or August). As of December 31, 2016, employees have acquired 45,547 shares of our common stock under the Purchase Plan and 182,474 shares of our common stock remained available for future purchases under the Purchase Plan.

As of December 31, 2016, the total unrecognized compensation cost related to shares of our common stock under the Purchase Plan amounted to $0.5 million, which is expected to be recognized over the remaining weighted-average vesting period of 1.7 years.

14. Employee Benefit Plan

We maintain a 401(k) Plan, which qualifies as a deferred salary arrangement under Section 401(k) of the Internal Revenue Code. Under the 401(k) Plan, participating employees may defer a portion of their pretax earnings. We may, at our discretion, contribute for the benefit of eligible employees. The Company's contribution to the 401(k) Plan approximated $0.2 million for the years ended December 31, 2016 and 2015. No contributions were made during the year ended December 31, 2014.

15. Income Taxes

Consolidated income (loss) before provision for income taxes consisted of the following (in thousands):

	Year Ended December 31,		
	2016	2015	2014
U.S.	$ (114,484)	$ (107,450)	$ (91,121)
Non U.S.	2,040	656	399
Total	$ (112,444)	$ (106,794)	$ (90,722)

No income tax expense was recorded for the years ended December 31, 2016, 2015 and 2014 due to net operating loss carryforwards to offset the net income at Dynavax GmbH and a valuation allowance which offsets the deferred tax assets. The difference between the consolidated income tax benefit and the amount computed by applying the federal statutory income tax rate to the consolidated loss before income taxes was as follows (in thousands):

	Year Ended December 31,		
	2016	2015	2014
Income tax benefit at federal statutory rate	$ (38,183)	$ (36,301)	$ (30,818)
State tax	(334)	(394)	1,204
Business credits	(1,950)	(2,622)	(1,484)
Deferred compensation charges	3,016	1,481	2,710
Change in valuation allowance	36,751	36,766	28,093
Other	700	1,070	295
Total income tax expense	$ -	$ -	$ -

Deferred tax assets and liabilities consisted of the following (in thousands):

	December 31,	
	2016	2015
Deferred tax assets:		
Net operating loss carry forwards	$ 249,510	$ 212,074
Research tax credit carry forwards	29,463	26,285
Accruals and reserves	8,684	9,771
Capitalized research costs	4,457	6,553
Deferred revenue	-	908
Other	1,303	1,375
Total deferred tax assets	293,417	256,966
Less valuation allowance	(293,145)	(256,712)
Net deferred tax assets	272	254
Deferred tax liabilities:		
Fixed Assets	(272)	(254)
Total deferred tax liabilities	(272)	(254)
Net deferred tax assets	$ -	$ -

The tax benefit of net operating losses, temporary differences and credit carryforwards is required to be recorded as an asset to the extent that management assesses that realization is “more likely than not.” Realization of the future tax benefits is dependent on our ability to generate sufficient taxable income within the carryforward period. Because of our recent history of operating losses, management believes that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is currently not likely to be realized and, accordingly, has provided a full valuation allowance. The valuation allowance increased by $36.4 million, $36.2 million and $27.8 million during the years ended December 31, 2016, 2015 and 2014, respectively.

We have not recorded deferred income taxes applicable to undistributed earnings of a foreign subsidiary that are indefinitely reinvested in foreign operations. Generally, such earnings become subject to U.S. tax upon the remittance of dividends and under certain other circumstances. It is not practicable to estimate the amount of the deferred tax liability on such undistributed earnings.

As of December 31, 2016, we had federal net operating loss carryforwards of approximately $695.9 million, which will expire in the years 2018 through 2036 and federal research and development tax credits of approximately $21.0 million, which expire in the years 2018 through 2036.

As of December 31, 2016, we had net operating loss carryforwards for California and other states for income tax purposes of approximately $178.6 million, which expire in the years 2017 through 2036, and California state research and development tax credits of approximately $15.9 million, which do not expire.

As of December 31, 2016, $1.3 million of net operating loss is attributable to stock-based compensation. As a result of the adoption of ASU 2016-09 we have recognized the net operating losses attributable to stock-based compensation and offset them with a full valuation allowance.

As of December 31, 2016, we had net operating loss carryforwards for foreign income tax purposes of approximately $15.9 million, which do not expire.

The Company asserts ability and intent to postpone remittance of all or part of net investment in Dynavax GmbH (including earnings) indefinitely (i.e., essentially permanently reinvest). As of December 31, 2016, we have cumulative total undistributed earnings for non-U.S. subsidiaries. Deferred income taxes have not been provided on the undistributed earnings of non-U.S. subsidiaries and any deferred tax liabilities, if recognized, are not expected to be significant.

Uncertain Income Tax positions

The total amount of unrecognized tax benefits as of December 31, 2016, 2015 and 2014 is $2.4 million. If recognized, none of the unrecognized tax benefits would affect the effective tax rate. We had no unrecognized tax benefits as of December 31, 2016.

The following table summarizes the activity related to the Company's unrecognized tax benefits:

Balance at December 31, 2015	$ (2,426)
Tax positions related to the current year	
Additions	-
Reductions	-
Tax positions related to the prior year	
Additions	-
Reductions	-
Balance at December 31, 2016	$ (2,426)

Our policy is to account for interest and penalties as income tax expense. As of December 31, 2016, the Company had no interest related to unrecognized tax benefits. No amounts of penalties related to unrecognized tax benefits were recognized in the provision for income taxes. We do not anticipate any significant change within 12 months of this reporting date of its uncertain tax positions.

The Tax Reform Act of 1986 limits the annual use of net operating loss and tax credit carryforwards in certain situations where changes occur in stock ownership of a company. In the event the Company has a change in ownership, as defined, the annual utilization of such carryforwards could be limited. Due to past equity issuances and changes in ownership of Dynavax common stock, we believe that our ability to use our net operating losses and tax credits in the future may be limited.

We are subject to income tax examinations for U.S. federal and state income taxes from 1998 forward. We are subject to tax examination in Germany from 2016 forward.

16. Selected Quarterly Financial Data (Unaudited; in thousands, except per share amounts)

	Year Ended December 31, 2016			
	Q1	Q2	Q3	Q4
Revenues	$ 942	$ 2,647	$ 162	$ 7,292
Net loss	$ (27,023)	$ (28,986)	$ (34,694)	$ (21,741)
Basic and diluted net loss per share	$ (0.70)	$ (0.75)	$ (0.90)	$ (0.56)
Shares used to compute basic and diluted net loss per share	38,472	38,496	38,512	38,544

	Year Ended December 31, 2015			
	Q1	Q2	Q3	Q4
Revenues	$ 627	$ 1,550	$ 1,188	$ 685
Net loss	$ (26,217)	$ (23,591)	$ (30,124)	$ (26,862)
Basic and diluted net loss per share	$ (0.97)	$ (0.80)	$ (0.82)	$ (0.70)
Shares used to compute basic and diluted net loss per share	27,065	29,335	36,532	38,429

17. Subsequent Events

As of March 9, 2017 we have received cash of $23.3 million resulting from sales of 5,650,322 shares of our common stock under our 2015 ATM Agreement.

In January 2017, we implemented organizational restructuring and cost reduction plans to align around our immuno-oncology business, while allowing us to advance HEPLISAV-B, our investigational hepatitis B vaccine candidate, through the FDA review and approval process. To achieve these cost reductions, we suspended manufacturing for HEPLISAV-B and reduced our global workforce by 38 percent. We expect to incur restructuring costs related to one-time employee termination benefits, currently estimated to be $3.0 million, which will be primarily paid in cash in the first quarter of 2017.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 ("the Exchange Act")) that are designed to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Principal Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can only provide reasonable, not absolute, assurance of achieving the desired control objectives.

Based on their evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this report, our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, concluded that our disclosure controls and procedures are effective and were operating at the reasonable assurance level to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission rules and forms.

(b) Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework). Based on that evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2016. The Company's independent registered public accountants, Ernst & Young LLP, audited the consolidated financial statements included in this Annual Report on Form 10-K and have issued a report on the Company's internal control over financial reporting. The report on the audit of internal control over financial reporting appears below.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Dynavax Technologies Corporation

We have audited Dynavax Technologies Corporation's internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). Dynavax Technologies Corporation's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Dynavax Technologies Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Dynavax Technologies Corporation as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2016 of Dynavax Technologies Corporation and our report dated March 13, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Redwood City, California
March 13, 2017

(c) Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information required by this Item is incorporated by reference to the sections entitled “Proposal 1—Elections of Directors,” “Executive Officers,” “Corporate Governance” and “Section 16(a) Beneficial Ownership Reporting Compliance” in our Definitive Proxy Statement in connection with the 2017 Annual Meeting of Stockholders (the “Proxy Statement”) which will be filed with the Securities and Exchange Commission within 120 days after the fiscal year ended December 31, 2016.

We have adopted the Dynavax Code of Business Conduct and Ethics (“Code of Conduct”), a code of ethics that applies to our employees, including our Chief Executive Officer, Chief Financial Officer and to our non-employee directors. The Code of Conduct is publicly available on our website under the Investors and Media section at www.dynavax.com. This website address is intended to be an inactive, textual reference only; none of the material on this website is part of this report. If any substantive amendments are made to the Code of Conduct or any waiver granted, including any implicit waiver, from a provision of the Code of Conduct to our Chief Executive Officer or Chief Financial Officer, we will disclose the nature of such amendment or waiver on that website or in a report on Form 8-K. We will provide a written copy of the Dynavax Code of Conduct to anyone without charge, upon request written to Dynavax, Attention: Corporate Secretary, 2929 Seventh Street, Suite 100, Berkeley, CA 94710-2753, (510) 848-5100.

ITEM 11. EXECUTIVE COMPENSATION

Information required by this Item is incorporated by reference to the section entitled “Executive Compensation Program,” “Director Compensation,” “Compensation Discussion and Analysis,” “Report of the Compensation Committee of the Board of Directors on Executive Compensation,” “Outstanding Equity Awards at Fiscal Year End” and “Compensation Committee Interlocks and Insider Participation” in the Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

Information regarding security ownership of certain beneficial owners and management is incorporated by reference to the section entitled “Security Ownership of Certain Beneficial Owners and Management” in the Proxy Statement. Information regarding our stockholder approved and non-approved equity compensation plans are incorporated by reference to the section entitled “Equity Compensation Plans” in the Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

Information required by this Item is incorporated by reference to the sections entitled “Certain Transactions With or Involving Related Persons” and “Independence of the Board of Directors” in the Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

Information required by this Item is incorporated by reference to the section entitled “Audit Fees” in the Proxy Statement.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) Documents filed as part of this report:

1. Financial Statements

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets

Consolidated Statements of Operations

Consolidated Statements of Comprehensive Loss

Consolidated Statements of Stockholders' Equity

Consolidated Statements of Cash Flows

Notes to Consolidated Financial Statements

2. Financial Statement Schedules

None, as all required disclosures have been made in the Consolidated Financial Statements and notes thereto or are not applicable.

(b) Exhibits

		Incorporated by Reference				
Exhibit Number	**Document**	**Exhibit Number**	**Filing**	**Filing Date**	**File No.**	**Filed Herewith**
3.1	Sixth Amended and Restated Certificate of Incorporation	3.1	S-1/A	February 5, 2004	333-109965	
3.2	Amended and Restated Bylaws	3.2	S-1/A	February 5, 2004	333-109965	
3.3	Form of Certificate of Designation of Series A Junior Participating Preferred Stock	3.3	8-K	November 6, 2008	000-50577	
3.4	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.1	8-K	January 4, 2010	001-34207	
3.5	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.1	8-K	January 5, 2011	001-34207	
3.6	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.6	8-K	May 30, 2013	001-34207	
3.7	Certificate of Amendment of the Sixth Amended and Restated Certificate of Incorporation	3.1	8-K	November 10, 2014	001-34207	
4.1	Reference is made to Exhibits 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 and 3.7 above					
4.2	Form of Specimen Common Stock Certificate	4.2	S-1/A	January 16, 2004	333-109965	

Exhibit Number	Document	Incorporated by Reference				Filed Herewith
		Exhibit Number	Filing	Filing Date	File No.	
4.3	Rights Agreement, dated as of November 5, 2008, by and between the Company and Mellon Investor Services LLC	4.4	8-K	November 6, 2008	000-50577	
4.4	Form of Right Certificate	4.5	8-K	November 6, 2008	000-50577	
4.5	Form of Restricted Stock Unit Award Agreement under the 2004 Stock Incentive Plan	4.6	10-K	March 6, 2009	001-34207	
10.01†	Research Collaboration and License Agreement, dated September 1, 2006, by and between the Company and AstraZeneca AB	10.30	10-Q	November 3, 2006	000-50577	
10.02	License Agreement, dated June 26, 2007, between Coley Pharmaceuticals Group, Inc. and the Company	10.32	10-Q	August 3, 2007	000-50577	
10.03†	Amendment No. 2 to the Research Collaboration and License Agreement, dated September 1, 2006, by and between the Company and AstraZeneca AB, dated February 3, 2009	10.40	10-Q	April 30, 2009	001-34207	
10.04	Amended and Restated Purchase Option Agreement, dated November 9, 2009, between the Company and Symphony Dynamo Holdings LLC and Symphony Dynamo, Inc.	10.47	10-K	March 16, 2010	001-34207	
10.05	Amendment No. 3 to the Research Collaboration and License Agreement, dated September 1, 2006, by and between the Company and AstraZeneca AB, dated September 30, 2010	10.54	8-K	October 4, 2010	001-34207	
10.6	Lease, dated January 7, 2004, between the Company and 2929 Seventh Street, LLC	10.17	S-1/A	January 16, 2004	333-109965	
10.7	First Amendment to Lease, dated as of May 21, 2004, between the Company and 2929 Seventh Street, LLC	10.55	8-K	October 13, 2010	001-34207	
10.8	Second Amendment to Lease, dated as of October 12, 2010, between the Company and 2929 Seventh Street, LLC	10.56	8-K	October 13, 2010	001-34207	

Exhibit Number	Document	Incorporated by Reference				Filed Herewith
		Exhibit Number	Filing	Filing Date	File No.	
10.9+	Amended and Restated 2011 Equity Incentive Plan	99.1	S-8	June 1, 2016	333-211747	
10.10+	Form of Restricted Stock Unit Award Notice and Restricted Stock Unit Award Agreement under the 2011 Equity Incentive Plan	99.2	S-8	May 21, 2015	001-34207	
10.11+	Form of Stock Option Grant Notice and Option Agreement under the 2011 Equity Incentive Plan	99.3	S-8	January 6, 2011	333-171552	
10.12	Third Amendment to Lease, dated as of April 1, 2011, between the Company and 2929 Seventh Street, LLC	10.65	10-Q	August 3, 2011	001-34207	
10.13†	Amendment No. 4 to the Research Collaboration and License Agreement, dated September 1, 2006, by and between AstraZeneca AB and the Company, dated September 23, 2011	10.67	10-K	March 12, 2012	001-34207	
10.14	Fourth Amendment to Lease, dated as of December 14, 2012, between the Company and 2929 Seventh Street, LLC	10.72	10-K	March 8, 2013	001-34207	
10.15	Lease, dated as of December 14, 2012, between the Company and 2929 Seventh Street, LLC	10.73	10-K	March 8, 2013	001-34207	
10.16+	Employment Agreement, dated as of April 3, 2013, by and between Eddie Gray and the Company	10.78	8-K	May 3, 2013	001-34207	
10.17+	Management Continuity and Severance Agreement, dated as of April 3, 2013, by and between Eddie Gray and the Company	10.79	8-K	May 3, 2013	001-34207	
10.18	Sales Agreement, dated November 12, 2015, between the Company and Cowen and Company, LLC	10.1	8-K	November 12, 2015	001-34207	
10.19†	Amendment No. 5 to the Research Collaboration and License Agreement, dated September 1, 2006, by and between AstraZeneca AB and the Company, dated January 7, 2014	10.88	10-K	March 10, 2014	001-34207	

Exhibit Number	Document	Incorporated by Reference				Filed Herewith
		Exhibit Number	Filing	Filing Date	File No.	
10.20+	Employment Agreement, dated March 21, 2013, by and between David Novack and the Company	10.84	10-K	March 10, 2014	001-34207	
10.21+	Employment Agreement, dated July 11, 2013, by and between Robert Janssen, M.D. and the Company	10.85	10-K	March 10, 2014	001-34207	
10.22+	Employment Agreement, dated February 5, 2014, by and between David L. Johnson and the Company	10.86	10-K	March 10, 2014	001-34207	
10.23+	Amended and Restated 2014 Employee Stock Purchase Plan	99.4	S-8	June 1, 2016	333-211747	
10.24+	Amended and Restated 2004 Non-Employee Director Option Program and Amended and Restated 2005 Non-Employee Director Cash Compensation Program, Amended February 5, 2015	10.35	10-K	March 5, 2015	001-34207	
10.25†	Amendment No. 6 to the Research Collaboration and License Agreement, dated September 1, 2006, by and between AstraZeneca AB and the Company, dated December 4, 2014	10.36	10-K	March 5, 2015	001-34207	
10.26	Amendment No. 7 to the Research Collaboration and License Agreement, dated September 1, 2006, by and between AstraZeneca AB and the Company, dated January 18, 2016	10.29	10-K	March 8, 2016	001-34207	
10.27+	Form of Amended and Restated Management Continuity and Severance Agreement between the Company and certain of its executive officers	10.1	8-K	April 19, 2016	001-34207	
10.28	Note Purchase Agreement, dated October 26, 2016, by and between Deerfield Partners, L.P., Deerfield International Master Fund, L.P. and the Company					X

Exhibit Number	Document	Incorporated by Reference				Filed Herewith
		Exhibit Number	Filing	Filing Date	File No.	
10.29	Letter Agreement, dated December 20, 2016, by and between Deerfield Partners, L.P., Deerfield International Master Fund, L.P. and the Company					X
12.1	Statement of Computation of Ratio of Earnings to Fixed Charges					X
21.1	List of Subsidiaries					X
23.1	Consent of Independent Registered Public Accounting Firm					X
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1*	Certification of Chief Executive Officer to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2*	Certification of Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X

EX—101.INS XBRL Instance Document
EX—101.SCH XBRL Taxonomy Extension Schema Document
EX—101.CAL XBRL Taxonomy Extension Calculation Linkbase Document
EX—101.DEF XBRL Taxonomy Extension Definition Linkbase
EX—101.LAB XBRL Taxonomy Extension Labels Linkbase Document
EX—101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

† We have been granted confidential treatment with respect to certain portions of this agreement. Omitted portions have been filed separately with the Securities and Exchange Commission.

+ Indicates management contract, compensatory plan or arrangement.

* The certifications attached as Exhibits 32.1 and 32.2 that accompany this Annual Report on Form 10-K, are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of this Form 10-K), irrespective of any general incorporation language contained in such filing.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Berkeley, State of California.

DYNAVAX TECHNOLOGIES CORPORATION

By: /s/ EDDIE GRAY

Eddie Gray
Chief Executive Officer
(Principal Executive Officer)

Date: March 13, 2017

By: /s/ MICHAEL OSTRACH

Michael Ostrach
Chief Financial Officer
(Principal Financial Officer)

Date: March 13, 2017

By: /s/ DAVID JOHNSON

David Johnson
Vice President, Chief Accounting Officer
(Principal Accounting Officer)

Date: March 13, 2017

Signature	Title	Date
/s/ EDDIE GRAY **Eddie Gray**	Chief Executive Officer *(Principal Executive Officer)*	March 13, 2017
/s/ MICHAEL OSTRACH **Michael Ostrach**	Chief Financial Officer *(Principal Financial Officer)*	March 13, 2017
/s/ DAVID JOHNSON **David Johnson**	Vice President, Chief Accounting Officer *(Principal Accounting Officer)*	March 13, 2017
/s/ ARNOLD L. ORONSKY, PH.D. **Arnold L. Oronsky, Ph.D.**	Chairman of the Board	March 13, 2017
/s/ LAURA BREGE **Laura Brege**	Director	March 13, 2017
/s/ FRANCIS R. CANO, PH.D. **Francis R. Cano, Ph.D.**	Director	March 13, 2017
/s/ DENNIS A. CARSON, M.D. **Dennis A. Carson, M.D.**	Director	March 13, 2017
/s/ DANIEL L. KISNER, M.D. **Daniel L. Kisner, M.D.**	Director	March 13, 2017
/s/ PEGGY V. PHILLIPS **Peggy V. Phillips**	Director	March 13, 2017
/s/ STANLEY A. PLOTKIN, M.D. **Stanley A. Plotkin, M.D.**	Director	March 13, 2017
/s/ NATALE S. RICCIARDI **Natale S. Ricciardi**	Director	March 13, 2017

EXHIBIT INDEX

Exhibit Number	Document	Incorporated by Reference				Filed Herewith
		Exhibit Number	Filing	Filing Date	File No.	
3.1	Sixth Amended and Restated Certificate of Incorporation	3.1	S-1/A	February 5, 2004	333-109965	
3.2	Amended and Restated Bylaws	3.2	S-1/A	February 5, 2004	333-109965	
3.3	Form of Certificate of Designation of Series A Junior Participating Preferred Stock	3.3	8-K	November 6, 2008	000-50577	
3.4	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.1	8-K	January 4, 2010	001-34207	
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3.6	Certificate of Amendment of Amended and Restated Certificate of Incorporation	3.6	8-K	May 30, 2013	001-34207	
3.7	Certificate of Amendment of the Sixth Amended and Restated Certificate of Incorporation	3.1	8-K	November 10, 2014	001-34207	
4.1	Reference is made to Exhibits 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 and 3.7 above					
4.2	Form of Specimen Common Stock Certificate	4.2	S-1/A	January 16, 2004	333-109965	
4.3	Rights Agreement, dated as of November 5, 2008, by and between the Company and Mellon Investor Services LLC	4.4	8-K	November 6, 2008	000-50577	
4.4	Form of Right Certificate	4.5	8-K	November 6, 2008	000-50577	
4.5	Form of Restricted Stock Unit Award Agreement under the 2004 Stock Incentive Plan	4.6	10-K	March 6, 2009	001-34207	
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12.1	Statement of Computation of Ratio of Earnings to Fixed Charges					X
21.1	List of Subsidiaries					X
23.1	Consent of Independent Registered Public Accounting Firm					X
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X

Exhibit Number	Document	Incorporated by Reference				Filed Herewith
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31.2	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1*	Certification of Chief Executive Officer to Section 906 of the Sarbanes-Oxley Act of 2002					X
32.2*	Certification of Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X

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EX—101.DEF XBRL Taxonomy Extension Definition Linkbase
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EX—101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

† We have been granted confidential treatment with respect to certain portions of this agreement. Omitted portions have been filed separately with the Securities and Exchange Commission.

+ Indicates management contract, compensatory plan or arrangement.

* The certifications attached as Exhibits 32.1 and 32.2 that accompany this Annual Report on Form 10-K, are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of this Form 10-K), irrespective of any general incorporation language contained in such filing.

NOTE PURCHASE AGREEMENT

THIS NOTE PURCHASE AGREEMENT (this "Agreement"), dated as of October 26, 2016, is made and entered into by and between, **DYNAVAX TECHNOLOGIES CORPORATION.**, a Delaware corporation, the purchasers party hereto from time to time, and **DEERFIELD PARTNERS, L.P.**, as collateral agent.

BACKGROUND STATEMENT

A. The Borrower has requested that the Purchasers purchase an aggregate principal amount of $100,000,000 of the Borrower's senior secured notes, each substantially in the form of **Exhibit C** hereto (the "Notes"), pursuant to and in accordance with the terms and conditions hereof.

B. The Purchasers are willing to purchase the Notes described above upon the terms and subject to the conditions set forth in this Agreement.

AGREEMENT

NOW, THEREFORE, in consideration of the premises, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and in order to induce the Purchasers to purchase the notes described herein, the parties hereto hereby agree as follows:

ARTICLE I
DEFINITIONS

1.1 Defined Terms. In addition to the words and terms defined elsewhere in this Agreement, the following terms when used herein have the following respective meanings:

"ACH Indebtedness" means Indebtedness incurred in the ordinary course of business arising in connection with any automated clearinghouse transfers of funds or other payment processing service.

"Affiliate" means, with respect to any Person, any other Person that, directly or indirectly through one or more intermediaries, controls, is controlled by, or is under common control with such first Person or any of its Subsidiaries. The term "control" means (a) the power to vote 10% or more of the Capital Stock of a Person having ordinary voting power, or (b) the possession, directly or indirectly, of any other power to direct or cause the direction of the management or policies of a Person, whether through ownership of voting securities, by contract or otherwise.
The terms "controlling" and "controlled" have meanings correlative thereto. Notwithstanding the foregoing, neither the Collateral Agent nor any Purchaser shall be deemed an "Affiliate" of any Consolidated Entity.

"A/R Facility" has the meaning set forth in **Section 6.2(iv)**.

"Agreement" means this Note Purchase Agreement and all schedules, annexes and exhibits hereto.

"Bankruptcy Code" means Title 11 of the United States Code and any successor statute or statutes having substantially the same function.

"Borrower" means Dynavax Technologies Corporation, a Delaware corporation, and all of its permitted successors and assigns.

"Business Day" means any day of the year on which banks are open for business in New York, New York.

"Capital Lease" means any lease or similar arrangement which is of a nature that payment obligations of the lessee or obligor thereunder at the time are or should be capitalized and shown as liabilities (other than current liabilities) upon a balance sheet of such lessee or obligor prepared in accordance with GAAP.

"Capital Lease Obligations" means, with respect to any Capital Lease, the amount of the obligation of the lessee thereunder that would, in accordance with GAAP, appear on a balance sheet of such lessee with respect to such Capital Lease.

"Capital Stock" means (i) with respect to any Person that is a corporation, any and all shares, interests or equivalents in capital stock (whether voting or nonvoting, and whether common or preferred) of such corporation, and (ii) with respect to any Person that is not a corporation, any and all partnership, membership, limited liability company or other equity interests of such Person; and in each case, any and all warrants, rights or options to purchase any of the foregoing (but excluding any Indebtedness convertible into, or exchangeable for Capital Stock).

"Cash Equivalents" means (i) securities issued or unconditionally guaranteed or insured by the United States of America or any agency or instrumentality thereof, backed by the full faith and credit of the United States of America and maturing within one year from the date of acquisition, (ii) commercial paper issued by any Person organized under the laws of the United States of America, maturing within 360 days from the date of acquisition and, at the time of acquisition, having a rating of at least A-1 or the equivalent thereof by Standard & Poor's Ratings Services or at least P-1 or the equivalent thereof by Moody's Investors Service, Inc., or
F-1 or better by Fitch Investor Services, (iii) time deposits and certificates of deposit maturing within 360 days from the date of issuance and issued by a bank or trust company organized under the laws of the United States of America or any state thereof (A) that has combined capital and surplus of at least $500,000,000 or (B) that has (or is a subsidiary of a bank holding company that has) a long-term unsecured debt rating of at least A or the equivalent thereof by Standard & Poor's Ratings Services or at least A2 or the equivalent thereof by Moody's Investors Service, Inc. or A or better by Fitch Investor Services, and (iv) money market funds that are SEC registered 2a-7 eligible only, have assets in excess of $1,000,000,000, offer a daily purchase/redemption feature and seek to maintain a constant share price; provided that, the Credit Parties will invest only in 'no-load' funds which have a constant $1.00 net asset value target.

"Cash Interest Expense" means, for any Test Period, interest expense (including the interest component of Capital Lease Obligations) paid or payable in cash by the Consolidated Entities on all Indebtedness during such Test Period, as determined on a consolidated basis in accordance with GAAP, excluding, to the extent otherwise included in the calculation of Cash Interest Expense for the applicable period, without duplication, (i) debt issuance costs, debt discount or premium and other financing fees and expenses (including commitment fees), (ii) any cash costs associated with breakage in respect of Hedge Agreements, (iii) annual agency or trustee fees and (iv) all non-recurring cash interest expenses consisting of liquidated damages for failure to timely comply with registration rights obligations under any agreement governing Indebtedness.

"Change in Law" means the occurrence, after the date of this Agreement, of any of the following: (i) the adoption or taking effect of any law, rule, regulation or treaty by any Governmental Authority, (ii) any change in any law, rule, regulation or treaty or in the administration, interpretation, implementation or application thereof by any Governmental Authority or (iii) the making or issuance of any request, rule, guideline or directive (whether or not having the force of law) by any Governmental Authority; provided that, notwithstanding anything herein to the contrary, (x) the Dodd-Frank Wall Street Reform and Consumer Protection Act and all requests, rules, guidelines or directives thereunder or issued in connection therewith and (y) all requests, rules, guidelines or directives promulgated by the Bank for International Settlements, the Basel Committee on Banking Supervision (or any successor or similar authority) or the United States or foreign regulatory authorities, in each case pursuant to Basel III, shall in each case be deemed to be a Change in Law, regardless of the date enacted, adopted or issued.

"Code" means the Internal Revenue Code of 1986 or any successor federal tax code.
Any reference to any provision of the Code shall also include the income tax regulations promulgated thereunder, whether final, temporary or proposed.

"Collateral Access Agreement" means any agreement pursuant to which a warehouseman, bailee or lessor, as applicable, (i) provides the Collateral Agent with access to personal property located in a public warehouse, in the possession of a bailee or located in a facility leased by any Credit Party and a reasonable time to sell and dispose of the inventory from such location and (ii) waives or subordinates any personal property liens against the assets of the Credit Parties to and for the benefit of the Collateral Agent and the Purchasers.

"Collateral Agent" means Deerfield, in its capacity as Collateral Agent appointed under **Section 8.1** and any other Security Documents, and its successors and permitted assigns in such capacity.

"Commitment" means, with respect to any Purchaser, the commitment of such Purchaser to purchase Notes on the Purchase Date in an aggregate principal amount up to the amount set forth opposite such Purchaser's name on **Exhibit A**, as such amount may be reduced from time to time pursuant to the terms hereof.

"Common Stock" means the common stock, no par value per share, of the Borrower.

"Consolidated Entities" means the Borrower and its Subsidiaries.

"Consolidated Net Income" means, with respect to any Person for any Test Period, net income (or loss) for such Person and its Subsidiaries for such Test Period, determined on a consolidated basis in accordance with GAAP (after deduction for minority interests); provided that, in making such determination, there shall be excluded (i) the net income of any other Person that is not a Subsidiary of such Person (or is accounted for by such Person by the equity method of accounting) except to the extent of actual payment of cash dividends or distributions by such Person to such Person or one of its Subsidiaries during such Test Period, (ii) the net income (or loss) of any other Person acquired by, or merged with, such Person or any of its Subsidiaries for any period prior to the date of such acquisition or merger, and (iii) the net income of any Subsidiary of such Person to the extent that the declaration or payment of dividends or similar distributions by such Subsidiary of such net income is not at the time permitted by operation of the terms of its charter, certificate of incorporation or formation or other constituent document or any agreement or instrument (other than a Credit Document) or Requirement of Law applicable to such Subsidiary.

"Controlled Group" means all members of a controlled group of corporations and all trades or businesses (whether or not incorporated) under common control that, together with the Borrower, are treated as a single employer under Section 414 of the Code.

"Convertible Notes" has the meaning set forth in **Section 6.2(v)**. "Costs" has the meaning set forth in **Section 9.2**.

"Credit Documents" means and collectively refer to this Agreement, the Notes, the Security Documents, the Guaranty, the Disclosure Letter and any and all other agreements between an Credit Party and the Collateral Agent or the Purchasers in connection with this Agreement.

"Credit Parties" means the Borrower and the Subsidiary Guarantors.

"Current Market" means, as of any date of determination, the Principal Market on which the shares of Common Stock are then listed, traded and quoted.

"Customary Subordination Terms" means, with respect to any Indebtedness under the Convertible Notes, terms of subordination that shall provide (a) upon a liquidation, bankruptcy, reorganization, insolvency, receivership or similar proceeding relating to the Borrower or its property, or in connection with an assignment for the benefit of creditors of the Borrower or in any marshalling of the Borrower's assets and liabilities, the Obligations (including interest after the commencement of any bankruptcy proceeding at the rate specified herein and any Prepayment Premium) shall be paid in full before the holders of the Convertible Notes shall be entitled to receive any payment or other distribution with respect to the Indebtedness under the Convertible Notes, (b) no payment in respect of the Indebtedness under the Convertible Notes may be made if (i) an Event of Default pursuant to **Section 7.1(a)** shall have occurred and is continuing, by acceleration or otherwise, until such Event of Default is cured or waived or the Obligations are paid in full, or (ii) any other Event of Default shall have occurred and be continuing and the Collateral Agent shall have sent to the Borrower a notice of default (a

"Payment Blockage Notice"); provided that, no more than one Payment Blockage Notice may be sent during any 360 day period and payments in respect of such notes may resume upon the earliest to occur of (A) the date on which such Event of Default is cured or waived, (B) the Obligations are paid in full, (C) the date that is 179 days after the date on which the Payment Blockage Notice is received, and (D) the date the Payment Blockage Notice is rescinded, and (c) if any holder of the Convertible Notes (or trustee) receives payment that is prohibited by the subordination provisions, such holder (or trustee) will hold the payment in trust for the benefit of the holders of the Notes and upon written request of the Collateral Agent swill deliver the amounts in trust to the Collateral Agent for application to the Obligations.

"Deerfield" means Deerfield Partners, L.P.

"Default" means any Event of Default or any event that with the giving of notice, lapse of time, or both, would constitute an Event of Default.

"Default Rate" has the meaning set forth in **Section 2.3(c)**.

"Deferred Acquisition Consideration" means purchase price adjustments, royalty, earn- out, milestone payments, holdbacks, indemnity, contingent or other deferred payments of a similar nature (including any non-compete and consulting payments) payable in connection with a Permitted Acquisition.

"Delisting Event" means the shares of Common Stock cease to be listed, traded or publicly quoted on any Principal Market.

"Deposit Account" has the meaning given to it in Article 9 of the UCC.

"Deposit Account Control Agreement" means any agreement establishing the Collateral Agent's control (as defined in the UCC) of any Deposit Account.

"Disclosure Letter" means the disclosure letter dated the Effective Date and delivered to the Collateral Agent and the Purchasers in respect of this Agreement.

"Disqualified Capital Stock" means, with respect to any Person, any Capital Stock of such Person that, by its terms (or by the terms of any security into which it is convertible or for which it is exchangeable), or upon the happening of any event or otherwise, (i) matures or is mandatorily redeemable or subject to any mandatory repurchase requirement, pursuant to a sinking fund obligation or otherwise, (ii) is redeemable or subject to any mandatory repurchase requirement at the sole option of the holder thereof, or (iii) is convertible into or exchangeable for (whether at the option of the issuer or the holder thereof) (y) debt securities or (z) any Capital Stock referred to in (i) or (ii) above, in each case under (i), (ii) or (iii) above at any time on or prior to the day that is 180 days after the Maturity Date (other than, in each case, (A) redemptions solely for Qualified Capital Stock in such Person and cash in lieu of fractional shares of such Capital Stock and (B) redemptions upon the occurrence of an "asset sale", "fundamental change" or a "change in control" (or similar event, however denominated) so long as any such redemption requirement becomes operative only after repayment in full (or waiver thereof) of all the Obligations (other than contingent indemnification obligations)); provided, however, that only the portion of Capital Stock that so matures or is mandatorily redeemable or

subject to any mandatory repurchase requirement, is so redeemable at the option of the holder thereof, or is so convertible or exchangeable on or prior to such date shall be deemed to be Disqualified Capital Stock.

"Dollar" or "$" means dollars in lawful currency of the United States of America. "Dynavax GmbH" means Dynavax GmbH, a German corporation.

"EBITDA" means, with respect to any Person for any Test Period, Consolidated Net Income for such Person for such Test Period plus (i) to the extent deducted in determining Consolidated Net Income for such Person for such Test Period, (A) interest expense, (B) provision for taxes paid or accrued, (C) depreciation and amortization, (D) non-cash expenses related to stock based compensation, (E) extraordinary charges, expenses or losses incurred other than in the ordinary course of business, (F) any unrealized losses in respect of Hedge Agreements, (G) adjustments relating to purchase price allocation accounting, (H) any foreign currency translation losses, (I) accruals, payments, fees and expenses (including legal, tax, structuring and other costs and expenses) in connection with (x) the execution, delivery and performance of this Agreement and the other Credit Documents by the Credit Parties, the issuance of the Notes and the granting of the Liens under the Security Documents and (y) any Permitted Acquisition or Investment and, to the extent permitted hereunder, issuances or incurrence of Indebtedness, issuances of Capital Stock, dividends, dispositions, consolidations, recapitalizations or refinancing transactions and modifications of Indebtedness, whether or not consummated, (J) non-revenue based milestone payments and upfront payments in connection with any Permitted Acquisition or licensing arrangement (including Heplisav-B In Licenses), (K) any loss realized as a result of the cumulative effect of a change in accounting principles, and (L) any net loss attributable to the early extinguishment or conversion of Indebtedness or other long- term liabilities, minus (iii) to the extent included in Consolidated Net Income for such Person for such Test Period, (A) interest income (to the extent not netted against interest expense in the calculation of interest expense), (B) income tax credits and refunds (to the extent not netted from tax expenses), (C) extraordinary income or gains realized other than in the ordinary course of business, (D) any unrealized income or gains in respect of Hedge Agreements (to the extent not included in clause (i) (F)) above or netted against interest expense in the calculation of interest expense), and (E) any foreign currency translation gains.

"Effective Date" means the date of this Agreement.

"Environmental Law" means any federal, state or local law, statute, ordinance, rule, regulation, permit, license, approval, interpretation, order, guidance or other legal requirement (including any subsequent enactment, amendment or modification) relating to the protection of human health or the environment, including, but not limited to, any requirement pertaining to the manufacture, processing, distribution, use, treatment, storage, disposal, transportation, handling, reporting, licensing, permitting, investigation or remediation of materials that are or may constitute a threat to human health or the environment.

"ERISA" means the Employee Retirement Income Security Act of 1974, as amended. "Event of Default" has the meaning specified in **ARTICLE VII**.

"Exchange Act" means the Securities Exchange Act of 1934, as amended, including the rules and regulations promulgated thereunder.

"Excluded Domestic Holdco" means a Subsidiary that is a U.S. Person and substantially all the assets of which consist of Capital Stock issued by one or more "controlled foreign corporations" as such term is defined in Section 957 of the Code.

"Excluded Foreign Subsidiary" means (i) any Excluded Domestic Holdco, (ii) any Foreign Subsidiary that is a "controlled foreign corporation" as such term is defined in Section 957 of the Code or that is owned by a "controlled foreign corporation," and (iii) a Foreign Subsidiary substantially all the assets of which consist of Capital Stock issued by one or more "controlled foreign corporations" as such term is defined in Section 957 of the Code, except, in each case, if such Excluded Foreign Subsidiary has pledged more than 65% of its voting Capital Stock to secure any Indebtedness (other than the Notes) of a Credit Party or any other Subsidiary which is a U.S. Person.

"Excluded Taxes" means any of the following Taxes imposed on or with respect to a Recipient or required to be withheld or deducted from a payment to a Purchaser, (a) Taxes imposed on or measured by net income (however denominated), franchise Taxes, and branch profits Taxes, in each case, (i) imposed by the United States or as a result of such Purchaser being organized under the laws of, or having its principal office or, its applicable lending office located in, the jurisdiction imposing such Tax (or any political subdivision thereof), or (ii) that are Other Connection Taxes, (b) any United States federal withholding Taxes imposed on amounts payable to or for the account of such Purchaser with respect to an applicable interest in a Note or Commitment pursuant to a law in effect on the date on which (i) such Purchaser acquires such interest in the Note or Commitment or (ii) such Purchaser changes its lending office, except in each case to the extent that, pursuant to **Section 2.11**, amounts with respect to such Taxes were payable either to such Purchaser's assignor immediately before such Purchaser became a party hereto or to such Purchaser immediately before it changed its lending office
(c) Taxes attributable to such Purchaser's failure to comply with **Section 2.11(d)** other than as a result of a Change in Law, or (d) any United States withholding Taxes imposed under FATCA other than due to a Credit Party's non-compliance with FATCA.

"FATCA" means Sections 1471 through 1474 of the Code as of the date of this Agreement (or any amended or successor version that is substantially comparable and not materially more onerous to comply with), any current or future regulations or official interpretations thereof and any agreement entered into pursuant to Section 1471(b)(1) of the Code and any intergovernmental agreements entered into in connection with the foregoing (together with any applicable laws implementing such agreement).

"FDA" means the U.S. Food and Drug Administration.

"FDA Approval" means the sale and marketing of Heplisav-B has been approved by the FDA for labeled indication that includes immunization against infection caused by all known subtypes of hepatitis B virus in adults 18-70 years of age with no BLACK BOX warning, a 2 dose regimen, and clinical data demonstrating Heplisav-B provided a statistically significantly higher rate of seroprotection than Engerix-B.

"Force Majeure Event" means the occurrence of: (a) an act of God (such as, but not limited to, fires, explosions, earthquakes, drought, tidal waves, floods, hurricanes and tropical storms and other severe adverse weather events) or any other natural disaster; (b) an act of war (whether declared or not), hostilities, invasion, act of foreign enemies, civil disorder, mobilization, requisition or embargo; (c) rebellion, revolution, insurrection, or military or usurped power, or civil war; (d) acts or threats of terrorism; (e) contamination by radioactivity from any nuclear fuel, or from any nuclear waste from the combustion of nuclear fuel, radioactive toxic explosive, or other hazardous properties of any explosive nuclear assembly or nuclear component of such assembly; (f) any loss or revocation of FDA Approval other than due to any action by the Borrower unrelated to a request from the FDA, or (g) the recall and/or removal of Heplisav-B from the market or the voluntary withdrawal of Heplisav-B from the market at the direction of, or based upon a request from or discussions with, the FDA; in each case (i) having a material adverse effect on the Consolidated Entity's ability to manufacture (either directly and/or through a contract manufacturer) Heplisav-B Units or sell, market or distribute Heplisav-B in the United States, and (ii) of which the Borrower has provided notice to the Purchasers promptly after the occurrence thereof.

"Foreign Subsidiary" means any Subsidiary organized in a jurisdiction outside the United States.

"GAAP" means generally accepted accounting principles, as recognized by the American Institute of Certified Public Accountants, as modified pursuant to **Section 1.2** below.

"Governmental Authority" means any nation or government, any state, department, agency or other political subdivision thereof, and any entity exercising executive, legislative, judicial, regulatory or administrative functions of or pertaining to any government.

"Guaranty" means a guaranty agreement made by the Subsidiary Guarantors in favor of the Collateral Agent and the Purchasers substantially in the form attached as **Exhibit E** hereto.

"Hazardous Material" means any substance or material meeting any one or more of the following criteria: (i) it is or contains a substance designated as a hazardous waste, hazardous substance, pollutant, contaminant or toxic substance under any Environmental Law; (ii) it is toxic, explosive, corrosive, ignitable, infectious, radioactive, mutagenic or otherwise hazardous, (iii) its presence requires investigation or remediation under an Environmental Law or common law; (iv) it constitutes a danger, nuisance, trespass or health or safety hazard to persons or property; or (v) it is or contains, without limiting the foregoing, petroleum hydrocarbons.

"Hedge Agreement" means any agreement, device or arrangement providing for payments which are related to fluctuations of interest rates, exchange rates or forward rates, including dollar-denominated or cross-currency interest rate exchange agreements, forward currency exchange agreements, interest rate cap or collar protection agreements, forward rate currency or interest rate options.

"Heplisav-B Draw Condition" means the Borrower shall have entered into and executed a license agreement or license agreements with Coley Pharmaceutical Group, Inc., Merck, Sharp & Dohme Corp. and/or GlaxoSmithKline plc for the in-licensing of Intellectual Property sufficient

to allow the Borrower to commercialize Heplisav-B in the United States; provided that (i) each such license agreement (A) together with all other similar license agreements, collectively, have
(x) an aggregate royalty rate or percentage payable by the Consolidated Entities of no greater than 25% per Heplisav-B Unit sold and (y) aggregate upfront payments payable by the Consolidated Entities of no greater than $15,000,000 (provided, that, notwithstanding clause (x) and (y), any such license agreement may be subject to minimum aggregate payment requirements that do not exceed $30,000,000); and (B) has a term no shorter than the longest period of exclusivity under any applicable law with respect to any Intellectual Property that is the subject of such license agreement; and (ii) all such license agreements (A) shall not be terminable by the other party thereto in the event of a change of control of the applicable Consolidated Entity, and (B) shall be assignable by the applicable Consolidated Entity in connection with a sale of all or substantially all of its assets, its vaccine business or its assets relating to the subject matter of the applicable license agreement.

"Heplisav-B In License" means, as of any date of determination, any license agreement described in the definition of "Heplisav-B Draw Condition" that, when considered together will all such similar license agreements, satisfies the requirements of such clause (i) as of such date.

"Heplisav-B Launch" means the first commercial shipments of 1,000 or greater number of Heplisav-B Units by the Consolidated Entities or any direct or indirect assignee or licensee of the Consolidated Entities to a third party customer after FDA Approval.

"Heplisav-B Unit" means a single dose of Heplisav-B.

"Indebtedness" means, for any Person, without duplication, (i) obligations of such Person for borrowed money; (ii) obligations of such Person evidenced by bonds, debentures, notes or other similar instruments; (iii) obligations of such Person in respect of the deferred purchase price of property or services which in accordance with GAAP would be required to be shown as a liability and, without duplication, any purchase price adjustments, royalty, earn-out, milestone payments, holdbacks, indemnity, contingent or other deferred payments of a similar nature incurred in connection with an acquisition, investment, or disposition; (iv) obligations of such Person under any conditional sale or other title retention agreement relating to property acquired by such Person; (v) Capital Lease Obligations of such Person; (vi) obligations, contingent or otherwise, of such Person in respect of letters of credit, acceptances or similar extensions of credit (whether or not drawn upon and in the stated amount thereof) (excluding letters of credit or bankers' acceptances issued in respect of trade payables); (vii) guaranties by such Person of the type of indebtedness described in clauses (i) through (vi) above; (viii) all indebtedness of a third party secured by any Lien on property owned by such Person, whether or not such indebtedness has been assumed by such Person; (ix) all Disqualified Capital Stock of such Person; (x) the principal balance outstanding under any asset securitization programs, synthetic leases, sale and leaseback transactions or other similar obligations arising with respect to any other transaction which is the functional equivalent of or takes the place of borrowing but which does not constitute a liability on the consolidated balance sheet of such Person and its subsidiaries; and (xi) net termination obligations under any Hedge Agreement (other than to the extent such obligations can be settled in shares of Qualified Capital Stock of such Person); provided, however, that the foregoing shall exclude, in each case, (A) trade payables and accrued expenses incurred in the ordinary course of business on terms customary in the trade, (B)

operating lease and license obligations incurred in the ordinary course of business that are not capitalized, (C) severance, deferred compensation, pension, health and welfare retirement and equivalent benefits to current or former employees, directors or managers of such Person and its Subsidiaries, and (D) obligations in respect of non-competition agreements or similar arrangements. Notwithstanding the foregoing, equity derivatives permitted under this Agreement, and any obligations thereunder, shall not constitute Indebtedness.

"Indemnified Taxes" means (a) Taxes, other than Excluded Taxes, imposed on or with respect to any payment made by or on account of any obligation of the Borrower under any Credit Document, and (b) to the extent not otherwise described in clause (a), Other Taxes.

"Intellectual Property" means (i) all inventions (whether or not patentable and whether or not reduced to practice), all improvements thereto, and all patents, patent applications, and patent disclosures, together with all reissues, continuations, continuations-in-part, divisions, revisions, extensions, and reexaminations thereof, (ii) all trademarks, service marks, trade dress, logos, trade names, and corporate names, together with all goodwill associated therewith, and all applications, registrations, and renewals in connection therewith, (iii) all copyrightable works and all copyrights (registered and unregistered), (iv) all trade secrets and confidential information (including financial, business and marketing plans and customer and supplier lists and related information), (v) all computer software and software systems (including data, databases and related documentation), (vi) all Internet web sites and domain names, (vii) all technology, know-how, processes and other proprietary rights and (viii) all licenses or other agreements to or from third parties regarding any of the foregoing.

"Interest Coverage Ratio" means, as of the last day of any Test Period, the ratio of
(i) EBITDA for such Test Period to (ii) Cash Interest Expense paid or payable during such Test Period.

"Interest Rate" has the meaning set forth in **Section 2.3**. "Investments" has the meaning set forth in **Section 6.4**.

"Lien" means any interest in property securing an obligation owed to, or claim by, a Person other than the owner of such property, whether such interest arises by virtue of contract, statute or common law, including the lien or security interest arising from a mortgage, security agreement, pledge, lease, conditional sale, consignment or bailment for security purposes or from attachment, judgment or execution and any easement, covenant, restriction, condition, reservation, encroachment, right-of-way, lease or other title exception or encumbrance affecting any property.

"Major Transaction" means:

(i) a consolidation, merger, exchange of shares, recapitalization, reorganization, business combination or other event (A) following which the holders of Common Stock immediately preceding such consolidation, merger, exchange, recapitalization, reorganization, combination or event either (x) no longer hold a majority of the shares of Common Stock or
(y) no longer have the ability to elect a majority of the board of directors of the Borrower or
(B) as a result of which shares of Common Stock shall be changed into (or the shares of

Common Stock become entitled to receive) the same or different number of shares of the same or another class or classes of stock or securities of another entity other than a merger effected solely for purposes of changing the Borrower's state of incorporation or domicile;

(ii) the sale or transfer in one or a series of transactions of all or substantially all of the assets of the Borrower on a consolidated basis to any Person other than a Wholly Owned Subsidiary Guarantor;

(iii) any Person or group, other than the Borrower and its Subsidiaries or any employee benefit plan of the Borrower or its Subsidiaries, files a Schedule 13D or Schedule TO (or any successor schedule, form or report) pursuant to the Exchange Act disclosing such Person has become the beneficial owner of shares with a majority of the total voting power of all outstanding voting securities that are entitled to vote generally in the election of the Borrower's board of directors;

(iv) the liquidation, dissolution or winding up of the Borrower; or

(v) the occurrence of a "change of control," "fundamental change" or other similar event or condition that results in the Borrower being required to repurchase, redeem or retire the Convertible Notes in whole or in part pursuant to the terms of the indenture or other governing instrument for the Convertible Notes.

"Material Adverse Effect" means (i) a material adverse change in, or a material adverse effect on, the operations, business, assets, properties, liabilities (actual or contingent) or financial condition of the Consolidated Entities, taken as a whole; (ii) any material adverse effect on the rights and remedies, in the aggregate, of the Collateral Agent or the Purchasers under the Credit Documents, or the ability of the Credit Parties, taken as a whole, to perform the Obligations; or (iii) a material adverse effect upon the validity or enforceability against any Credit Party of the Credit Documents to which it is a party.

"Market Capitalization" shall mean, as of any date of determination, the product of (x) the number of issued and outstanding shares of Common Stock as of such date (exclusive of any shares of common stock issuable upon the exercise of options or warrants or conversion of any convertible securities), multiplied by (y) the last closing bid price per share for the Borrower's shares of Common Stock as of the preceding Trading Day on the Current Market.

"Material Contract" means (i) each material supply agreement, manufacturing agreement, agreement to in-license Intellectual Property and similar agreement related to Heplisav-B; (ii) each Heplisav-B In License; and (iii) each "material contract" (within the meaning of Item 601(b)(10) of Regulation S-K under the Securities Act but excluding any employment or management contracts or compensatory plan, contracts or other arrangements described in Item 601(b)(10)(iii) of Regulation S-K under the Securities Act and excluding any real property leases) to which any Consolidated Entity is a party.

"Material Products" means (i) Heplisav-B and (ii) any other pharmaceutical product sold by any Consolidated Entity that accounts for 10% or more of revenue for the Test Period most recently ended for which the Borrower has filed financial statements with the SEC (as determined on a consolidated basis in accordance with GAAP).

"Maturity Date" means the fifth anniversary of the Purchase Date.

"Mortgage" means any mortgage, deed of trust, deed to secure debt, collateral assignment of lease or similar agreement or instrument pursuant to which any Credit Party grants in favor of the Collateral Agent, or a trustee for the benefit of the Collateral Agent, a security interest in and Lien upon any fee or leasehold interest in any real property owned by any Credit Party.

"Multiemployer Plan" means any "multiemployer plan" within the meaning of Section 4001(a)(3) of ERISA, with respect to which any current member of the Controlled Group has any obligation to contribute.

"Net Sales" means, without duplication, the gross amount invoiced by or on behalf of the Consolidated Entities or any direct or indirect assignee or licensee of the Consolidated Entities for Heplisav-B Units, sold globally in *bona fide*, arm's length transactions, less customary deductions determined without duplication in accordance with the selling Person's customary accounting methods as generally and consistently applied for: (i) cash or terms discounts, (ii) sales, use and value added taxes (if and only to the extent included in the gross invoice amount),
(iii) reasonable and customary accruals for third party rebates and chargebacks, and (iv) returns. "Notes" has the meaning set forth in the Background Statement above.

"Obligations" means (i) the Notes and all other loans, advances, indebtedness, liabilities, obligations, covenants and duties owing, arising, due or payable from any Consolidated Entity to the Collateral Agent or the Purchasers of any kind or nature, present or future, arising under this Agreement or any of the other Credit Documents, whether direct or indirect (including those acquired by assignment), absolute or contingent, primary or secondary, due or to become due, now existing or hereafter arising and however acquired; and (ii) all interest (including to the extent permitted by law, all post-petition interest), charges, expenses, fees, attorneys' fees and any other sums payable by any Consolidated Entity to the Collateral Agent or the Purchasers under this Agreement or any of the other Credit Documents.

"OFAC" means the U.S. Department of the Treasury's Office of Foreign Assets Control and any successor thereto.

"Other Connection Taxes" means with respect to any Purchaser, Taxes imposed as a result of a present or former connection between such Purchaser and the jurisdiction imposing such Tax (except connections arising from such Purchaser having executed, delivered, become a party to, performed its obligations or received a payment under, received or perfected a security interest under, engaged in any transaction pursuant to or enforced any Credit Document, or sold or assigned an interest in any Credit Document).

"Other Taxes" means all present or future stamp, court or documentary, intangible, recording, filing or similar Taxes that arise from any payment made under, from the execution, delivery, performance, enforcement or registration of, from the receipt or perfection of a security interest under, or otherwise with respect to, any Credit Document, except any such Taxes that are Other Connection Taxes imposed with respect to an assignment.

"PATRIOT Act" means the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism (USA PATRIOT Act of 2001) and any successor statute.

"PBGC" means the Pension Benefit Guaranty Corporation and any successor thereto. "Permitted Acquisition" has the meaning set forth in **Section 6.6(xiii)**.

"Permitted Liens" has the meaning set forth in **Section 6.3**.

"Person" means an individual, a corporation, a partnership, a limited liability company, an association, a trust or any other entity or organization, including a government or political subdivision or an agency or instrumentality thereof.

"Plan" means an employee pension benefit plan that is covered by Title IV of ERISA or subject to the minimum funding standards under Section 412 of the Code and is maintained by a current member of the Controlled Group for employees of any member of the Controlled Group.

"Prepayment Premium" means, with respect to any prepayment or required prepayment of the principal amount of the Notes (including any mandatory prepayment of the Notes pursuant to **Section 2.7** or acceleration of the Notes pursuant to **Section 7.2(a)**), an amount equal to
(i) 6.5% of the principal amount of Notes to be prepaid, if such prepayment (or required prepayment) occurs on or prior to the third anniversary of the Purchase Date; (ii) 6.0% of the principal amount of the Notes to be prepaid, if such prepayment (or required prepayment) occurs after the third anniversary of the Purchase Date but on or prior to the fourth anniversary of the Purchase Date; and (iii) 3% of the principal amount of the Notes to be prepaid, if such prepayment (or required prepayment) occurs after the fourth anniversary of the Purchase Date but prior to the Maturity Date.

"Principal Market" means any of the New York Stock Exchange, the NYSE MKT , the NASDAQ Global Select Market, the NASDAQ Global Market or the NASDAQ Capital Market.

"Purchase Date" means the date upon which the Notes are purchased pursuant to this Agreement, which shall be the date upon which each of the conditions set forth in **Section 3.2** shall have been satisfied or waived in accordance with the terms of this Agreement.

"Purchaser" means each Person signatory hereto as a "Purchaser" and their respective registered successors and assigns.

"Qualified Capital Stock" means any Capital Stock of a Person that is not Disqualified Capital Stock.

"Recipient" means the Collateral Agent or any Purchaser, as applicable. "Register" has the meaning set forth in **Section 1.4(a)**.

"Regulatory Agency" means a Governmental Authority with responsibility for the approval of the marketing and sale of pharmaceuticals or other regulation of pharmaceuticals.

"Regulatory Approval" means all approvals (including where applicable, pricing and reimbursement approval and schedule classifications), product and/or establishment licenses, registrations or authorizations of any Regulatory Agency necessary for the manufacture, use, storage, import, export, transport, offer for sale or sale of the Material Products by a Consolidated Entity within the United States.

"Related Parties" means, with respect to any Person, such Person's Affiliates and the partners, directors, officers, employees, agents, trustees, administrators, managers, advisors and representatives of such Person and of such Person's Affiliates.

"Required Purchasers" means, prior to the Purchase Date, Purchasers obligated with respect to greater than 50% of the Commitments and, thereafter, Purchasers representing greater than 50% of the outstanding principal amount of the Notes.

"Requirement of Law" means, with respect to any Person, the charter, articles or certificate of organization or incorporation and bylaws or other organizational or governing documents of such Person, and any statute, law, treaty, rule, regulation, order, decree, writ, injunction or determination of any arbitrator or court or other Governmental Authority, in each case applicable to or binding upon such Person or any of its property or to which such Person or any of its property is subject or otherwise pertaining to any or all of the transactions contemplated by this Agreement and the other Credit Documents.

"Restricted Payments" has the meaning set forth in **Section 6.7**.

"Restricted Purchaser" means Deerfield and its Affiliates and any other Purchaser that notifies the Borrower in writing that it wishes to be deemed a Restricted Purchaser.

"Restricted Transferee" means any Person (i) who is a natural Person or (ii) who is listed on **Schedule 1.1A** of the Disclosure Letter.

"Sanctioned Country" means a country subject to a sanctions program identified on the list maintained by OFAC and available at http://www.treas.gov/offices/enforcement/ofac/programs/, or as otherwise published from time to time.

"Sanctioned Person" means (i) a Person named on the list of Specially Designated Nationals or Blocked Persons maintained by OFAC available at http://www.treas.gov/offices/enforcement/ofac/sdn/index.shtml, or as otherwise published from time to time, or (ii)(A) an agency of the government of a Sanctioned Country, (B) an organization controlled by a Sanctioned Country or (C) a Person resident in a Sanctioned Country, to the extent subject to a sanctions program administered by OFAC.

"SEC" means the Securities and Exchange Commission.

"Securities Act" means the U.S. Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

"Security Agreement" means the Pledge and Security Agreement, dated as of the date hereof, between each Credit Party and the Collateral Agent, substantially in the form attached as **Exhibit F** hereto.

"Security Documents" means the Security Agreement, the Collateral Access Agreements, the Deposit Account Control Agreements, and all other pledge or security agreements, mortgages, deeds of trust, assignments or other similar agreements or instruments executed and delivered by the Borrower or any of the Borrower's Subsidiaries pursuant to the terms of this Agreement, in each case as amended, modified or supplemented from time to time.

"Solvent" means, with respect to any Person (determined on a consolidated basis) on any particular date, that such Person (i) does not have unreasonably small capital to carry on its business as now conducted and as presently proposed to be conducted, (ii) is able to pay its debts as they become absolute and matured, and (iii) has assets with a present fair saleable value greater than its total stated liabilities and identified contingent liabilities. In computing the amount of identified contingent liabilities at any time, such liabilities shall be computed at the amount that, in light of all the facts and circumstances existing at such time, represents the amount that can reasonably be expected to become an actual or matured liability.

"Subsidiary" means, with respect to any Person, any corporation, partnership, limited liability company, association or other business entity of which such Person owns, directly or indirectly, more than 50% of the voting securities thereof. Unless the context otherwise requires, "Subsidiary" refers to a direct or indirect Subsidiary of the Borrower.

"Subsidiary Guarantor" means any Subsidiary of the Borrower that is a guarantor of the Obligations under the Guaranty (or under another guaranty agreement in form and substance satisfactory to the Purchasers) and has granted to the Collateral Agent, on behalf of the Purchasers, a Lien upon and security interest in its personal property assets pursuant to the Security Agreement. For the avoidance of doubt, no Excluded Foreign Subsidiary shall be a Subsidiary Guarantor.

"Taxes" means all present or future taxes, levies, imposts, duties, deductions, withholdings (including backup withholding), assessments, fees or other charges imposed by any Governmental Authority, including any interest, additions to tax or penalties applicable thereto.

"Termination Date" means March 15, 2017.

"Test Period" means a period of four consecutive fiscal quarters of the Borrower (or other Person, as applicable).

"Total Voting Power" means, with respect to any Person, the total number of votes that may be cast in the election of directors or managers, as applicable, of such Person at any meeting of stockholders or members, as applicable, of such Person if all securities entitled to vote in the election of directors or managers, as applicable, of such Person (on a fully diluted basis, assuming the exercise, conversion or exchange of all rights, warrants, options and securities exercisable for, exchangeable for or convertible into, such voting securities) were present and voted at such meeting (other than votes that may be cast only upon the happening of a contingency).

"Trading Day" means any day on which the Common Stock is traded for at least six hours on the Current Market.

"UCC" means the Uniform Commercial Code as the same may be in effect from time to time in the State of New York; provided that if, by reason of applicable law, the validity, priority or perfection of any security interest in any collateral granted under any Credit Document is governed by the Uniform Commercial Code as in effect in another jurisdiction, then, as to the validity, priority or perfection, as the case may be, of such security interest, "UCC" means the Uniform Commercial Code as in effect from time to time in such other jurisdiction.

"Unrestricted Cash" means, as of any date of determination, the sum of all the money, currency or credit balances held by the Credit Parties and maintained in a deposit account in the United States (and to the extent that the date of determination is on or after the Purchase Date that is subject to a Deposit Account Control Agreement).

"U.S. Person" means any Person that is a "United States person" as defined in Section 7701(a)(30) of the Code.

"U.S. Tax Compliance Certificate" has the meaning specified in **Section 2.11(d)**. "Wholly Owned" means, with respect to any Subsidiary of any Person, that 100% of the outstanding Capital Stock of such Subsidiary (other than directors' qualifying shares) is owned, directly or indirectly, by such Person.

1.2 Accounting Terms. Except as specifically provided otherwise in this Agreement, all accounting terms used herein that are not specifically defined have the meanings customarily given them in accordance with GAAP as in effect from time to time, provided that if the Borrower notifies the Purchasers that the Borrower requests an amendment to any provision hereof to eliminate the effect of any change occurring after the date hereof in GAAP or in the application thereof on the operation of such provision, regardless of whether any such notice is given before or after such change in GAAP or in the application thereof, then such provision shall be interpreted on the basis of GAAP as in effect and applied immediately before such change shall have become effective until such notice shall have been withdrawn or such provision amended in accordance herewith; provided, further, that all terms of an accounting or financial nature (including the definitions of Capital Lease Obligations and Indebtedness) shall be construed without giving effect to (i) any changes to the current GAAP accounting model for leases of the type described in the FASB and IASB joint exposure draft published on August 17, 2010 entitled "Leases (Topic 840)" or otherwise arising out of the FASB project on lease accounting described in such exposure draft, (ii) any election under Accounting Standards Codification 825-10-25 (previously referred to as Statement of Financial Accounting Standards 159) (or any other Accounting Standards Codification or Financial Accounting Standard having a similar result or effect) to value any Indebtedness or other liabilities of the Borrower or any Subsidiary at "fair value," as defined therein and (iii) any treatment of Indebtedness in respect of convertible debt instruments under Accounting Standards Codification 470-20 (or any other Accounting Standards Codification or Financial Accounting Standard having a similar result or effect) to value any such Indebtedness in a reduced or bifurcated manner as described therein, and such Indebtedness shall at all times be valued at the full stated principal amount thereof.

1.3 Interpretation. Whenever the context so requires, the neuter gender includes the masculine and feminine, the singular number includes the plural, and vice versa. The words "include," "includes" and "including" shall in any event be deemed to be followed by the phrase "without limitation." All references in this Agreement to "this Agreement", "herein", "hereunder", "hereof" shall be deemed to refer to this Agreement in its entirety (including the exhibits (and their annexes) and schedules hereto) unless the context requires otherwise. All references in this Agreement to Articles, Sections, Exhibits, Annexes and Schedules shall be construed to refer to Articles and Sections of, and Exhibits, Annexes and Schedules to, this Agreement unless the context requires otherwise. Except as otherwise provided herein, any definition of or reference to any agreement, instrument or other document shall be construed as referring to such agreement, instrument or other document as from time to time amended, restated, supplemented or otherwise modified in accordance with any restrictions on such amendments, restatements, supplements or modifications set forth herein or in any other Credit Document. Any reference to any law or regulation herein shall, unless otherwise specified, refer to such law or regulation as amended, modified or supplemented from time to time.

1.4 Register.

(a) The Borrower shall establish and maintain at its address referred to in **Section 9.5** (i) a record of ownership (the "Register") in which the Borrower shall register by book entry the interests (including any rights to receive payment of principal and interest hereunder) of each Purchaser in each Note, and any assignment of any such interest, and (ii) accounts in the Register in accordance with its usual practice in which it shall record (A) the names and addresses of the Purchasers (and any change thereto pursuant to this Agreement), (B) the amount of Commitments of, and principal amounts (and stated interest) owing to each Purchaser and
(C) any other payment received by the Purchasers pursuant to the Credit Documents.

(b) Notwithstanding anything to the contrary contained in this Agreement, (i) each Note is a registered obligation, (ii) the right, title and interest of the Purchasers and their assignees in and to the Notes shall be transferable only upon notation of such transfer in the Register and (iii) no assignment thereof or participation therein shall be effective until recorded therein. This **Section 1.4** and **Sections 9.7** and **9.8** shall be construed so that each Note is at all times maintained in "registered form" within the meaning of Sections 163(f), 871(h)(2) and 881(c)(2) of the Code and Section 5f.103-1(c) of the United States Treasury Regulations.

(c) The entries in the Register shall be conclusive absent manifest error, and the Borrower, the Collateral Agent and the Purchasers shall treat each Person whose name is recorded in the Register as a Purchaser (and as the owner of the amounts owing to it under the Notes as reflected in the Register) for all purposes of this Agreement. Information contained in the Register with respect to any Purchaser shall be available for access by such Purchaser at any reasonable time and from time to time upon reasonable prior notice.

ARTICLE II

AMOUNTS AND TERMS OF THE NOTES

2.1 Notes and Commitments; Notice of Purchase.

(a) Each Purchaser severally agrees, subject to and on the terms and conditions set forth in this Agreement, to purchase, a Note from the Borrower on any Business Day (i) on or after the date that is three Business Days after date on which (x) the FDA Approval has been obtained and (y) the Heplisav-B Draw Condition has been satisfied (or the Required Purchasers have waived satisfaction of the Heplisav-B Draw Condition) but (ii) prior to the Termination Date, in a principal amount equal to such Purchaser's Commitment. The Commitments shall be automatically and permanently terminated (A) concurrently with the purchase of the Notes on the Purchase Date, and (B) on the Termination Date. To the extent repaid, the principal amount under Notes may not be re-borrowed.

(b) At least three Business Days prior to the expected Purchase Date, the Borrower shall deliver to the Purchasers a written notice (the "Purchase Notice"), which notice shall be irrevocable, shall be substantially in the form of **Exhibit D** hereto and shall specify (1) the account(s) to which the proceeds of the Notes are to be disbursed pursuant to **Section 2.9** and (2) the requested Purchase Date.

2.2 Notes. The Notes shall be payable to the applicable Purchaser in an amount equal to the principal amount of such Purchaser's Commitment. The terms of this Agreement shall be incorporated by reference into the Notes as if set forth therein and, in the event of any conflict between the terms of this Agreement and the Notes, the terms of this Agreement shall control.

2.3 Interest.

(a) All outstanding principal amounts of the Notes shall bear interest at a rate per annum equal to 10.375% per annum (the "Interest Rate").

(b) Interest on the outstanding principal balance of each Note shall be due and payable (i) on the first Business Day of each March, June, September and December, commencing with the first such date after the Purchase Date (each an "Interest Payment Date"), and (ii) on each date when all or any amount of the unpaid principal balance of each such Note shall be due (whether at maturity, by acceleration, prepayment or otherwise), but only to the extent accrued and only with respect of the principal amount being paid.

(c) Interest on the Notes and fees shall be computed on the basis of a 360-day year and the actual number of days elapsed.

(d) If the Borrower shall default in the payment of any principal of or interest on any Note (in the case of interest, beyond the grace period applicable pursuant to **Section 7.1(a)(ii)**), by acceleration or otherwise (after expiration of all applicable grace periods), then, until such defaulted amount shall have been paid in full, all such overdue amounts shall bear interest (after as well as before judgment) at a rate per annum equal to the Interest Rate plus 10.00% per annum (the "Default Rate").

(e) Nothing contained in this Agreement or the Notes shall be deemed to establish or require the payment of interest to the Purchasers at a rate in excess of the maximum rate permitted by applicable law. In the event that the rate of interest required to be paid under this Agreement or the Notes exceeds the maximum rate permitted by applicable law, the rate of interest required to be paid hereunder and under the Notes shall be automatically reduced to the

maximum rate permitted by applicable law and any amounts collected in excess of the permissible amount shall be deemed a prepayment of principal of the Notes.

2.4 Purchase Price and Fees.

(a) The purchase price for the Notes shall be 100% of the principal amount thereof.

(b) As additional consideration for the Commitments, the Borrower shall pay the following fees to the Purchasers:

(i) An amount equal to 1.0% of the Commitment, payable in cash on the date of this Agreement;

(ii) An amount equal to 1.0% of the Commitments (such amount, the "Approval Fee Amount"), payable on the third Trading Day after the later of (x) the announcement of the FDA Approval (such announcement, the "Approval Announcement") and (y) satisfaction (or waiver by the Required Purchasers) of the Heplisav-B Draw Condition, which amount may be paid either (1) in cash or (2) by delivering to the Purchasers a number of shares of Common Stock equal to (x) the Approval Fee Amount divided by (y) the arithmetic average of the closing price per share of the Common Stock for the Trading Day immediately prior to the Approval Announcement and the closing price per share of the Common Stock for the Trading Day immediately following the Approval Announcement, rounded up to the nearest whole number (for the avoidance doubt, the parties agree that the shares of Common Stock delivered to the Purchasers under this section need not be Freely Tradeable Shares); provided, however, that the Borrower may not pay the Approval Fee Amount by delivering shares of Common Stock (A) during the occurrence of a Delisting Event, (B) at any time following a Major Transaction, (C) at any time following the occurrence, and during the continuance, of an Event of Default, (D) from and after the first date on which the Borrower determines it is or may be required to withhold any Taxes as a result of this **Section 2.4(b)(ii)** and a payment in the form contemplated by clause (2) hereof, or
(E) unless all material information regarding the Borrower has been publicly filed in a report pursuant to the Exchange Act or is otherwise publicly disclosed;

(iii) An amount equal to 1.5% of the Commitments, payable in cash on December 20, 2016 if the FDA Approval has not occurred prior to such date (the "Grace Fee");

(iv) In the event that the Purchase Date occurs any time after December 29, 2016 but on or prior to the Termination Date, an amount in cash equal to the amount of interest that would have accrued from, and including, such date to, but excluding the Purchase Date on $100,000,000, minus the Grace Fee, payable in cash on the Purchase Date; and

(v) If the Borrower fails to issue Notes in an aggregate principal amount equal to the Purchasers' aggregate Commitments within 10 Business Days of obtaining the FDA Approval and satisfying the Heplisav-B Draw Condition (or within 10 Business Days of obtaining the FDA Approval if the satisfaction of the Heplisav-B Draw

Condition shall have been waived by the Required Purchasers) (such 10th Business Day, the "Draw Failure Date") other than as a result of the Termination Date having occurred or solely as a result of the action or inaction of the Purchasers, the Borrower shall pay to the Purchasers an amount equal to $15,000,000, payable in cash, on the fifth Business Day after the Draw Failure Date; provided, that the Borrower will have no obligation to pay the aforesaid amount to the Purchasers if a Force Majeure Event occurs after the Effective Date but prior to the Draw Failure Date and is continuing on the Draw Failure Date. For the avoidance of doubt, the payment of this fee shall be the sole remedy of the Purchasers for the occurrence of a Draw Failure Date.

2.5 Maturity of Notes. If not sooner paid, the outstanding principal amount of the Notes and all accrued (and theretofore unpaid) interest shall be due and payable on the Maturity Date.

2.6 Optional Prepayments.

(a) The Borrower shall have the right to prepay the Notes at any time or from time to time, in whole or in part, together with accrued (and theretofore) unpaid interest on the principal amount prepaid plus (i) the applicable Prepayment Premium, and (ii) if such prepayment is prior to the third anniversary of the Purchase Date, an additional amount equal to the amount of interest that would have accrued from, and including, the date of prepayment to, but excluding, the third anniversary of the Purchase Date on the principal amount of the Notes outstanding immediately prior to such prepayment.

(b) Any prepayment in part pursuant to this **Section 2.6** must be made in a minimum principal amount of $5,000,000. If the Borrower wishes to make such a prepayment, it shall give the Purchasers notice in writing to that effect not later than 5 Business Days (or such shorter period as agreed to by the Required Purchasers) prior to the date of the prepayment, specifying the date on which the prepayment is to be made and the principal amount to be prepaid. Such notice shall constitute the Borrower's irrevocable commitment to prepay that amount on that date, together with accrued (and theretofore) unpaid interest on the principal amount prepaid to but excluding the prepayment date plus, if applicable, the Prepayment Premium and any additional amounts owed under clause (ii) of **Section 2.6(a)**; provided, that any such notice with respect to a prepayment under **Section 2.6(a)** may be contingent upon the consummation of a financing, Major Transaction or other specified event.

2.7 Major Transaction Redemption. If the Borrower gives (or is required to give) the Purchasers notice of a Major Transaction pursuant to **Section 5.2(b)**, the Required Purchasers may, by written notice to the Borrower, require the Borrower to prepay the Notes in whole. Such prepayment notice shall be delivered to the Borrower at least 10 Business Days prior to the effective date of such Major Transaction or, in the event that notice of such Major Transaction is given by the Borrower less than 20 Business Days prior to the effective date of such Major Transaction, at least 7 calendar days prior to such effective date and shall specify the date of prepayment, which (x) shall be a Business Day and (y) may not be earlier than the date of consummation of such Major Transaction, but may not be a date later than the 20th Business Day after the effective date of such Major Transaction. The amount payable by the Borrower in connection with such prepayment shall be equal to (i) the aggregate outstanding principal

amount of the Notes, together with accrued (and theretofore) unpaid interest plus (ii) if applicable, the Prepayment Premium, and (iii) if such prepayment is prior to the third anniversary of the Purchase Date, the amount of interest that would have accrued from, and including, the date of prepayment to, but excluding, the third anniversary of the Purchase Date on the principal amount of the Notes outstanding immediately prior to such prepayment.

2.8 General Provisions as to Payments; Payments in Shares. Any payments and other amounts owing under this Agreement shall be made at the applicable Purchaser's address as set forth in **Section 9.5**, prior to 11:00 a.m., New York City time, on the date when due, unless otherwise designated by the Purchasers in writing. Each payment hereunder shall be applied

(i) first, to the reasonable documented and out-of-pocket costs and expenses of the Purchasers and Collateral Agent (allocated as reasonably determined by the Collateral Agent and, without prejudice to the Borrower's obligations pursuant to **Section 9.1**, invoiced to the Borrower at least one Business Day prior to the date of the applicable payment), (ii) second, to accrued interest, (iii) third, to the Prepayment Premium, if any, (iv) fourth, to principal, and (v) fifth, to any remaining amounts then due and payable under the Credit Documents.

2.9 Disbursement of Note Proceeds. The Borrower hereby authorizes and directs the Purchasers to disburse, for and on behalf of the Borrower and for the Borrower's account, the proceeds of the Notes made by the Purchasers pursuant to this Agreement (i) to such Person or Persons as the Borrower shall direct in writing and (ii) to pay the Purchasers any fees pursuant to **Section 2.4** and any reasonable and documented out-of-pocket expenses payable pursuant to **Section 9.1**; provided that, without prejudice to the Borrower's obligations pursuant to **Section 9.1**, such costs and expenses shall have been invoiced to the Borrower at least one Business Day prior to the Purchase Date.

2.10 Use of Proceeds. The proceeds of the Notes shall be used by the Borrower solely

(i) to pay fees and expenses in connection with the transactions contemplated by this Agreement, and (iii) for general corporate purposes.

2.11 Taxes.

(a) Any and all payments hereunder or under any other Credit Document by the Credit Parties shall be made, in accordance with this **Section 2.11**, free and clear of and without deduction for any and all present or future Taxes except as required by applicable law. If any Credit Party shall be required by applicable law to deduct or withhold any Taxes from or in respect of any sum payable hereunder or under any other Credit Document, (i) such Credit Party shall make such deduction or withholding, (ii) such Credit Party shall pay the full amount deducted or withheld to the relevant Governmental Authority in accordance with applicable law, and (iii) to the extent that the deduction or withholding is made on account of any Indemnified Tax, the sum payable by the applicable Credit Party shall be increased by as much as shall be necessary so that after making all required deduction or withholding (including deduction or withholding for Taxes applicable to additional sums payable under this **Section 2.11**), each Purchaser shall receive an amount equal to the sum it would have received had no such deduction or withholding for Indemnified Taxes been made (any and all such additional amounts payable shall hereinafter be referred to as the "Additional Amounts"). Within thirty (30) days after the date of any payment of such Taxes by the applicable Credit Party, such Credit Party

shall furnish to the applicable Purchaser the original or a certified copy of a receipt (if any is provided to such Credit Party) evidencing payment thereof or other evidence of such payment reasonably satisfactory to such Purchaser.

(b) The Borrower agrees to pay and authorizes each Purchaser to pay in its name, all Other Taxes. If the Borrower directly pays such Other Taxes, within 30 days after the date of any payment of Other Taxes the Borrower shall furnish to the applicable Purchaser the original or a certified copy of a receipt (if any is provided to the Borrower) evidencing payment thereof or other evidence of such payment reasonably satisfactory to such Purchaser.

(c) Without duplication with respect to any Additional Amounts, the Credit Parties shall reimburse and indemnify, within 10 days after receipt of demand therefor, each Purchaser for all Indemnified Taxes (including all Indemnified Taxes imposed on amounts payable under this **Section 2.11(c)**) paid or payable by such Purchaser , whether or not such Indemnified Taxes were correctly asserted; provided, that the Credit Parties shall not be required to compensate any Purchaser pursuant to this **Section 2.11(c)** for any Indemnified Taxes incurred more than 180 days prior to the date that such Purchaser notifies the Borrower in writing of the increased costs and of Purchaser's intention to claim compensation thereof; provided further, that if circumstances giving rise to such Indemnified Taxes is retroactive, then the 180-day period referred to above shall be extended to include the period of retroactive effect thereof. A certificate of the applicable Purchaser(s) setting forth the amounts to be paid thereunder and delivered to Borrower shall be conclusive, absent manifest error.

(d) At the time or times reasonably requested by the Borrower, any Purchaser that is legally entitled to an exemption from or reduction of withholding Tax with respect to payments made under any Credit Document shall deliver to the Borrower such properly completed and executed documentation reasonably requested by the Borrower as will permit such payments to be made without withholding or at a reduced rate of withholding. In addition, any Purchaser, if reasonably requested by the Borrower, shall deliver such other documentation prescribed by applicable law or reasonably requested by the Borrower as will enable the Borrower to determine whether or not such Purchaser is subject to backup withholding.

(i) Without limiting the generality of the foregoing:

(A) Each Purchaser that is a U.S. Person for United States federal income tax purposes shall, on or before the date on which the Purchaser becomes a party to this Agreement, provide to Borrower a properly completed and executed IRS Form W-9 certifying that such Purchaser is not subject to backup withholding tax.

(B) Each Purchaser that is not a United States person for United States federal income tax purposes (a "Foreign Purchaser") and is entitled to an exemption from or reduction of United States withholding tax with respect to payments under this Agreement shall, on or before the date on which the Purchaser becomes a party to this Agreement, provide Borrower with a properly completed and executed IRS Form W 8ECI, W-8BEN, W-BEN-E, W-8IMY or other applicable forms (together with any required supporting documentation), or

any other applicable certificate or document reasonably requested by the Borrower, and, if such Foreign Purchaser is relying on the portfolio interest exception of Section 871(h) or Section 881(c) of the Code (or any successor provision thereto), shall also provide the Borrower with a certificate (a "U.S. Tax Compliance Certificate") representing that such Foreign Purchaser is not a "bank" for purposes of Section 881(c) of the Code (or any successor provision thereto), is not a 10% shareholder of the Borrower described in Section 871(h)(3)(B) of the Code (or any successor provision thereto), and is not a controlled foreign corporation receiving interest from a related person (within the meaning of Sections 881(c)(3)(C) and 864(d)(4) of the Code, or any successor provisions thereto) in the form set forth in **Exhibit G-1**. If the Foreign Purchaser is a partnership and one or more direct or indirect partners of such Foreign Purchaser are claiming the portfolio interest exemption, such Foreign Purchaser may provide a U.S. Tax Compliance Certificate on behalf of such direct or indirect Partner in the form set forth in **Exhibit G-2**.

(ii) Each Purchaser shall provide new forms or certifications (or successor forms) as reasonably requested by the Borrower from time to time, and shall notify the Borrower in writing within a reasonable time after becoming aware of any event requiring a change in the most recent forms or certifications previously delivered by such Purchaser to the Borrower.

(e) If a payment to a Purchaser under this Agreement would be subject to United States withholding tax imposed by FATCA if such Purchaser were to fail to comply with the applicable reporting requirements of FATCA, such Purchaser shall deliver to Borrower, at the times prescribed by law and as reasonably requested by Borrower, such documentation prescribed by applicable law and such documentation reasonably requested by the Borrower as may be necessary in order for Borrower to comply with its obligations under FATCA and to determine that such Purchaser has or has not complied with its obligations under FATCA or to determine the amount to deduct and withhold from such payment.

(f) If a Purchaser determines in its sole discretion, exercised in good faith, that it has received a refund from a Governmental Authority relating to Taxes in respect of which the applicable Credit Party paid Additional Amounts or made a payment pursuant to **Sections 2.11(b)** or **2.11(c)** then, provided that no Event of Default has occurred and is continuing, such Purchaser shall promptly pay such refund (limited to the amount paid by the Credit Party under **Section 2.11** with respect to the Taxes refunded) to the Credit Party, net of all out-of-pocket expenses (including Taxes) of such Purchaser incurred in obtaining such refund or making such payment; provided that the Credit Party, upon the request of such Purchaser, agrees to repay the amount paid over to the Credit Party (plus any penalties, interest or other charges imposed by the relevant Governmental Authority) to such Purchaser if such Purchaser is required to repay such refund to such Governmental Authority. Notwithstanding anything to the contrary in this **Section 2.11(f)**, in no event shall a Purchaser be required to pay any amount to the Credit Party pursuant to this **Section 2.11(f)**, the payment of which would place the Purchaser in a less favorable net after-Tax position than the Purchaser would have been in if the Tax subject to indemnification and giving rise to such refund had not been deducted, withheld or otherwise imposed and the indemnification payments or Additional Amount with respect to such Tax had

never been paid. This paragraph shall not be construed to require any Purchaser to make available its Tax returns (or any other information relating to its Taxes that it deems confidential) to any Credit Party or any other Person.

2.12 Other Additional Costs. In the event that any applicable Change in Law:

(a) imposes, modifies or holds applicable any reserve, capital requirement, special deposit, compulsory loan or similar requirements against assets held by, or deposits or other liabilities in or for the account of, advances or loans by, or other credit extended by, or any other acquisition of funds by, any Purchaser; or

(b) imposes on any Purchaser any other condition (other than Indemnified Taxes or Excluded Taxes); and the result of any of the foregoing is to increase the cost to such Purchaser (as determined by such Purchaser in good faith using calculation methods customary in the industry) of making, renewing or maintaining any extension of credit hereunder or to reduce any amount receivable in respect thereof or to reduce the rate of return on the capital of such Purchaser or any Person controlling such Purchaser, then, in any such case, Borrower shall promptly pay to such Purchaser, upon its receipt of the certificate described below, any additional amounts necessary to compensate such Purchaser for such additional cost or reduced amounts receivable or rate of return as reasonably determined by such Purchaser with respect to this Agreement or the Notes purchased hereunder. If a Purchaser becomes entitled to claim any additional amounts pursuant to this **Section 2.12**, it shall promptly notify Borrower of the event by reason of which it has become so entitled, and a certificate as to any additional amounts payable pursuant to the foregoing sentence containing the calculation thereof in reasonable detail submitted by such Purchaser to Borrower shall be conclusive in the absence of manifest error. Failure or delay on the part of a Purchaser to demand compensation for any increased costs or reduction in amounts received or receivable or reduction in return on capital under this **Section**
2.12 shall not constitute a waiver of a Purchaser's right to demand such compensation; provided that Borrower shall not be under any obligation to compensate any Purchaser under this **Section**
2.12 with respect to increased costs or reductions with respect to any period prior to the date that is 180 days prior to the date of the delivery of the notice required pursuant to the foregoing provisions of this paragraph; provided further that the foregoing limitation shall not apply to any increased costs or reductions arising out of the retroactive application of any Change in Law within such 180-day period.

2.13 Pro Rata Treatment.

(a) The purchase of Notes on the Purchase Date shall be made by the Purchasers pro rata on the basis of their respective Commitments. All payments on account of principal of or interest on any Notes, fees or any other Obligations owing to or for the account of any one or more Purchasers shall be apportioned ratably among such Purchasers in proportion to the amounts of such principal, interest, fees or other Obligations owed to them respectively.

(b) If any Purchaser shall, by exercising any right of setoff (including in accordance with **Section 7.2(c)**) or counterclaim or otherwise, obtain payment in respect of any principal of or interest on any of its Notes or other Obligations hereunder resulting in such Purchaser's receiving payment of a proportion of the aggregate amount of its Notes and accrued interest

thereon or other such Obligations greater than its pro rata share thereof as provided herein, then the Purchaser receiving such greater proportion shall (i) notify the other Purchasers of such fact and (ii) purchase (for cash at face value) participations in the Notes and such other Obligations of the other Purchasers, or make such other adjustments as shall be equitable, so that the benefit of all such payments shall be shared by the Purchasers ratably in accordance with the aggregate amount of principal of and accrued interest on their respective Notes and other amounts owing them; provided that (A) if any such participations are purchased and all or any portion of the payment giving rise thereto is recovered, then such participations shall be rescinded and the purchase price restored to the extent of such recovery, without interest, and (B) the provisions of this **Section 2.13(b)** shall not be construed to apply to (x) any payment made by the Borrower pursuant to and in accordance with the express terms of this Agreement or (y) any payment obtained by a Purchaser as consideration for the assignment of or sale of a participation in any of its Notes to any assignee or participant, other than to the Borrower or any Subsidiary thereof (as to which the provisions of this **Section 2.13(b)** shall apply). The Borrower consents to the foregoing and agrees, to the extent it may effectively do so under applicable law, that any Purchaser acquiring a participation pursuant to the foregoing arrangements may exercise against the Borrower rights of setoff and counterclaim with respect to such participation as fully as if such Purchaser were a direct creditor of the Borrower in the amount of such participation. If under any applicable bankruptcy, insolvency or similar law, any Purchaser receives a secured claim in lieu of a setoff to which this **Section 2.13(b)** applies, then such Purchaser shall, to the extent practicable, exercise its rights in respect of such secured claim in a manner consistent with the rights of the Purchasers entitled under this **Section 2.13(b)** to share in the benefits of any recovery on such secured claim.

ARTICLE III

CONDITIONS TO EFFECTIVENESS AND PURCHASE OF NOTES

3.1 Conditions to Effectiveness. This Agreement shall be effective when the Purchasers shall have received from each of the parties hereto, a duly executed counterpart of this Agreement, dated as of the date hereof, signed by such party.

3.2 Conditions to Purchase of the Notes. The obligation of each Purchaser to purchase any Notes hereunder is subject to the satisfaction of the following conditions precedent:

(a) Credit Documents. The Collateral Agent shall have received the following, each dated as of the Purchase Date (unless otherwise specified) and in such number of copies as the Collateral Agent shall have requested:

(i) a duly executed Note for the account of each Purchaser;

(ii) the Guaranty, duly completed and executed by each Subsidiary of the Borrower (other than Excluded Foreign Subsidiaries), in form and substance satisfactory to the Purchasers;

(iii) a pledge agreement with respect to Dynavax GmbH pledging as security for the Obligations65% of the outstanding voting Capital Stock and 100% of the outstanding non-voting Capital Stock of Dynavax GmbH, governed in each case by the

laws of the jurisdiction of organization of Dynavax GmbH, duly completed and executed by the holder(s) of such Capital Stock, in form and substance satisfactory to the Purchasers;

(iv) the Security Agreement, duly completed and executed by each Credit Party, in form and substance satisfactory to the Purchasers;

(v) duly completed and executed grants of security interest in form required by or acceptable to the U.S. Copyright Office or the U.S. Patent and Trademark Office in respect of registered intellectual property included in the collateral granted under the Security Agreement;

(vi) [Reserved];

(vii) the Deposit Account Control Agreements, duly completed and executed by the applicable Credit Party and depository institution, covering each Deposit Account maintained by the Borrower and the Subsidiary Guarantors (other than Excluded Deposit Accounts (as defined in the Security Agreement)), in form and substance satisfactory to the Purchasers;

(viii) a control agreement with respect to each securities account maintained by the Borrower and the Subsidiary Guarantors (other than Excluded Subsidiary Accounts (as defined in the Security Agreement)), in form and substance satisfactory to the Purchasers; and

(ix) an opinion of counsel to the Credit Parties dated as of the Purchase Date and addressed to the Purchasers, in the form agreed on the date hereof with the Required Purchasers.

(b) Notice of Purchase. The Purchasers shall have received a Purchase Notice in accordance with **Section 2.1(b)**.

(c) Officer's Certificate. The Collateral Agent shall have received a certificate, signed by an authorized officer of the Borrower, dated as of the Purchase Date and in form and substance satisfactory to the Purchasers, that all the conditions set forth in this **Section 3.2** shall have been satisfied as required hereunder.

(d) Secretary's Certificate. The Collateral Agent shall have received a certificate of the secretary or an assistant secretary of each Credit Party, dated as of the Purchase Date and in form and substance reasonably satisfactory to the Collateral Agent, certifying (i) that attached thereto is a true and complete copy of the articles or certificate of incorporation, certificate of formation or other organizational document and all amendments thereto of such party, certified as of a recent date by the Secretary of State (or comparable Governmental Authority) of its jurisdiction of organization, and that the same has not been amended since the date of such certification, (ii) that attached thereto is a true and complete copy of the bylaws, operating agreement or similar governing document of such party, as then in effect and as in effect at all times from the date on which the resolutions referred to in clause (iii) below were adopted to and including the date of such certificate, (iii) that attached thereto is a true and complete copy of

resolutions adopted by the board of directors (or similar governing body) of such party, authorizing the execution, delivery and performance of this Agreement and the other Credit Documents to which it is a party, and (iv) as to the incumbency and genuineness of the signature of each officer of such party executing this Agreement or any of such other Credit Documents, and attaching all such copies of the documents described above.

(e) [Reserved].

(f) Good Standings. The Collateral Agent shall have received a certificate as of a recent date of the good standing of each Credit Party as of the Purchase Date, under the laws of its jurisdiction of organization, from the Secretary of State (or comparable Governmental Authority) of such jurisdiction.

(g) Recording and Filing. The Collateral Agent shall have received evidence that UCC financing statements naming the Credit Parties as debtors and the Collateral Agent as secured party and describing the collateral encumbered by the Security Documents have been duly filed in each jurisdiction necessary to perfect the Liens created by the Security Documents.

(h) Stock Certificates. The Collateral Agent shall have received certificates evidencing the Capital Stock being pledged under the Security Agreement as of the Purchase Date and undated assignments separate from certificate for any such certificate, duly executed in blank; provided that no stock certificate shall be required to the extent such Capital Stock is not certificated.

(i) Insurance. The Collateral Agent shall have received certificates of insurance evidencing the insurance coverages maintained by the Credit Parties, naming the Collateral Agent as loss payee or additional insured, as its interests may appear, and providing that the applicable insurer will provide to the Collateral Agent written notice no less than 30 days prior to any cancellation, termination or modification of such coverage.

(j) Representations and Warranties. Each of the representations and warranties made by the Credit Parties shall be true and correct in all material respects on and as of the Purchase Date with the same effect as if made on and as of such date (except to the extent any such representation or warranty relates to a specific date, in which case such representation or warranty shall be true and correct as of such date.

(k) No Default. No Default shall have occurred and be continuing on the Purchase Date or after giving effect to the purchase of Notes to be made on such date.

(l) Fees; Expenses. The Borrower shall have paid all reasonable documented and out-of-pocket expenses required hereunder or under any other Credit Document to be paid on or prior to the Purchase Date (including reasonable fees and expenses of counsel) in connection with this Agreement and the other Credit Documents.

ARTICLE IV REPRESENTATIONS AND WARRANTIES

The Borrower represents and warrants to the Collateral Agent and the Purchasers as follows:

4.1 Corporate Organization and Power. Each Credit Party (i) is a corporation or a limited liability company duly organized or formed, validly existing and in good standing under the laws of the jurisdiction of its incorporation or formation, as the case may be; (ii) is duly qualified or licensed to do business in every other jurisdiction where the nature of its business or its properties makes such qualification or licensing necessary (except where the failure to be so qualified or licensed would not reasonably be expected to have a Material Adverse Effect);
(iii) has full corporate or limited liability company power and authority to execute, deliver and perform the Credit Documents to which it is or will be a party, to own and hold its property and to engage in its business as presently conducted; (iv) has or will have prior to the Purchase Date all material Regulatory Approvals necessary to sell Heplisav-B within the United States; and (v) has all other governmental licenses, permits, franchises, certificates, inspections, authorizations, consents and approvals required to carry on its business as it is now being conducted, except as would not reasonably be expected to have a Material Adverse Effect.

4.2 Corporate Authority; No Conflict with Other Instruments or Law. The execution, delivery and performance of this Agreement and the other Credit Documents and the consummation of the transactions contemplated hereby and thereby (i) are within the corporate or limited liability company power and authority of each Credit Party; (ii) have been duly authorized by all necessary corporate or limited liability company action on the part of each Credit Party; (iii) do not and will not conflict with, contravene or violate any provision of, or result in a breach of or default under, or require the waiver (not already obtained) of any provision of or the consent (not already given) of any Person under the terms of any Credit Party's articles or certificate of incorporation or formation, its bylaws or operating agreement, or other applicable formation or organizational documents, or any Material Contract (other than to the extent of customary non-assignment provisions permitted under **Section 6.14**); (iv) will not violate, conflict with, give rise to any liability under, or constitute a default under any Requirement of Law; and (v) will not result in the creation, imposition, or acceleration of any indebtedness or tax or any Lien that is not a Permitted Lien of any nature upon, or with respect to, any Credit Party or any properties thereof.

4.3 Due Execution and Delivery. Each Credit Document to which any Credit Party is a party has been duly executed and delivered to the Purchasers by an officer of such Credit Party who has been duly authorized to perform such acts.

4.4 Enforceability. Each Credit Document to which any Credit Party is a party constitutes the valid and binding obligation of such Credit Party, enforceable against such Credit Party in accordance with its terms, except as enforcement may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws, statutes or rules of general application affecting the enforcement of creditor's rights or general principles of equity.

4.5 Governmental Approval. The execution, delivery and performance of each Credit Document to which any Credit Party is a party and the transactions contemplated thereby do not require any authorization, exemption, consent or approval of, notice to, or declaration or filing with, any Governmental Authority other than those obtained on or before the date hereof and filings required in connection with the perfection of any liens granted pursuant to the Credit Documents.

4.6 Margin Stock. No Consolidated Entity is engaged principally or as one of its important activities in the business of extending credit for the purpose of purchasing or carrying margin stock (within the meaning of Regulation U or X of the Board of Governors of the Federal Reserve System). The execution, delivery and performance of this Agreement and the use of the proceeds of the Notes or any extension of credit hereunder, do not and will not constitute a violation of such Regulations.

4.7 Investment Company. No Credit Party is an "investment company" or a company "controlled" by an "investment company," within the meaning of the Investment Company Act of 1940.

4.8 Litigation. As of the Effective Date, except as disclosed in Item 3 (Legal Proceedings) of the Form 10-K filed by the Borrower for the 2015 fiscal year, there are no suits or proceedings pending or threatened against or affecting any Consolidated Entity and no proceedings before any Governmental Authority are pending or threatened against any such Person of a type that (i) would need to be reported in a Form 8-K, 10-K or 10-Q filed with the SEC pursuant to the Securities Act, (ii) challenges the right of any Consolidated Entity to commercialize, market or distribute any Material Product, or (iii) would reasonably be expected to have a Material Adverse Effect.

4.9 Financial Statements.

(a) The Borrower has filed with the SEC (i) the audited consolidated balance sheets of the Borrower as of December 31, 2015, 2014 and 2013, in each case with the related statements of income, cash flows and stockholders' equity for the fiscal years then ended, together with the opinion of an independent certified public accounting firm thereon, and (ii) the unaudited consolidated balance sheet of the Consolidated Entities as of June 30, 2016 and the related statements of income, cash flows and stockholders' equity for the six-month period then ended. Such financial statements fairly present, in all material respects, the financial position, assets and liabilities of the Consolidated Entities for the respective periods then ended in accordance with GAAP.

(b) Each Credit Party is Solvent.

4.10 No Material Adverse Effect. Since December 31, 2015, there has been no Material Adverse Effect and there exists no event, condition or state of facts that would reasonably be expected to result in a Material Adverse Effect.

4.11 Capitalization; Subsidiaries. **Schedule 4.11** of the Disclosure Letter sets forth (i) all of the Subsidiaries of the Borrower and (ii) as to each Subsidiary (x) the number (and, if applicable, the effect if exercised) of shares, units or other interests of each class of Capital Stock

outstanding and (y) the direct holders of all such Capital Stock and the number of shares, units or other interests held by each. All outstanding shares of Capital Stock of the Borrower and each of its Subsidiaries are duly and validly issued, fully paid and nonassessable. Except for the shares, units and other interests of Capital Stock expressly indicated on **Schedule 4.11** of the Disclosure Letter, there are no shares, units or other interests of Capital Stock of any Subsidiary outstanding or reserved for any purpose. No Consolidated Entity is a party to any partnership, joint venture or similar agreement.

4.12 Laws and Taxes.

(a) Each Consolidated Entity is in compliance with all laws, regulations, rulings, orders, injunctions, decrees, conditions or other requirements applicable to or imposed upon such Credit Party by any law or by any Governmental Authority, except where the failure to be in compliance would not reasonably be expected to result in a Material Adverse Effect. Each Consolidated Entity is in compliance in all material respects with all applicable material Regulatory Approvals.

(b) Each Consolidated Entity has filed all required federal income tax returns and reports that are now required to be filed by it, and all other tax returns (including state, local and foreign tax returns) that are required to be filed by it in connection with any material tax, duty or charge levied, assessed or imposed upon such Person or its assets, including any material unemployment, social security, and real estate taxes. Each Consolidated Entity has paid all federal income Taxes and all other material Taxes (including material state, local and foreign Taxes) now due and payable other than any Tax that is being diligently contested in good faith for which adequate reserves have been established in accordance with GAAP. There is no ongoing audit or examination or, to the knowledge of any Credit Party, other investigation by any Governmental Authority of any material tax liability of any Consolidated Entity, and there is no material unresolved claim by any Governmental Authority concerning the tax liability of any Consolidated Entity for any period for which tax returns have been or were required to have been filed, other than claims for which adequate reserves have been established in accordance with GAAP. No Consolidated Entity has waived or extended or has been requested to waive or extend the statute of limitations relating to the payment of any taxes. Proper and accurate amounts have been withheld by each Consolidated Entity from their respective employees for all periods in all material respects with the Tax, social security and unemployment withholding provisions of applicable laws and such withholdings have been timely paid to the respective Governmental Authorities. No Consolidated Entity has participated in a "listed transaction" within the meaning of Treasury Regulation Section 1.6011-4(b) or has been a member of an affiliated, combined or unitary group other than the group of which a Consolidated Entity is the common parent.

4.13 Environmental Compliance. The Borrower has not generated, used, released, treated, disposed of or stored Hazardous Materials, or otherwise located, in, on or under any property owned, leased or operated by any Consolidated Entity or any portion thereof except in material compliance with all applicable laws, and, to the Borrower's knowledge, no part of the property owned, leased or operated by any Consolidated Entity (now or in the past), including the soil and groundwater located thereon and thereunder, has been contaminated by any Hazardous Material. To the knowledge of Borrower, no property owned, leased or operated by

any Consolidated Entity has been the subject of an environmental audit or assessment, or remedial action.

4.14 Ownership of Properties. As of the Effective Date, no Consolidated Entity owns any real property. Each Consolidated Entity (i) holds interests as lessee under valid leases in full force and effect with respect to all material leased real and personal property used in connection with its business and (ii) has good title to all of its other material properties and assets reflected in the financial statements referred to in **Section 4.9** (except as sold or otherwise disposed of since the date thereof in the ordinary course of business), in each case free and clear of all Liens other than Permitted Liens. **Schedule 4.14** of the Disclosure Letter lists, as of the date hereof, all real property leased and/or licensed by any Credit Party, indicating in each case the identity of the owner, the address of the property, the nature of use of the premises and the nature of such interest (including whether such interest is a license or leasehold).

4.15 Intellectual Property. Each Consolidated Entity owns, or has the right to use, all Intellectual Property reasonably necessary for it to conduct its business as currently conducted or to commercialize, market or distribute any Material Product (including Heplisav-B Units upon FDA Approval). Except as disclosed in the Form 10-K filed by the Borrower for the fiscal year 2015, No claim has been asserted or is pending by any Person challenging or questioning the use of any such Intellectual Property or the validity or effectiveness of any such Intellectual Property, nor does any Credit Party know of any such claim, and, to the knowledge of each Credit Party, the use of such Intellectual Property by does not infringe on the rights of any Person.

4.16 Insurance. The assets, properties and business of the Credit Parties are insured against such hazards and liabilities, under such coverages and in such amounts, as are customarily maintained by prudent companies similarly situated and under policies issued by insurers of recognized responsibility.

4.17 Material Contracts. To the knowledge of the Borrower, each Material Contract is in full force and effect and is enforceable by each Consolidated Entity that is a party thereto in accordance with its terms, except as enforcement may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws, statutes or rules of general application affecting the enforcement of creditor's rights or general principles of equity, and no Consolidated Entity or, to the knowledge of any Consolidated Entity, any other party thereto is in material breach of or default under any Material Contract or has given notice of termination or cancellation of any Material Contract.

4.18 ERISA.

(a) The Borrower and each member of the Controlled Group have fulfilled their obligations under the minimum funding standards of ERISA and the Code with respect to each Plan in all material respects. The Borrower and each member of the Controlled Group are in compliance in all material respects with the presently applicable provisions of ERISA and the Code with respect to the maintenance and operation of each Plan, and have not incurred any material liability to the PBGC or a Plan under Title IV of ERISA with respect to any Plan.

(b) Neither the Borrower nor any member of the Controlled Group has incurred any withdrawal liability with respect to any Multiemployer Plan under Title IV of ERISA, and no such liability is reasonably expected to be incurred.

(c) Neither the Borrower nor any member of the Controlled Group has participated in a non-exempt prohibited transaction, as defined in Section 406 of ERISA or Section 4975(c) of the Code with respect to any Plan, which is reasonably expected to subject the Borrower to any material civil penalty under ERISA or material tax under the Code.

4.19 Labor Relations. No Consolidated Entity is engaged in any unfair labor practice within the meaning of the National Labor Relations Act of 1947. There is (i) no unfair labor practice complaint before the National Labor Relations Board, or grievance or arbitration proceeding arising out of or under any collective bargaining agreement, pending or, to the knowledge of any Credit Party, threatened, against any Consolidated Entity; (ii) no strike, lock- out, slowdown, stoppage, walkout or other labor dispute pending or, to the knowledge of any Credit Party, threatened, against any Consolidated Entity; (iii) to the knowledge of any Credit Party, no petition for certification or union election or union organizing activities taking place with respect to any Consolidated Entity; and (iv) no collective bargaining agreement or Multiemployer Plan covering the employees of any Consolidated Entity.

4.20 No Default. No Default has occurred and is continuing.

4.21 OFAC; Anti-Terrorism Laws.

(a) None of the Borrower, any Subsidiary of the Borrower or, to the knowledge of the Borrower, any Affiliate of the Borrower (i) is a Sanctioned Person, (ii) has more than 10% of its assets in Sanctioned Countries or (iii) derives more than 10% of its operating income from investments in, or transactions with, Sanctioned Persons or Sanctioned Countries. No part of the proceeds of any Note hereunder will be used directly or indirectly to fund any operations in, finance any investments or activities in or make any payments to, a Sanctioned Person or a Sanctioned Country.

(b) Each Consolidated Entity is in compliance in all material respects with the PATRIOT Act. No part of the proceeds of the Notes hereunder will be used, directly or indirectly, for any payments to any governmental official or employee, political party, official of a political party, candidate for political office, or anyone else acting in an official capacity, in order to obtain, retain or direct business or obtain any improper advantage, in violation of the United States Foreign Corrupt Practices Act of 1977.

ARTICLE V AFFIRMATIVE COVENANTS

Until payment in full of all Obligations (other than contingent indemnification obligations), the Borrower will, and will cause its Subsidiaries to:

5.1 Financial and Business Information. Deliver to the Purchasers:

(a) Within 45 days after the close of each fiscal quarter (excluding the last fiscal quarter of each fiscal year) of the Borrower commencing with the fiscal quarter ending September 30, 2016, a consolidated balance sheet of the Consolidated Entities as of the close of such fiscal quarter and consolidated statements of income and cash flows for the Borrower for the fiscal quarter then ended and for that portion of the fiscal year then ended, including the notes to each, all in reasonable detail setting forth in comparative form the corresponding figures for the corresponding period or periods of (or in the case of the balance sheet, as of the end of) the preceding fiscal year, certified by the Borrower's chief or other most senior financial officer as presenting fairly in all material respects the financial condition and results of operations of the Borrower and its consolidated Subsidiaries on a consolidated basis in accordance with GAAP consistently applied, subject only to audit and year-end adjustments and the absence of footnotes;

(b) Within 90 days after the close of each fiscal year of the Borrower, an audited consolidated balance sheet of the Borrower as of the close of such fiscal year and audited consolidated statements of income and cash flows for the Borrower for the fiscal year then ended, including the notes to each, all in reasonable detail setting forth in comparative form the corresponding figures for the preceding fiscal year, accompanied by a report thereon by such certified public accountant containing an opinion that is not qualified with respect to scope limitations imposed by the Borrower to the effect that such consolidated financial statements present fairly in all material respects the financial condition and results of operations of the Borrower and its consolidated Subsidiaries on a consolidated basis in accordance with GAAP consistently applied; and

(c) Within a reasonable time, upon any Purchaser's request, such other information about the financial condition and operations of the Consolidated Entities as the Purchasers may from time to time reasonably request.

Any financial statement, report or notice required to be furnished pursuant to this **Section 5.1** shall be deemed to have been furnished on the date on which and, provided such date is within the period specified, such requirement will be satisfied if, the Borrower files a form, report or other document with the SEC that contains such financial statement or report required hereunder and any officer certification requirement pursuant to this **Section 5.1** with regards to any financial statements shall be satisfied if the Borrower files with the SEC the certifications required by Section 906 of the Sarbanes-Oxley Act of 2002 with respect to such financial statements.

5.2 Notice of Certain Events.

(a) Promptly upon obtaining knowledge thereof, give notice in writing to the Purchasers of:

(i) Any Default;

(ii) The occurrence of any circumstance, event or condition that has resulted in, or could reasonably be expected to result in, a Material Adverse Effect;

(iii) All claims, litigation, arbitration, or administrative or regulatory proceedings that are instituted or threatened against any Consolidated Entity and of a type that would need to be reported in a Form 8-K, 10-K or 10-Q filed with the SEC pursuant to the Securities Act or any written notice of alleged infringement received by any Credit Party related to material Intellectual Property of any Credit Party;

(iv) The receipt of any complaint, notifications or other material correspondence from any Regulatory Agency in the United States, limiting, suspending or revoking any Regulatory Approval or otherwise materially restricting the manufacture or sale of any Material Product;

(v) The creation by any Consolidated Entity of any Excluded Foreign Subsidiary; or

(vi) Any circumstance, event or condition that has resulted in, or would reasonably be expect to result in, (A) within the United States a recall of any Material Product or (B) a material default or event of default under, or the termination or cancellation outside the ordinary course of business of, any Material Contract.

Any notice required to be furnished pursuant to the **Section 5.2(a)** shall be deemed to have been furnished on the date on which and, provided such date is within the period specified, such requirement will be satisfied if, the Borrower files a form, report or other document with the SEC that contains such financial statement or report required hereunder.

(b) The Borrower shall give notice in writing to the Purchasers of any Major Transaction at least 20 Business Days prior to the anticipated effective date for such Major Transaction, which notice shall provide reasonable detail with respect to the terms of the transactions pursuant to which such Major Transaction is to be effected; provided, that if such Major Transaction is not publicly announced in time for the Borrower to comply with the foregoing notice requirement, the Borrower shall give the Purchasers notice of such Major Transaction no later than two days following the public announcement thereof but in no event less than 10 calendar days prior to the effective date of such Major Transaction.

(c) The Borrower shall (i) with respect to each fiscal quarter in which it achieves a Reduction Milestone as described in **Section 6.10** or has Net Sales of at least $25,000,000 for two consecutive fiscal quarters such that it does not have to comply with **Section 6.10**, include such information in the 10-Q or 10-K, as applicable, filed by the Borrower with the SEC with respect to such fiscal quarter, and (ii) with respect to each Event of Default due to a failure to

comply with **Section 6.9** or **6.10**, include a description of such Event of Default in its 10-K or 10-Q, as applicable, filed by the Borrower with the SEC with respect to the fiscal quarter in which such Event of Default occurred (or in a Form 8-K filed with the SEC prior thereto).

(d) Notwithstanding anything set forth above to the contrary, if any notice required to be furnished pursuant to this Agreement other than a notice required to be furnished pursuant to **Section 5.2(a)(i)** contains material non-public information (any such notice, a "MNPI Notice"), the Borrower, instead of delivering such MNPI Notice to all the Purchasers, shall promptly deliver such MNPI Notice to each Purchaser that is not a Restricted Purchaser and promptly notify each Restricted Purchaser in writing or orally that the Borrower desires to deliver to such Restricted Purchaser a MNPI Notice. Within five Business Days of receipt of such notification, the Restricted Purchaser may either (i) refuse the delivery of such MNPI Notice, in which case the Borrower's obligations under this Agreement with respect to such MNPI Notice and such Restricted Purchaser shall be deemed satisfied, or (ii) enter into good faith negotiations with the Borrower to agree the time period within which the Borrower will make the material non-public information contained in such MNPI Notice publicly available by including such information in a filing with the SEC. If the Borrower and such Restricted Purchaser agree on such time period, the Borrower shall promptly deliver to such Restricted Purchaser such MNPI Notice and shall include the applicable material non-public information in a public filing with the SEC within such agreed to time period. The failure to agree on such time period will be deemed to satisfy Borrower's obligations under this **Section 5.2(d)** with respect to such MNPI Notice and such Restricted Purchaser.

5.3 Existence; Maintenance of Properties. (i) Except as permitted under **Section 6.1**, maintain and preserve in full force and effect its legal existence, its good standing under the laws of the jurisdiction of its incorporation or formation, as the case may be, and its qualification to do business in every other jurisdiction where the nature of its business or its properties makes such qualification necessary (except where the failure to be so qualified or licensed could not reasonably be expected to have a Material Adverse Effect); and (ii) maintain all material tangible properties in good working order and condition (normal wear and tear and damage by casualty excepted) and from time to time make all necessary repairs to and renewals and replacements of such properties, except to the extent that any of such properties are obsolete or are being replaced or, in the good faith judgment of the Borrower, are no longer useful or desirable in the conduct of the business.

5.4 Compliance with Law. (i) Comply with all material federal, state, local and foreign laws, regulations and orders applicable to any Credit Party or its assets, including all Environmental Laws, (ii) obtain and maintain any and all material licenses, permits, franchises, Governmental Authorizations, Intellectual Property or other rights necessary for the ownership of its properties and the advantageous conduct of its business and as may be required from time to time by applicable law and (iii) maintain each material Regulatory Approval necessary to sell a Material Product within the United States, except in the case of (i) or (ii) where the failure to do so, individually or in the aggregate, would not reasonably be expected to result in a Material Adverse Effect.

5.5 Payment of Obligations. (i) Pay, discharge or otherwise satisfy at or before maturity all liabilities and obligations as and when due (subject to any applicable subordination,

grace and notice provisions), except to the extent failure to do so, individually or in the aggregate, could not reasonably be expected to have a Material Adverse Effect; and (ii) pay when due all material taxes, assessments and other governmental charges imposed upon it or its assets, franchises, business, income or profits before any penalty or interest accrues thereon, and all claims (including claims for labor, services, materials and supplies) for sums that by law might be secured by a Lien (other than a Permitted Lien) or charge upon any of its assets other than any tax, assessment or charge that is being diligently contested in good faith for which adequate reserves have been established in accordance with GAAP.

5.6 Maintenance of Books and Records; Inspection. Maintain proper books of accounts and records and enter therein complete and accurate entries and records of all of its transactions in accordance with GAAP and give representatives of the Purchasers access thereto during normal business hours upon not less than five Business Days' notice (but no more than once annually unless an Event of Default has occurred and is continuing), including permission to (i) examine, copy and make abstracts from any such books and records or other information reasonably requested by any Purchaser from time to time and (ii) communicate directly with any Consolidated Entity's officers or accountants with respect to the business, financial conditions and other affairs of any Consolidated Entity.

5.7 Maintenance of Insurance. At its own cost, obtain and maintain insurance against (i) loss, destruction or damage to its properties and business of the kinds and in the amounts customarily insured against by corporations with established reputations engaged in the same or similar business as the Credit Parties and (ii) public liability and third-party property damage of the kinds and in the amounts customarily insured against by companies with established reputations engaged in the same or similar business as the Credit Parties. All such policies shall be (x) issued by financially sound and reputable insurers, and (y) as of the Purchase Date, name the Collateral Agent as an additional insured and, where applicable, as loss payee under a lender loss payable endorsement reasonably satisfactory to the Collateral Agent. As of the Purchase Date, all of the insurance policies required hereby shall be evidenced by one or more certificates of insurance delivered to the Purchasers by the Borrower as the Collateral Agent may otherwise reasonably request from time to time. If an Event of Default has occurred and is continuing, in the event of casualty loss with respect to any collateral granted under the Security Documents, the Collateral Agent, as mortgagee, loss payee or additional insured, as appropriate to the policy, may make proof of loss if not made promptly by the Credit Parties, and each insurance company concerned shall hereby be authorized and directed to make payment for such loss directly to the Collateral Agent instead of to any Credit Party and the Collateral Agent jointly.

5.8 ERISA.

(a) Comply in all material respects with ERISA and the Code and the regulations and requirements of the PBGC with respect to the maintenance and operation of each Plan, except where the necessity of such compliance is being contested in good faith through appropriate proceedings.

(b) Make timely payment of contributions required to meet the minimum funding standards set forth in ERISA and the Code with respect to any Plan, and not take any action or fail to take action the result of which action or inaction could be a material liability for the

Borrower or a member of the Controlled Group to the PBGC with respect to any Plan or Multiemployer Plan. Participate in a non-exempt prohibited transaction, as defined in Section 406 of ERISA or Section 4975(c) of the Code with respect to any Plan that is reasonably expected to subject the Borrower to any material civil penalty under ERISA or material tax under the Code.

5.9 Creation or Acquisition of Subsidiaries. If the Borrower or any of its Subsidiaries at any time creates or acquires a Subsidiary (other than an Excluded Foreign Subsidiary) or if any Excluded Foreign Subsidiary fails to qualify as such any time after its creation or acquisition:

(a) As promptly as practicable after (and in any event within 30 days (or 90 days in the event of a Foreign Subsidiary) or in either case such later date as may be agreed upon by the Collateral Agent, after) the creation or direct or indirect acquisition by the Borrower thereof or failure thereof to so qualify, (i) each such Subsidiary will execute and deliver to the Collateral Agent and the Purchasers (A) a joinder to the Guaranty in form and substance satisfactory to the Collateral Agent (B) a joinder to the Security Agreement in form and substance satisfactory to the Collateral Agent and (C) a Mortgage with respect to any owned interests of such Subsidiary in real property having a fair market value in excess of $1,000,000 and (ii) the Borrower will, or will cause the parent Subsidiary that owns the Capital Stock of such Subsidiary to, execute and deliver to the Collateral Agent an amendment or supplement to the Security Agreement pursuant to which all of the Capital Stock of such Subsidiary shall be pledged to the Collateral Agent, together with the certificates, if any, evidencing such Capital Stock, along with undated stock powers duly executed in blank;

(b) As promptly as practicable after (and in any event within 30 days (or 90 days in the event of a Foreign Subsidiary) or in either case such later date as may be agreed upon by the Collateral Agent, after) the creation or direct or indirect acquisition by the Borrower thereof or failure thereof to so qualify, the Borrower will deliver to the Collateral Agent and the Purchasers:

(i) a written legal opinion of counsel to such Subsidiary addressed to the Collateral Agent and the Purchasers, in form and substance reasonably satisfactory to the Collateral Agent;

(ii) (A) a copy of the articles or certificate of incorporation, certificate of formation or other organizational document of such Subsidiary, certified as of a date that is acceptable to the Collateral Agent by the Secretary of State (or comparable Governmental Authority) of its jurisdiction of organization, (B) a copy of the bylaws, operating agreement or similar governing document of such Subsidiary, certified on behalf of such Subsidiary as of a date that is reasonably acceptable to the Collateral Agent by the secretary or an assistant secretary of such Subsidiary, (C) an original certificate of good standing (or equivalent certification if available in the case of a Subsidiary that is organized in a jurisdiction outside the United States) for such Subsidiary issued by the Secretary of State (or comparable Governmental Authority) of its jurisdiction of organization and (D) copies of resolutions adopted by the board of directors (or similar governing body) of such Subsidiary authorizing the execution, delivery and performance of the agreements, documents and instruments executed

pursuant to **Section 5.9(a)**, certified on behalf of such Subsidiary by the secretary or an assistant secretary of such Subsidiary (or equivalent officer), all in form and substance reasonably satisfactory to the Collateral Agent;

(iii) a report of Uniform Commercial Code financing statement, tax and judgment lien searches (or equivalent searches to the extent available for jurisdictions outside the United States) performed against such Subsidiary in each jurisdiction in which such Subsidiary is incorporated or organized, has a place of business or maintains any assets, which report shall show no Liens on its assets (other than Permitted Liens);

(iv) a certificate of the secretary or an assistant secretary (or equivalent officer) of such Subsidiary as to the incumbency and signature of the officers executing agreements, documents and instruments executed pursuant to **Sections 5.9(a)** and **5.9(b)**;

(v) a certificate, executed by an authorized officer of the Borrower, in form and substance satisfactory to the Collateral Agent, that no Default or Event of Default shall exist immediately before or after the creation or acquisition of such Subsidiary or be caused thereby; and

(vi) a certificate executed by the secretary or an assistant secretary of each of the Borrower and such Subsidiary, which shall constitute a representation and warranty by the Borrower and such Subsidiary as of the date of the creation or acquisition of such Subsidiary that all conditions contained in this Agreement and each other Credit Document to such creation or acquisition have been satisfied, in form and substance reasonably satisfactory to the Collateral Agent;

(c) Notwithstanding the foregoing provisions of this **Section 5.9**, (i) no Excluded Foreign Subsidiary (and no Subsidiary of any Excluded Foreign Subsidiary) will be required to become a Subsidiary Guarantor, and (ii) no Subsidiary will be required to pledge Capital Stock of an Excluded Foreign Subsidiary to the extent that such pledge would (A) exceed 65% of the total combined voting power of all outstanding classes of Capital Stock of such Excluded Foreign Subsidiary entitled to vote within the meaning of Section 1.956-2(c)(2) of the United States Treasury Regulations (for clarity, such Subsidiary would be required to pledge 100% of the outstanding non-voting Capital Stock of such Excluded Foreign Subsidiary but such Subsidiary would not be required to pledge, or cause to be pledged, any Capital Stock of any Subsidiary of any Excluded Foreign Subsidiary) or (B) result in any breach of the laws or regulations (or analogous restrictions) of any applicable jurisdiction or any similar principles which may limit the pledge of an Excluded Foreign Subsidiary's Capital Stock.

(d) Notwithstanding anything in this Agreement or the other Credit Documents, with respect to any real property acquired after the Effective Date and requiring a Mortgage pursuant to **Section 5.9(a)**, the Credit Parties shall have 90 days after the acquisition of the applicable real property (or such later date as may be agreed upon by the Collateral Agent in the exercise of its reasonable discretion with respect thereto) to take the actions required by **Section 5.9(a)**.

5.10 Heplisav-B Launch. Cause the Heplisav-B Launch to occur within 90 days of obtaining the FDA Approval.

5.11 OFAC, PATRIOT Act Compliance. Refrain from doing business in a Sanctioned Country or with a Sanctioned Person in violation of the economic sanctions of the United States administered by OFAC and provide, to the extent commercially reasonable, such information and take such actions as are reasonably requested by the Purchasers in order to assist the Purchasers in maintaining compliance with the PATRIOT Act.

5.12 Legend Removal. With respect to each applicable Purchaser, if the Borrower has paid any of the Approval Fee Amount by delivering shares of Common Stock pursuant to **Section 2.4(b)(ii)**, within five Business Days after either (x) the six-month anniversary of the Purchase Date or (y) if on such six-month anniversary there is not then adequate current public information available with respect to the Borrower as required under Rule 144(c)(1) of the Securities Act, the one-year anniversary of the Purchase Date, deliver to each such Purchaser delegended certificates for all shares of Common Stock issued to such Purchaser under **Section 2.4(b)(ii)**; provided, that no such delegended certificates are required to be delivered to a Purchaser unless such Purchaser has (a) delivered to the Borrower a letter representing that (i) such Purchaser is not, and has not been within the three months prior to six-month anniversary or one-year anniversary, as applicable, of the Purchase Date, an "affiliate" of the Borrower, as that term is defined in Rule 144(a)(1) and (ii) such Purchaser acquired its Notes from the Borrower on the Purchase Date; (b) delivered to the Borrower the original stock certificate(s) to be delegended; and (c) provided an instruction or transfer notice, as applicable, to the Borrower and transfer agent for the Common Stock, setting forth the DTC account information necessary (including the name, account number and contact information of the DTC participant receiving delegended Common Stock) to transfer shares of Common Stock to such Purchaser or its custodian on its behalf, and signed by such Purchaser with a medallion signature guarantee if required by the transfer agent for the Common Stock; provided, further that each Purchaser receiving delegended certificates of Common Stock acknowledges that, notwithstanding the fact that it has received such delegended certificates, it will only sell the related Common Stock pursuant to the registration requirements of the Securities Act or pursuant to a valid exemption therefrom. For the avoidance of doubt, the Consolidated Entities shall not be subject to the provisions of this **Section 5.12** if the Borrower has not paid the Approval Fee Amount by delivering shares of Common Stock pursuant to **Section 2.4(b)(ii)**.

5.13 Further Assurances. Execute, acknowledge and deliver, or cause to be executed, acknowledged or delivered, any and all such further assurances and other agreements or instruments, and take or cause to be taken all such other action, as shall be reasonably necessary from time to time to give full effect to the Credit Documents and the transactions contemplated thereby. Notwithstanding anything to the contrary herein or in any other Credit Document, no Credit Party shall have any obligation to (A) enter into control agreements with respect to any security interest or lien in any Excluded Deposit Account or Excluded Securities Account (each as defined in the Security Agreement), (B) perfect any security interest or lien in any intellectual property in any jurisdiction other than in the United States, (C) to obtain any landlord waivers, estoppels or collateral access letters (other than with regards to the corporate headquarters of the Borrower or to the extent required pursuant to Section 4.7 of the Security Agreement), provided that no such waiver, estoppel or collateral access letter shall be required if, after using commercially reasonable efforts, the Credit Party are unable to obtain such waiver, estoppel or collateral access letter, (D) perfect a security interest in any letter of credit rights, other than the filing of a UCC financing statement, (E) deliver any leasehold mortgages with regards to leased

property, or (F) enter into any agreement governed by the laws of a jurisdiction outside the United States with respect to any (x) work-in-process inventory located outside of the United States or (y) other collateral located outside of the United States with a fair market value (1) less than or equal to $6,000,000 in the aggregate or (2) less than or equal to 5% of the total assets of the Borrower and the Guarantors.

5.14 Post-Closing Obligations. The Borrower will use commercially reasonable efforts to deliver to the Collateral Agent (in form and substance reasonably satisfactory to the Collateral Agent), as soon as practicable following the Effective Date, but in any event not later than the dates set forth below (it being understood and agreed that the Collateral Agent, in its sole discretion, may extend the time period allowed for delivery of any such item):

(a) Within 30 days of the Purchase Date, a Collateral Access Agreement covering each place of business of the Borrower located in the United States and such other locations located in the United States and listed on Annex B of the Security Agreement, in each case duly completed and executed by the applicable Credit Party and the applicable warehouseman, bailee or lessor, in form and substance satisfactory to the Purchasers.

ARTICLE VI NEGATIVE COVENANTS

Until payment in full of all Obligations (other than contingent indemnification obligations), the Borrower will not, and will cause its Subsidiaries to not:

6.1 Liquidate; Merger. Liquidate, or merge or consolidate with any Person, except that (i) any Consolidated Entity that is not a Credit Party may liquidate or dissolve and any Credit Party (other than the Borrower) may liquidate or dissolve into another Credit Party,

(ii) any Consolidated Entity may merge or consolidate with another Person in connection with a Major Transaction, and (iii) if not in connection with a Major Transaction, (A) the Borrower may merge or consolidate with another Person so long as the Borrower is the surviving corporation, and (B) any Consolidated Entity other than the Borrower may merge or consolidate with any other Person so long as either (x) the surviving entity is a Subsidiary of the Borrower and if such Consolidated Entity was a Credit Party (or required by this Agreement to be a Credit Party), the surviving Person of such merger or consolidation is a Credit Party (or will become a Credit Party within the time periods required under **Section 5.9**), or (y) such merger or consolidation is effected in connection with a disposition of such Consolidated Entity not otherwise prohibited under this Agreement following which such Consolidated Entity ceases to be a Consolidated Entity.

6.2 Indebtedness. Directly or indirectly issue, assume, create, incur or suffer to exist any Indebtedness, except for:

(i) Indebtedness of the Credit Parties in favor of the Collateral Agent and the Purchasers incurred under the Credit Documents;

(ii) Indebtedness existing as of the date hereof and described in **Schedule 6.2** of the Disclosure Letter and any renewals, replacements, refinancings or extensions of

any such Indebtedness that do not increase the outstanding principal amount thereof (other than by an amount equal to accrued and unpaid interest and premium thereon, including tender premium, and any underwriting discounts, fees, commissions and expenses associated with such renewal, replacement, refinancings and extensions) or result in an earlier final maturity date or decreased weighted average life thereof;

(iii) Capital Lease Obligations and purchase money Indebtedness of the Borrower or any Subsidiary thereof incurred solely to finance the acquisition, installation, construction or improvement of any equipment, real property or other fixed assets (and any renewals, replacements, refinancings or extensions thereof); provided that all such Indebtedness does not exceed $2,000,000 in aggregate principal amount outstanding at any time;

(iv) Indebtedness of the Borrower and Subsidiary Guarantors for borrowed money to a Person that is not an Affiliate of a Consolidated Entity under a working capital or revolving credit facility (the "A/R Facility") that is secured solely by accounts receivables and supporting obligations, and books and records relating to accounts receivables, of the Consolidated Entities (and the products and proceeds thereof); provided, that (A) each provider of such Indebtedness shall have entered into an intercreditor agreement with the Collateral Agent on terms reasonably satisfactory to the Collateral Agent, (B) the maximum aggregate commitment under such A/R Facility does not exceed an amount that, when multiplied by the per annum interest rate applicable thereto measured at the time of entry into the A/R Facility (or any increase in commitment amount), would equal $5,000,000, and (C) the aggregate principal amount outstanding at any time under the A/R Facility does not exceed the lesser of (1) 75% of the account receivables of the Credit Parties (determined on a consolidated basis in accordance with GAAP) and (2) an amount that, when multiplied by the per annum interest rate applicable thereto at such time, would equal $6,000,000;

(v) unsecured Indebtedness of the Borrower in the form of senior subordinated convertible notes; provided, that (A) such Indebtedness does not have a maturity date, or provide for any scheduled payment of principal (or scheduled redemption date), earlier than 180 calendar days after the Maturity Date, (B) such Indebtedness shall be subject to Customary Subordination Terms, and (C) the aggregate principal amount outstanding at any time under such Indebtedness does not exceed an amount that, when multiplied by the per annum cash interest rate applicable thereto at such time, would equal $10,000,000 (the "Convertible Notes");

(vi) Indebtedness of the Borrower or any Subsidiary under Hedge Agreements entered into in the ordinary course of business to manage existing or anticipated interest rate or foreign currency risks and not for speculative purposes;

(vii) Indebtedness of the Borrower or any Subsidiary thereof incurred in the ordinary course of business in respect of (A) performance, bid and surety bonds and completion guarantees, or (B) surety (or similar) bonds, letters of credit and performance bonds obtained solely in connection with workers' compensation obligations of the Consolidated Entities;

(viii) unsecured loans and advances (A) by the Borrower or any Subsidiary to any Subsidiary Guarantor, (B) by any Subsidiary to the Borrower and (C) by any Credit Party to any Subsidiary that is not a Credit Party; provided, that in the case of this clause
(C) such loans and advances are permitted under **Section 6.6(vi)**;

(ix) ACH Indebtedness and Indebtedness owed in respect of business credit card programs and any netting services, overdrafts and related liabilities arising from treasury, depository and cash management services;

(x) Indebtedness consisting of (i) the financing of insurance premiums with the providers of such insurance or their affiliates or (ii) take-or-pay obligations contained in supply agreements, in each case, in the ordinary course of business;

(xi) Indebtedness incurred in connection with judgments, decrees, attachments or awards that do not constitute an Event of Default;

(xii) guarantees of Indebtedness otherwise permitted hereunder;

(xiii) Indebtedness of Subsidiaries that are not Subsidiary Guarantors not to exceed $1,000,000 in aggregate principal amount (calculated, with respect to each incurrence of Indebtedness under this clause (xiii), using the principal amount of Indebtedness at the time of entry into such Indebtedness and without regard to currency and exchange rate fluctuations) outstanding at any time;

(xiv) letters of credit, banker's acceptances and other similar instruments incurred in the ordinary course of business, which may be secured by cash and Cash Equivalents, not to exceed $1,500,000 in aggregate principal amount outstanding at any time (calculated, with respect to each incurrence of Indebtedness under this clause (xiv), using the principal amount of Indebtedness at the time of entry into such Indebtedness and without regard to currency and exchange rate fluctuations); and

(xv) Any Deferred Acquisition Consideration incurred in connection with a Permitted Acquisition.

6.3 Liens and Encumbrances. Create, assume or suffer to exist any Lien in or on any of its property, real or personal, whether now owned or hereafter acquired, except for (collectively, the "Permitted Liens"):

(i) Liens in favor of the Collateral Agent or the Purchasers created by or otherwise existing under or in connection with the Credit Documents;

(ii) Liens in existence as of the date hereof and set forth on **Schedule 6.3** of the Disclosure Letter;

(iii) Liens securing Indebtedness permitted under **Section 6.2(iii)**; provided that (A) the amount of the Indebtedness secured by such Lien shall not exceed 100% of the cost to the Consolidated Entities of acquiring, constructing, installing and/or improving the property and any other assets then being financed solely by the same

financing sources, and (B) any such Lien shall not encumber any other property of any Consolidated Entity except assets then being financed solely by the same financing sources;

(iv) Liens securing Indebtedness permitted under **Section 6.2(iv)**; provided that any (A) such Lien shall attach only to the accounts receivables and supporting obligations, and books and records relating to accounts receivables of the Credit Parties (and the products and proceeds thereof), and (B) the Collateral Agent shall have a second-priority lien on all such accounts receivables and books and records (and the products and proceeds thereof);

(v) Liens imposed by mandatory provisions of law of landlords, carriers, warehousemen, bailees, mechanics and materialmen incurred in the ordinary course of business for sums that are (A) not yet more than 30 days past due or (B) being contested in good faith by appropriate proceedings;

(vi) Liens (other than those imposed by ERISA) incurred in the ordinary course of business in connection with worker's compensation, unemployment insurance or other forms of governmental insurance or benefits, insurance, surety bonds, or other obligations of a like nature or to secure the performance of letters of credit, banker's acceptances, bids, tenders, statutory obligations, leases and contracts (other than for borrowed money) entered into in the ordinary course of business;

(vii) Liens for current taxes, assessments or other governmental charges that are not delinquent or remain payable without any penalty or that are being contested in good faith and with due diligence by appropriate proceedings and for which adequate reserves have been established in accordance with GAAP;

(viii) Liens of judgments, execution, attachment or similar process that do not constitute an Event of Default under **Section 7.1(j)**;

(ix) (A) customary banker's liens and rights of setoff, revocation, refund or chargeback under deposit agreements with financial institutions where any Credit Party maintains deposits or investments in the ordinary course of business, and (B) customary Liens incurred to secure ACH Indebtedness, business credit card programs, and netting services, overdrafts and related liabilities arising from treasury, depositary and cash management services;

(x) Liens arising under Article 4 of the UCC on items in collection and documents and proceeds related thereto;

(xi) with respect to any real property owned or occupied by any Credit Party, (A) all survey exceptions, easements, rights of way, reservations, licenses, encroachments, variations and similar restrictions, charges and encumbrances on title that do not secure monetary obligations and do not materially impair the use of such property for its intended purposes or the value thereof and (B) any other Lien or exception to coverage described in mortgagee policies of title insurance issued in favor of, and accepted by, the Collateral Agent;

(xii) Liens on insurance policies, premiums and proceeds thereof, or other deposits, to secure insurance premium financings with respect to unearned premiums and other liabilities to insurance carriers;

(xiii) Liens on specific items of inventory or other goods (and the proceeds thereof) of the Consolidated Entities securing such Person's obligations in respect of bankers' acceptances issued or created for the account of such Person to facilitate the purchase, shipment or storage of such inventory or other goods;

(xiv) Liens arising out of conditional sale, title retention, consignment or similar arrangements for the sale of goods entered into in the ordinary course of business;

(xv) Liens in favor of customs and revenue authorities arising as a matter of law to secure payment of customs duties in connection with the importation of goods in the ordinary course of business;

(xvi) Liens in the nature of the right of setoff in favor of customers, suppliers and service providers to contractual agreements with the Consolidated Entities in the ordinary course of business;

(xvii) Liens on processing or manufacturing equipment or inventory of the Consolidated Entities granted in the ordinary course of business to the Consolidated Entities' supplier at which such equipment or inventory is located;

(xviii) any encumbrance or restriction (including put and call arrangements) with respect to Capital Stock of any joint venture, minority investment or similar arrangement otherwise permitted hereunder pursuant to any joint venture, shareholders, investor rights or similar agreement;

(xix) ground leases in respect of real property on which facilities owned or leased by any of the Consolidated Entities are located and other Liens affecting the interest of any landlord (and any underlying landlord) of any real property leased by any Consolidated Entity;

(xx) any interest or title of a lessor or licensor under any lease, sublease, license or sublicense entered into by any Consolidated Entity (A) existing on the date hereof (but not created in contemplation hereof), (B) entered into in the ordinary course of its business, or (C) entered into in connection with an Investment permitted pursuant to **Section 6.6**;

(xxi) Liens on deposits or other amounts held in escrow to secure payments (contingent or otherwise) payable by any Consolidated Entity with respect to (A) the settlement, satisfaction, compromise or resolution or judgments, litigation, arbitration or other disputes, and (B) any commercial contracts for manufacturing, production and other service arrangements entered into in the ordinary course of business;

(xxii) Liens and other credit support provided in respect of Indebtedness permitted under **Section 6.2(vi)**; provided, that any such Lien shall attach only to cash and Cash Equivalents;

(xxiii) Liens securing Indebtedness permitted under **Section 6.2(xiv)**; provided that any such Lien shall attach only to the cash and Cash Equivalents of the Consolidated Entities pledged to secure such Indebtedness;

(xxiv) Liens on assets of Subsidiaries that are not Subsidiary Guarantors securing Indebtedness permitted under **Section 6.2(xiii)**;

(xxv) leases, subleases, licenses or sublicenses granted to third Persons permitted by **Section 6.4** (other than **Section 6.4(vi)**); and

(xxvi) Liens (i) consisting of deposits or advances made by any Consolidated Entity in connection with any letter of intent or purchase agreement in respect of any Permitted Acquisition or Investment permitted under this Agreement or (ii) consisting of an option or agreement to dispose of any property permitted to be sold pursuant to this Agreement;

6.4 Asset Disposition. Sell, license, assign, lease, convey, transfer or otherwise dispose any of its assets, business or other properties (including Capital Stock of any Subsidiary of the Borrower), except for:

(i) sales of inventory and the sale or discount of accounts receivables or notes receivables in the ordinary course of business;

(ii) non-exclusive licenses in the ordinary course of business;

(iii) (A) licenses (which may be exclusive) in a particular geography outside of the United States to sell or commercialize Heplisav-B, (B) licenses, which may be exclusive, to manufacture any drug or product and (C) licenses, which may be exclusive, to sell, manufacture, co-develop or commercialize pharmaceutical products or programs other than Heplisav-B;

(iv) licenses or sublicenses granted by any Consolidated Entity to sell or commercialize Heplisav-B in the United States for which a majority of the reasonably expected value of the consideration to be received by the Consolidated Entities is in the form of periodic payments based on per unit sales of Heplisav-B over a period of time; provided, that such license or sublicense does not effect a legal transfer of title to any Intellectual Property rights and such license or sublicense is a true license as opposed to a license or sublicense that is a sales transactions in substance;

(v) sales, licenses, assignments, leases, conveyances, transfers or other dispositions to a Credit Party and from any Subsidiary that is not a Credit Party to any other Consolidated Entity;

(vi) Permitted Liens;

(vii) dispositions of damaged, expired, short-dated, worn-out or obsolete equipment, inventory or assets in the ordinary course of business;

(viii) leases, subleases, licenses or sublicenses granted to third Persons in the ordinary course of business that do not interfere in any material respect with the business of the Consolidated Entities;

(ix) dispositions of cash and Cash Equivalents;

(x) any surrender or waiver of contract rights or the settlement, release or surrender of claims in the ordinary course of business;

(xi) the abandonment of intellectual property rights in the ordinary course of business;

(xii) the unwinding, settlement or termination of any obligations or rights under or in respect of any Hedging Agreements;

(xiii) the issuance or sale of Capital Stock by any Subsidiary to any Credit Party or any Wholly Owned Subsidiary of a Credit Party;

(xiv) any Investment specifically permitted under **Section 6.6** and any Restricted Payment specifically permitted under **Section 6.7**;

(xv) foreclosures, condemnation, expropriation or any similar action on assets of Borrower or any of its Subsidiaries;

(xvi) the sale, assignment, conveyance, transfer or other disposition of any Investment that (A) is a joint venture made pursuant to customary buy/sell arrangements between the joint venture parties set forth in the related joint venture arrangements and
(B) does not result in the direct or indirect sale, assignment, conveyance, transfer or other disposition of Heplisav-B or any asset, right or Intellectual Property related thereto; and

(xvii) a sale, license, assignment, lease, conveyance, transfer or other disposition of assets with a fair market value of less than or equal to $1,000,000 in any single transaction or series of related transactions; provided, that the aggregate fair market value of all such assets sold, licensed, assigned, leased, conveyed, transferred or otherwise disposed of since the Effective Date is less than $5,000,000.

6.5 Transactions with Foreign Subsidiaries. (i) Other than transactions that are at prices and on terms and conditions not less favorable than could be obtained on an arm's-length basis from unrelated third parties, with respect to a Credit Party, enter into any transaction with a Foreign Subsidiary pursuant to the terms of which such Credit Party transfers, or is obligated at any time to transfer, cash or assets to such Foreign Subsidiary, except as permitted by **Section 6.6(vi)**, or (ii) with respect to any Consolidated Entity that is not a Foreign Subsidiary, transfer any interest in any Intellectual Property to a Foreign Subsidiary.

6.6 Investments. Purchase, own, invest in or otherwise acquire, directly or indirectly, any Indebtedness or Capital Stock of any other Person, or purchase or otherwise acquire or license any portion of the assets, business or properties of another Person, or make or permit to exist any loans, advances or extensions of credit to, or any investment in cash or by delivery of property in, any Person (collectively, "Investments"), except for:

(i) Investments consisting of cash and Cash Equivalents;

(ii) Investments consisting of the extension of trade credit, the creation of prepaid expenses, payroll and travel advances, and the purchase of inventory, supplies, equipment and other assets, and licenses not described in clause (z) of **Section 6.6(xiii)**, in each case by the Consolidated Entities in the ordinary course of business;

(iii) Investments of the Borrower or any Subsidiary under Hedge Agreements entered into in the ordinary course of business to manage existing or anticipated interest rate or foreign currency risks and not for speculative purposes;

(iv) Investments existing as of the date hereof in Subsidiaries;

(v) Investments made after the date hereof in Credit Parties and by any Subsidiary that is not a Credit Party to any other Subsidiary that is not a Credit Party;

(vi) Investments made after the date hereof by Credit Parties in any Subsidiary that is not a Credit Party made after the Effective Date in an aggregate amount not exceeding for all such Investments (A) $5,000,000 in any fiscal year or (B) $20,000,000 at any time after the date hereof;

(vii) upfront payments made in connection with a Heplisav-B In License;

(viii) guarantees permitted under **Section 6.2(xii)**;

(ix) Investments received in connection with the bankruptcy or reorganization of, or settlement of delinquent accounts and disputes with, customers and suppliers, in each case in the ordinary course of business;

(x) Investments consisting of capped call, call option and other equity derivative transactions entered into at the same time as, and in connection with, the offering of the Convertible Notes;

(xi) Investments consisting of the endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business;

(xii) Investments consisting of notes receivable of, or prepaid royalties and other credit extensions, to customers and suppliers who are not Affiliates, in the ordinary course of business;

(xiii) any transaction or series of related transactions by which the Borrower or any of the Credit Parties (x) acquires all or substantially all of the assets of a Person or

going business, division, or line of business or product, (y) acquires Capital Stock of any Person having at least a majority of combined voting power of the then outstanding Capital Stock of such Person, or (z) licenses from a third Person the rights in a particular geography or for a particular indication to sell or commercialize any pharmaceutical product or licenses the rights to use any Intellectual Property for use in research, development and other commercialization of a pharmaceutical product (such a transaction satisfying the requirements of this **Section 6.6(xiii)**, a "Permitted Acquisition"), so long as:

(A) no Default or Event of Default then exists or would result therefrom;

(B) all transactions in connection therewith shall be consummated, in all material respects, in accordance with all applicable laws;

(C) if such transaction or series of related transactions involves an acquisition of the Capital Stock of a Person, (x) such Person shall not be organized in a jurisdiction outside the United States, and (y) the Borrower shall comply with **Section 5.9** within the time periods specified therein;

(D) any rights to sell or commercialize a pharmaceutical product acquired in such transaction or series of transactions (whether acquired via a license, an acquisition of assets or an acquisition of Capital Stock) shall primarily relate to the sale, research, development or commercialization of a pharmaceutical product in the United States;

(E) the Consolidated Entities shall be in compliance with the covenants set forth in **Section 6.9** and **Section 6.10** on a pro forma basis after giving effect to such transactions (with pro forma compliance of **Section 6.9** being determined (1) as of the date of the last financial statements filed by the Borrower with the SEC or delivered pursuant to **Section 5.1**, (2) as if any EBITDA of the target company, division or product line acquired in such transaction was included in EBITDA of the Borrower for the applicable Test Period, and (3) as if Cash Interest Expense for the applicable Test Period included any Cash Interest Expense with respect to any Indebtedness incurred in connection with such transactions as if such Indebtedness was incurred on the first day of such Test Period (and if such Indebtedness is a floating or formula rate, such Indebtedness shall, for purposes of such determination, have an implied rate of interest during the applicable Test Period determined by utilizing the rate of interest that is or would be in effect with respect to such Indebtedness as of the date of determination);

(F) the aggregate consideration paid or payable in connection with such transaction, including the amount of Deferred Acquisition Consideration required to be shown as a liability on the consolidated balance sheet of the Borrower and a reasonable estimate of any other Deferred Acquisition Consideration, (1) shall not exceed 10% of the Borrower's Market Capitalization

at the time that the transaction is first disclosed to the Purchasers, and (2) together with the aggregate consideration paid or payable in connection with all Permitted Acquisitions consummated after the Effective Date (including any Deferred Acquisition Consideration actually paid, any Deferred Acquisition Consideration required to be shown as a liability on the consolidated balance sheet of the Borrower and a reasonable estimate of any other Deferred Acquisition Consideration) shall not exceed 25% of the Borrower's Market Capitalization at the time that the transaction is first disclosed to the Purchasers; and

(G) an authorized officer of the Borrower has delivered to the Collateral Agent prior to the effectiveness of such transaction or prior to the effectiveness of the first of such series of related transactions, as applicable, a written certificate signed by such officer certifying that the conditions specified in clause (A) through (F) of this **Section 6.6(xiii)** have been satisfied with respect to such transaction or series of related transactions;

(xiv) Investments made as a result of the receipt of non-cash consideration from any disposition of assets to third parties permitted under **Section 6.4**; provided that no more than 25% of the consideration for any sale, license, assignment, lease, conveyance, transfer or other disposition shall consist of non-cash consideration (other than consideration arising from the assumption of liabilities);

(xv) Investment to the extent the consideration paid therefor consists of Qualified Capital Stock of the Borrower and Investments with the proceeds of a substantially concurrent offering of Qualified Capital Stock of the Borrower;

(xvi) Investments of any Person in existence at the time such Person becomes a Subsidiary; provided that such Investment was not made in connection with or anticipation of such Person becoming a Subsidiary; and

(xvii) any other Investments not to exceed $2,000,000 in aggregate principal amount outstanding at any time.

6.7 Restricted Payments.

(a) Directly or indirectly, declare or make any dividend payment, or make any other distribution of cash, property or assets, in respect of any of its Capital Stock, or purchase, redeem, retire or otherwise acquire for value any shares of its Capital Stock, or set aside funds for any of the foregoing (collectively, "Restricted Payments"), except that:

(i) any Consolidated Entity may declare and make dividend payments or other distributions payable solely in its Capital Stock;

(ii) any Subsidiary of the Borrower may declare and make dividend payments or other distributions to the holders of its Capital Stock; provided that in the case of dividend or other distribution by a non-Wholly Owned Subsidiary, such dividend or distribution shall be made ratably with respect to their Capital Stock or shall be payable solely to the Credit Parties and/or Wholly Owned Subsidiaries of the Credit Parties;

(iii) the Borrower may make cash payments in lieu of the issuance of fractional shares in connection with the exercise or conversion of warrants, options or other rights to acquire Capital Stock;

(iv) the purchase, redemption, retirement or other acquisition for value of Capital Stock of the Borrower held by current or former officers, directors, employees or consultants of any Consolidated Entity (or their estates or beneficiaries under their estates) upon death, disability, retirement or termination of employment or alteration of employment status or pursuant to the terms of any agreement under which such Capital Stock was issued; provided, however, that the aggregate cash consideration paid for such purchase, redemption, retirement or other acquisition of such Capital Stock does not exceed $1,000,000 in any fiscal year;

(v) (A) repurchases of Capital Stock deemed to occur upon the cash-less or net exercise of stock options, warrants or other convertible or exchangeable securities and
(B) repurchases of Capital Stock deemed to occur upon the withholding of a portion of the Capital Stock granted or awarded to a current or former officer, director, employee or consultant to pay for the taxes payable by such person upon such grant or award (or upon vesting or exercise thereof);

(vi) purchases of Capital Stock of any Subsidiary to the extent permitted as an Investment under **Section 6.4**;

(vii) the issuance of rights in connection with the adoption of a stockholders' rights plan approved by the Borrower's board of directors; and

(viii) purchases of Capital Stock of the Borrower in connection with any capped call, call option or other equity derivative transactions entered into at the same time as, and in connection with, the offering of the Convertible Notes and the settlement or termination thereof.

(b) Directly or indirectly, make any voluntary prepayment of principal on, or interest, fees or premium (if any) with respect to, the Convertible Notes, or directly or indirectly make any redemption (including pursuant to any change of control or asset disposition provision), retirement, defeasance or other acquisition for value of the Convertible Notes, or make any deposit or otherwise set aside funds for any of the foregoing purposes; except that:

(i) the Borrower may make scheduled payments of cash interest with respect to the Convertible Notes at the non-default rate of interest (plus any additional interest payable with respect to any Convertible Notes or (x) as a remedy relating to the Borrower's failure to comply with its reporting obligations thereunder, (y) for any such Convertible Notes failing to be freely tradable as required by the terms thereof and (z) for the restrictive legend on any such Convertible Notes failing to have been removed as required by the terms thereof, but not cash payments of interest previously accrued in- kind); provided that the amount of cash interest paid by the Borrower thereunder in any period of four consecutive fiscal quarters does not exceed $10,000,000;

(ii) the Borrower may accrue (but may not pay in cash) other interest (including interest at the default rate);

(iii) upon any conversion of any Indebtedness under the Convertible Notes by the holders thereof pursuant to its terms, the Borrower may pay or prepay the principal on such Indebtedness subject to such conversion, and interest with respect thereto, but only in Capital Stock of the Borrower (provided, that any fractional shares of Capital Stock of the Borrower required to be issued in connection with such conversion may be paid in cash);

(iv) the Borrower may settle, repay, redeem or otherwise retire or acquire for value any such Indebtedness in exchange for shares of Qualified Capital Stock; provided, that on the trade date for any such exchange the Common Stock is trading at a price per share equal to or greater than the conversion price per share for such Indebtedness;

(v) the Borrower may repurchase, redeem or otherwise retire or acquire for value any such Indebtedness with the proceeds of, in exchange for, new Indebtedness incurred pursuant to **Section 6.2(v)**; and

(vi) the Borrower may repurchase any such Indebtedness upon the occurrence of a Major Transaction so long as the Required Purchasers have received notice of such Major Transaction in accordance with **Section 5.2(b)** and the Required Purchasers shall not have required that the Borrower have prepaid the Notes in whole pursuant to **Section 2.7**.

6.8 Transactions with Related Persons. Except as expressly permitted by **Section 6.7(a)** or **Section 6.5** and Investments permitted by **Section 6.6**, enter into any transaction with any Affiliate, except in the ordinary course of business pursuant to the reasonable requirements of the business of the Borrower and on terms substantially no more favorable to such Affiliate than those that such Affiliate would obtain in a comparable arms-length transaction with a Person other than the Borrower or an Affiliate thereof; provided that the foregoing shall not prohibit (a) customary fees and indemnification provided to directors of the Consolidated Entities, (b) transactions among Consolidated Entities, (c) any compensation and indemnification of, and other employment agreements and arrangements, employee benefit plans, and stock incentive plans with, directors, officers and employees of the Consolidated Entities entered in the ordinary course of business, and (d) the granting of registration and other customary rights to holders of the Borrower's Capital Stock.

6.9 Cash Interest Expense. Permit Cash Interest Expense for any Test Period in which the Interest Coverage Ratio is less than 1.0: 1.0 to be greater than $25,000,000.

6.10 Minimum Unrestricted Cash Balance. Permit the Unrestricted Cash, at any time during any period below, to be less than the amount set opposite such period (provided, that if Net Sales for each of the two most recent fiscal quarters for which financial statements have been filed with the SEC are at least $25,000,000, the Borrower shall have no obligation to comply with this **Section 6.10**):

Period (Reduction Milestones requirements below)	Minimum Unrestricted Cash
From the Purchase Date (after giving effect to the Purchase of the Notes) until the First Reduction Milestone	$70,000,000
After the First Reduction Milestone until the Second Reduction Milestone	$50,000,000
After the Second Reduction Milestone until the Third Reduction Milestone	$40,000,000
After the Third Reduction Milestone until the Fourth Reduction Milestone	$30,000,000
After the Fourth Reduction Milestone	$25,000,000

Reduction Milestone	Requirements (with "Heplisav-B Units sold" being measured based upon Heplisav-B Units sold to end customers in the United States, as set forth on the 867 Product Transfer and Resale Reports received by the Consolidated Entities form wholesalers and distributors)
First Reduction Milestone	At least 63,000 Heplisav-B Units sold in each of two consecutive fiscal quarters, and at least 100,000 Heplisav-B Units sold in one of those two fiscal quarters, prior to the fifth fiscal quarter after the Heplisav-B Launch
Second Reduction Milestone	At least 100,000 Heplisav-B Units sold in each of two consecutive fiscal quarters, and at least 150,000 Heplisav-B Units sold in one of those two fiscal quarters, prior to the sixth fiscal quarter after the Heplisav-B Launch
Third Reduction Milestone	At least 150,000 Heplisav-B Units sold in each of two consecutive fiscal quarters, and at least 190,000 Heplisav-B Units sold in one of those two fiscal quarters, prior to the sixth fiscal quarter after the Heplisav-B Launch
Fourth Reduction Milestone	At least 190,000 Heplisav-B Units sold in each of two consecutive fiscal quarters, and at least 250,000 Heplisav-B Units sold in one of those two fiscal quarters, prior to the sixth fiscal quarter after the Heplisav-B Launch

6.11 [Reserved].

6.12 Lines of Business. Engage in any business other than the research, development, sale, distribution, manufacture and other commercialization of pharmaceutical products or compounds and any business reasonably related, ancillary or incidental thereto.

6.13 Certain Amendments. Amend, modify or change any provision of (i) its articles or certificate of incorporation or formation, bylaws, operating agreement or other applicable formation or organizational documents, as applicable, the terms of any class or series of its Capital Stock, or any agreement among the holders of its Capital Stock or any of them; (ii) the terms of the Convertible Notes after the date such Indebtedness is incurred; in each case other than in a manner that could not reasonably be expected to adversely affect the Purchasers in any material respect; or (iii) any Heplisav-B In License in a manner that would cause such Heplisav- B In License or any other Heplisav-B In License to fail to comply with the requirements for such licenses set forth in the proviso to the definition of "Heplisav-B Draw Condition."

6.14 Limitation on Certain Restrictions. Directly or indirectly, create or otherwise cause or suffer to exist or become effective any restriction, encumbrance or condition on (i) the ability of any Subsidiary of the Borrower to make any cash dividend payment or other cash distribution in respect of its Capital Stock, to repay Indebtedness owed to the Borrower or any other Subsidiary, to make loans or advances to the Borrower or any other Subsidiary, (ii) the ability of any Subsidiary of the Borrower to transfer any of its assets or properties to the Borrower or any other Subsidiary (including by way of dividend or distribution) or (iii) the creation, incurrence or assumption of any Lien upon or with respect to any part of the Borrower's or any of its Subsidiary's property or assets, whether now owned or hereafter acquired, except (A) in the case of clauses (i), (ii) and (iii), for such restrictions or encumbrances existing under or by reason of (1) the Credit Documents, (2) applicable law, (3) restrictions and conditions set forth in any Indebtedness permitted under **Section 6.2(xiii)** (provided, in each case, that the Liens created under the Security Documents are permitted), or (4) restrictions on cash, other deposits or net worth imposed by customers under contracts entered into in the ordinary course of business, or (B) in the case of clauses (ii) and (iii) only, for such restrictions or encumbrances existing under or by reason of (1) customary restrictions on the transfer or the creation, incurrence or assumption of any Lien contained in any agreement or instrument creating a Lien permitted under **Section 6.3** (provided that such restrictions apply only to the assets subject to such Lien), (2) customary non-assignment provisions in contracts or leases and licenses of real or personal property entered into by the Borrower or any Subsidiary as lessee or licensee in the ordinary course of business, restricting the assignment or transfer of such agreement and/or property that is the subject thereof, (3) customary restrictions and conditions contained in any agreement relating to the sale of assets (including Capital Stock of a Subsidiary) pending such sale (provided that such restrictions and conditions apply only to the assets being sold and such sale is permitted under this Agreement), (4) any restriction arising under or in connection with any agreement or instrument governing Capital Stock of any joint venture or any minority investment permitted hereunder; (5) with respect to any applicable Credit Party, restrictions and conditions set forth in the A/R Facility (provided that the Liens created under the Security Documents are permitted), and (6) restrictions and conditions imposed by agreements of any Person in existence at the time such Person became a Subsidiary and any amendments or modifications thereof that do not materially expand the scope of any such restriction or condition taken as a whole, provided that such restrictions and conditions apply only to such Person.

6.15 Fiscal Year. Change its fiscal year or its method of determining fiscal quarters (other than to conform to the fiscal year of the Borrower).

6.16 Accounting Changes. Other than as permitted pursuant to **Section 1.2**, make or permit any material change in its accounting policies or reporting practices, except as may be required by GAAP.

ARTICLE VII

EVENTS OF DEFAULT; REMEDIES

7.1 Events of Default. The occurrence of any one or more of the following events shall constitute an Event of Default hereunder:

(a) (i) The Borrower shall fail to pay any principal amount when due, or (ii) the Borrower fails to pay any interest, fees or other charges or amounts payable within three Business Days of when due, under this Agreement, the Notes or under any other Credit Document;

(b) Any Credit Party shall fail to observe or perform any covenant, restriction or agreement contained in **Section 5.1(a)**, **5.1(b)**, **5.2(a)(i)**, **5.3** (solely with respect to the Borrower), **5.9**, **5.10** or **ARTICLE VI**;

(c) Any Credit Party shall fail to observe or perform any covenant, restriction or agreement contained in any Credit Document (other than those described in **Sections 7.1(a)** and **7.1(b)**) for 30 days after the earlier of (i) the chief executive officer, chief financial officer, general counsel or any vice president obtaining actual knowledge of such failure or (ii) the Borrower receiving written notice of such failure from the Collateral Agent or the Required Purchasers;

(d) Any representation or warranty made or deemed made by any Credit Party in any Credit Document delivered pursuant to any Credit Document shall prove to have been incorrect in any material respect when made or deemed made; provided, that the words "in any material respect" shall not apply to any representation, warranty, certification or statement that contains any qualification with respect to materiality, including a reference to the defined term "Material Adverse Effect;"

(e) The occurrence and continuance of any event of default (after expiration of any applicable grace period) under the credit agreement or similar agreement governing the A/R Facility;

(f) The occurrence and continuance of any default or event of default on the part of any Credit Party (including events of default due to non-payment) under the terms of any agreement, document or instrument pursuant to which the Credit Parties have incurred any Indebtedness in excess of $10,000,000 or the occurrence of any other event or condition, the effect of which default, event or condition is to cause, or permit the holder or holders of such Indebtedness (or a trustee or agent on its or their behalf) to cause (with or without the giving of notice, lapse of time, or both), without regard to subordinated terms with respect thereto, such Indebtedness to become due or to be repurchased or redeemed (or an offer to repurchase or redeem such Indebtedness to be made) prior to its stated maturity (any applicable grace period having expired); provided, that this clause (e) shall not apply to (i) secured Indebtedness that

becomes due as a result of the voluntary sale or transfer of the property or assets securing such Indebtedness, (ii) any Indebtedness between or among the Consolidated Entities, and (iii) any conversion, exchange or settlement with respect to the Convertible Notes or any other Indebtedness convertible into or exchangeable for Qualified Capital Stock pursuant to its terms unless such conversion or settlement results from a default thereunder or an event of the type that constitutes an Event of Default and not otherwise prohibited by **Section 6.7(b)** (provided that the Borrower retains the right to settle such conversions, exchange or settlement in Qualified Capital Stock (and cash payable for any fractional shares));

(g) Any provision of the Security Documents shall for any reason cease to be in full force and effect or cease to be effective to give the Collateral Agent a valid and perfected security interest in and Lien upon (i) any Collateral related to Heplisav-B or (ii) any other Collateral in excess of, individually or in the aggregate, $500,000, in each case, purported to be covered thereby, subject to no Liens other than Permitted Liens, in each case unless any such cessation occurs in accordance with the terms thereof or is due to any act or failure to act on the part of the Collateral Agent or the Purchasers, or any Consolidated Entity or any Person acting on behalf thereof shall assert of the foregoing or deny or disaffirm any Credit Party's obligations under the Guaranty;

(h) Any Consolidated Entity (i) files a petition for relief under the Bankruptcy Code or any other insolvency law or seeking to adjudicate it bankrupt or insolvent, or seeking dissolution, winding up, liquidation, reorganization, arrangement, adjustment or composition of it or its debts under any law relating to bankruptcy, insolvency or reorganization or relief of debtors or fails to file an answer or other pleading denying the material allegations of any such proceeding filed against it, (ii) takes any corporate action to authorize or effect any of the foregoing actions, (iii) admits in writing its inability to pay its debts as such debts become due;
(iv) shall apply for, seek or consent to, or acquiesce in, the appointment of a custodian, receiver, trustee, examiner, liquidator or similar official for it or for any material portion of its assets;
(v) benefits from or is subject to the entry of an order for relief under any bankruptcy or insolvency law; or (vi) makes an assignment for the benefit of creditors;

(i) Failure of any Consolidated Entity within 60 days after the commencement of any proceeding against it seeking any reorganization, arrangement, composition, readjustment, liquidation, dissolution or similar relief under any present or future statute, law or regulation, to have such proceeding dismissed, or to have all orders or proceedings thereunder affecting the operations or the business of any Consolidated Entity stayed, or failure of any Consolidated Entity within 30 days after the appointment, without its consent or acquiescence, of any custodian, receiver trustee, examiner, liquidator or similar official for it or for any material portion of its assets, to have such appointment vacated;

(j) The entry of one or more judgments or orders for the payment of money in excess of $10,000,000 in the aggregate (excluding any amounts covered by insurance within available limits which the applicable insurer does not deny are covered thereby) against the Consolidated Entities and such judgment(s) or order(s) shall continue unsatisfied and unstayed for a period of 60 days or the issuance of a writ of execution, attachment or similar process against any Consolidated Entity that is not dismissed, stayed, discharged or bonded within 60 days after any Consolidated Entity acquires knowledge thereof; or

(k) The occurrence of any of the following: (i) any event or series of events that causes the Consolidated Entities to discontinue marketing or withdraw Heplisav-B in the United States, which discontinuance or withdrawal lasts for more than three months; (ii) any recall of the Heplisav-B Units that would reasonably be expected to result in liability in excess of $5,000,000; or (iii) for any two consecutive fiscal quarters after the first anniversary of the date of the Heplisav-B Launch, there is a reduction of 50% or greater in (1) the manufacturing capacity with respect to Heplisav-B or (2) the volume of Heplisav-B distributed to wholesalers and distributors, in each case as measured against the average quarterly capacity or volume for the prior four fiscal quarters of the Borrower.

7.2 Remedies. Upon the occurrence and during the continuance of any Event of Default:

(a) Acceleration of Indebtedness. The Required Purchasers may declare all or any part of the Notes immediately due and payable, (provided, however, that all Notes shall automatically become due and payable upon the occurrence of an Event of Default under **Section 7.1(h)** or **7.1(i)** with respect to the Borrower). Upon the Notes becoming due and payable under this **Section 7.2(a)**, whether by declaration or automatically, the Notes shall mature and the entire unpaid principal amount of the Notes, plus (i) all accrued and unpaid interest therein (including interest thereon at the Default Rate), (ii) the applicable Prepayment Premium determined with respect to the principal amount of the Notes as of the date of acceleration and (iii) an additional amount equal to the amount of interest that would have accrued from, and including, the date of acceleration to, but excluding, the third anniversary of the Purchase Date on the principal amount of the Notes outstanding immediately prior to such acceleration shall become immediately due and payable without presentment, demand, protest, notice or legal process of any kind, all of which are hereby expressly waived by the Borrower.

(b) Other Remedies. The Collateral Agent may with the approval of the Required Purchasers and shall at the direction of the Required Purchasers pursue all other remedies available to it by contract, at law or in equity, including its rights under the Security Documents.

(c) Right of Setoff. Each Purchaser may, and is hereby authorized by the Borrower to, at any time and from time to time, to the fullest extent permitted by applicable laws, without advance notice to the Borrower (any such notice being expressly waived by the Borrower), set off and apply any and all deposits (general or special, time or demand, provisional or final) at any time held and any other indebtedness at any time owing by such Purchaser or any of its Affiliates to or for the credit or the account of the Borrower against any or all of the Obligations now or hereafter existing, whether or not such obligations have matured. Each Purchaser agrees promptly to notify the Borrower, each other Purchaser and the Collateral Agent after any such setoff or application; provided, however, that the failure to give such notice shall not affect the validity of such setoff and application.

(d) Rights and Remedies Cumulative; Non-Waiver; etc. The enumeration of the Collateral Agent's and the Purchasers' rights and remedies set forth in this Agreement is not intended to be exhaustive and the exercise by the Collateral Agent or the Purchasers of any right or remedy shall not preclude the exercise of any other rights or remedies, all of which shall be cumulative, and shall be in addition to any other right or remedy given hereunder, under the

other Credit Documents or under any other agreement between the Borrower and the Collateral Agent or the Purchasers or that may now or hereafter exist in law or in equity or by suit or otherwise. No delay or failure to take action on the part of the Collateral Agent or the Purchasers in exercising any right, power or privilege shall operate as a waiver thereof, nor shall any single or partial exercise of any such right, power or privilege preclude other or further exercise thereof or the exercise of any other right, power or privilege or shall be construed to be a waiver of any Event of Default. No course of dealing between the Credit Parties and the Collateral Agent or the Purchasers or their agents or employees shall be effective to change, modify or discharge any provision of this Agreement or any of the other Credit Documents or to constitute a waiver of any Event of Default.

ARTICLE VIII

THE COLLATERAL AGENT

8.1 Appointment and Authority. Each of the Purchasers hereby irrevocably appoints Deerfield to act on its behalf as the Collateral Agent hereunder and under the other Credit Documents and authorizes the Collateral Agent to take such actions on its behalf, including the execution of the other Credit Documents, and to exercise such powers as are delegated to the Collateral Agent by the terms hereof or thereof, together with such actions and powers as are reasonably incidental thereto. Each of the Purchasers hereby irrevocably appoints and authorizes the Collateral Agent to act as the agent of such Purchaser for purposes of acquiring, holding and enforcing any and all Liens on Collateral granted by any of the Credit Parties to secure any of the Obligations, together with such powers and discretion as are reasonably incidental thereto. Except for the last paragraph of **Section 8.8**, the provisions of this **ARTICLE VIII** are solely for the benefit of the Collateral Agent and the Purchasers, and neither the Borrower nor any other Credit Party shall have rights as a third party beneficiary of any of such provisions. Subject to **Section 8.8** and **Section 9.10**, any action required or permitted to be taken by the Collateral Agent hereunder shall be taken with the prior approval of the Required Purchasers.

8.2 Rights as a Purchaser. The Person serving as the Collateral Agent hereunder shall have the same rights (including under **Section 2.11**) and powers, and shall be subject to the same obligations under **Section 2.11**, as any other Purchaser and may exercise the same as though it were not the Collateral Agent and the term "Purchaser" or "Purchasers" shall, unless otherwise expressly indicated or unless the context otherwise requires, include the Person serving as the Collateral Agent hereunder. Such Person and its Affiliates may lend money to, own securities of, act as the financial advisor or in any other advisory capacity for and generally engage in any kind of business with the Borrower or any Subsidiary or other Affiliate thereof as if such Person were not the Collateral Agent hereunder and without any duty to account therefor to the Purchasers.

8.3 Exculpatory Provisions.

(a) The Collateral Agent shall not have any duties or obligations except those expressly set forth herein and in the other Credit Documents to which it is a party. Without limiting the generality of the foregoing, the Collateral Agent:

(i) shall not be subject to any fiduciary or other implied duties, regardless of whether a Default or Event of Default has occurred and is continuing;

(ii) shall not have any duty to take any discretionary action or exercise any discretionary powers, except discretionary rights and powers expressly contemplated hereby or by the other Credit Documents to which it is a party that the Collateral Agent is required to exercise as directed in writing by the Required Purchasers (or such other number or percentage of the Purchasers as shall be expressly provided for herein or in such other Credit Documents), provided that the Collateral Agent shall not be required to take any action that, in its opinion or the opinion of its counsel, may expose the Collateral Agent to liability or that is contrary to any Credit Document or applicable law; and

(iii) shall not, except as expressly set forth herein and in the other Credit Documents to which it is a party, have any duty to disclose, and shall not be liable for the failure to disclose, any information relating to the Borrower or any of its Affiliates that is communicated to or obtained by the Person serving as the Collateral Agent or any of its Affiliates in any capacity.

(b) The Collateral Agent shall not be liable for any action taken or not taken by it (i) with the consent or at the request of the Required Purchasers (or such other number or percentage of the Purchasers as shall be necessary, or as the Collateral Agent shall believe in good faith shall be necessary, under the circumstances as provided in **Sections 9.10**) or (ii) in the absence of its own gross negligence or willful misconduct as determined by a court of competent jurisdiction by final and nonappealable judgment. The Collateral Agent shall be deemed not to have knowledge of any Default or Event of Default unless and until notice describing such Default or Event of Default is given to the Collateral Agent in writing by the Borrower or a Purchaser.

(c) The Collateral Agent shall not be responsible for or have any duty to ascertain or inquire into (i) any statement, warranty or representation made in or in connection with this Agreement or any other Credit Document, (ii) the contents of any certificate, report or other document delivered hereunder or thereunder or in connection herewith or therewith, (iii) the performance or observance of any of the covenants, agreements or other terms or conditions set forth herein or therein or the occurrence of any Default or Event of Default, (iv) the validity, enforceability, effectiveness or genuineness of this Agreement, any other Credit Document or any other agreement, instrument or document or (v) the satisfaction of any condition set forth in **ARTICLE III** or elsewhere herein, other than to confirm receipt of items expressly required to be delivered to the Collateral Agent.

8.4 Reliance by Collateral Agent. The Collateral Agent shall be entitled to rely upon, and shall not incur any liability for relying upon, any notice, request, certificate, consent, statement, instrument, document or other writing (including any electronic message, internet or intranet website posting or other distribution) believed by it to be genuine and to have been signed, sent or otherwise authenticated by the proper Person. The Collateral Agent also may rely upon any statement made to it orally or by telephone and believed by it to have been made by the proper Person, and shall not incur any liability for relying thereon. The Collateral Agent may consult with legal counsel (who may be counsel for the Borrower), independent accountants and

other experts selected by it, and shall not be liable for any action taken or not taken by it in accordance with the advice of any such counsel, accountants or experts.

8.5 Delegation of Duties. The Collateral Agent may perform any and all of its duties and exercise its rights and powers hereunder or under any other Credit Document by or through any one or more sub-agents appointed by the Collateral Agent. The Collateral Agent and any such sub-agent may perform any and all of its duties and exercise its rights and powers by or through their respective Related Parties. The exculpatory provisions of this Article shall apply to any such sub-agent and to the Related Parties of the Collateral Agent and any such sub-agent. The Collateral Agent shall not be responsible for the negligence or misconduct of any sub-agent except to the extent that a court of competent jurisdiction determines in a final and nonappealable judgment that the Collateral Agent acted with gross negligence or willful misconduct in the selection of such sub-agent.

8.6 Resignation of Collateral Agent. The Collateral Agent may at any time give notice of its resignation to the Purchasers and the Borrower. Upon the receipt of any such notice of resignation, the Required Purchasers shall have the right, in consultation with the Borrower so long as no Default has occurred and is continuing, to appoint a successor. If no successor shall have been so appointed by the Required Purchasers and shall have accepted such appointment within 30 days after the retiring Collateral Agent gives notice of its resignation, then the retiring Collateral Agent may, on behalf of the Purchasers, appoint a successor Collateral Agent; provided that, whether or not a successor has been appointed or has accepted such appointment, such resignation shall become effective upon delivery of the notice thereof. Upon the acceptance of a successor's appointment as Collateral Agent hereunder, such successor shall succeed to and become vested with all of the rights, powers, privileges and duties of the retiring (or retired) Collateral Agent, and the retiring Collateral Agent shall be discharged from all of its duties and obligations under the Credit Documents (if not already discharged therefrom as provided above in this **Section 8.6**). After the retiring Collateral Agent's resignation, the provisions of this **ARTICLE VIII** and **Section 9.2** shall continue in effect for the benefit of such retiring Collateral Agent, its sub-agents and their respective Related Parties in respect of any actions taken or omitted to be taken by any of them while the retiring Collateral Agent was acting as Collateral Agent. Upon any resignation by the Collateral Agent, all payments, communications and determinations provided to be made by, to or through the Collateral Agent shall instead be made by, to or through each Purchaser directly, until such time as a Person accepts an appointment as Collateral Agent in accordance with this **Section 8.6**.

8.7 Non-Reliance on Collateral Agent and Other Purchasers. Each Purchaser acknowledges that it has, independently and without reliance upon the Collateral Agent or any other Purchaser or any of their Related Parties and based on such documents and information as it has deemed appropriate, made its own credit analysis and decision to enter into this Agreement and purchase the Notes hereunder. Each Purchaser also acknowledges that it will, independently and without reliance upon the Collateral Agent or any other Purchaser or any of their Related Parties and based on such documents and information as it shall from time to time deem appropriate, continue to make its own decisions in taking or not taking action under or based upon this Agreement, any other Credit Document or any related agreement or any document furnished hereunder or thereunder.

8.8 Collateral and Guaranty Matters. Each Purchaser agrees that any action taken by the Collateral Agent or the Required Purchasers in accordance with the provisions of this Agreement or of the other Credit Documents, and the exercise by the Collateral Agent or Required Purchasers of the powers set forth herein or therein, together with such other powers as are reasonably incidental thereto, shall be authorized and binding upon all of the Purchasers. Without limiting the generality of the foregoing, the Purchasers irrevocably authorize the Collateral Agent, at its option and in its discretion:

(a) to release any Lien on any property granted to or held by the Collateral Agent under any Security Document (A) upon discharge of the Obligations, (B) that is sold, transferred, disposed or to be sold, transferred, disposed as part of or in connection with any sale, transfer o or other disposition (other than any sale to a Credit Party; provided, however that the Collateral Agent may make any filings necessary to reflect the transfer of Collateral from one Credit Party to another) permitted hereunder or otherwise becomes an Excluded Property (as defined in the Security Agreement), (C) subject to **Section 9.10**, if approved, authorized or ratified in writing by the Required Purchasers or (D) to the extent such property is owned by a Subsidiary Guarantor upon the release of such Subsidiary Guarantor from its obligations under its Guaranty pursuant to clause (c) below;

(b) to subordinate any Lien on any property granted to or held by the Collateral Agent under any Loan Document to the holder of any Lien on such property that is permitted by clause (iii), (iv), (xxii), (xxiii) and (xxv) of **Section 6.3**;

(c) to release any Subsidiary Guarantor from its obligations under the Guaranty Agreement if such Person ceases to be a Subsidiary as a result of a transaction permitted hereunder;

(d) to enter into non-disturbance and similar agreements in connection with the licensing of Intellectual Property permitted pursuant to the terms of this Agreement in form and substance reasonably satisfactory to the Collateral Agent and the applicable licensor; and

(e) to enter into an intercreditor agreement as contemplated by **Section 6.2(iv)**.

Upon request by the Collateral Agent at any time the Required Purchasers will confirm in writing the Collateral Agent's authority to release or subordinate its interest in particular types or items of property, or to release any Subsidiary Guarantor from its obligations under the Guaranty pursuant to this **Section 8.8**

In each case as specified in this **Section 8.8**, the Collateral Agent will (and each Purchaser irrevocably authorizes the Collateral Agent to), at the Borrower's expense, execute and deliver to the applicable Credit Party such documents as such Credit Party may reasonably request (i) to evidence the release or subordination of such item of collateral from the assignment and security interest granted under the Security Documents, (ii) to enter into non-disturbance or similar agreements in connection with the licensing of Intellectual Property, (iii) to enter into an intercreditor agreement as contemplated by **Section 6.2(iv)** or (iv) to evidence the release of such Subsidiary Guarantor from its obligations under the Guaranty, in each case in accordance with

the terms of the Credit Documents and this **Section 8.8** and in form and substance reasonably acceptable to the Collateral Agent.

The Collateral Agent shall deliver to the Purchasers notice of any action taken by it under this **Section 8.8** as soon as reasonably practicable after the taking thereof; provided, that delivery of or failure to deliver any such notice shall not affect the Collateral Agent's rights, powers, privileges and protections under this **ARTICLE VIII**.

8.9 Reimbursement by Purchasers. To the extent that the Borrower for any reason fails to indefeasibly pay any amount required under **Section 9.1** or **9.2** to be paid by it to the Collateral Agent (or any sub-agent thereof) or any Related Party of any of the foregoing, each Purchaser severally agrees to pay to the Collateral Agent (or any such sub-agent) or such Related Party, as the case may be, such Purchaser's pro rata share (based upon the percentages as used in determining the Required Purchasers as of the time that the applicable unreimbursed expense or indemnity payment is sought) of such unpaid amount; provided that the unreimbursed expense or indemnified loss, damage, liability or related expense, as the case may be, was incurred by or asserted against the Collateral Agent (or any such sub-agent) in its capacity as such or against any Related Party of any of the foregoing acting for the Collateral Agent (or any sub-agent) in connection with such capacity.

ARTICLE IX
MISCELLANEOUS

9.1 Costs and Expenses. The Borrower agrees to pay on demand all reasonable and documented out-of-pocket expenses of the Collateral Agent and the Purchasers, including reasonable fees and disbursements of counsel, in connection with: (i) the preparation, execution, delivery, and filing, if required of this Agreement and the other Credit Documents (provided that the obligation to reimburse under clause (i) shall not exceed $225,000), (ii) any amendments, supplements, consents or waivers hereto or to the other Credit Documents and (iii) the administration or enforcement of this Agreement and the other Credit Documents. In addition, the Borrower shall pay, or reimburse the relevant Purchaser for, all Other Taxes in accordance with **Section 2.11(b)**. It is the intention of the parties hereto that the Borrower shall pay amounts referred to in this **Section 9.1** directly. In the event the Collateral Agent or any Purchaser pays any of the amounts referred to in this **Section 9.1** directly, the Borrower will reimburse the Collateral Agent or such Purchaser for such advances and interest on such advance shall accrue until reimbursed at the Default Rate. Notwithstanding anything in this **Section 9.1** to the contrary, the Purchasers and the Borrower agree that the costs (including reasonable fees and disbursements of counsel and any Other Taxes incurred upon the execution, recording or registration) with respect to the condition that 65% of the outstanding voting Capital Stock and 100% of the outstanding non-voting Capital Stock of Dynavax GmbH be pledged to the Collateral Agent, as more fully described in **Section 3.2(a)(iii)**, shall be borne by the Borrower, provided that the Purchasers will contribute to such costs an aggregate amount equal to the lesser of (x) one-half of the costs and expenses incurred by the Borrower, the Collateral Agent and the Purchasers and (y) $75,000.

9.2 Indemnification. From and at all times after the date of this Agreement, and in addition to all of the Collateral Agent's and the Purchasers' other rights and remedies against the Borrower, the Borrower agrees to indemnify, defend and hold harmless the Collateral Agent and the Purchasers and their respective Related Parties from and against all damages, losses and other out-of-pocket costs and expenses of any kind or nature whatsoever (including reasonable attorneys' fees and expenses, court costs and fees, and consultant and expert witness fees and expenses, but limited in the case of attorney's fees and expenses to the reasonable and documented out of pocket fees, disbursements and other charges of one counsel to the indemnified parties, taken as a whole and if reasonably necessary, one local counsel in each appropriate jurisdiction (and, in the case of a conflict of interest, where the indemnitee affected by such conflict notifies the Borrower of the existence of such conflict and thereafter retains its own counsel, one additional separate counsel for all similarly affected indemnitees) (collectively "Costs") arising in any manner, directly or indirectly, out of or by reason of any and all claims (whether valid or not), actions, suits, inquiries, investigations and administrative proceedings, and including those brought by the Borrower or another Consolidated Entity (collectively, "Proceedings") relating to (i) the negotiation, preparation, execution or performance of this Agreement or the other Credit Documents, or any transaction contemplated herein or therein, whether or not any party protected under this **Section 9.2** is a party to, or target of, any Proceeding in question (provided, however, that no indemnified party shall have the right to be indemnified hereunder for any liability resulting from the willful misconduct or gross negligence of such indemnified party (as finally determined by a court of competent jurisdiction), material breach by any Purchaser of its obligations under this Agreement (including any failure by a Purchaser to purchase the Notes as required hereunder), or disputes that are solely among Purchasers or among the Collateral Agent and the Purchasers), (ii) any breach of any of the covenants, warranties or representations of any Credit Party hereunder or under any other Credit Document, (iii) any Lien or charge upon amounts payable hereunder by any Credit Party to the Purchasers or any taxes, assessments, impositions and other charges in respect of the collateral described in the Security Documents, (iv) any violation or alleged violation of any Environmental Law, federal or state securities law, common law, equitable requirement or other legal requirement by any Credit Party or with respect to any property owned, leased or operated by any Credit Party (in the past, currently or in the future), or (v) any presence, generation, treatment, storage, disposal, transport, movement, release, suspected release or threatened release of any Hazardous Material on, in, to or from any property (or any part thereof including the soil and groundwater thereon and thereunder) owned, leased or operated by any Credit Party (in the past, currently or in the future). All Costs shall be additional Obligations under this Agreement, shall be payable on demand to the party to be indemnified and shall be secured by the Lien of the Security Documents. Without limiting the foregoing, the Borrower shall be obligated to pay, on demand, the costs of any investigation, monitoring, assessment, enforcement, removal, remediation, restoration or other response or corrective action undertaken by the Collateral Agent or the Purchasers or any other indemnified party, or their respective agents, with respect to any property owned, leased or operated by any Credit Party. The obligations of the Borrower under this **Section 9.2** shall not be limited to any extent by payment of the Obligations and termination of this Agreement and shall remain in full force and effect until expressly terminated by the Purchasers in writing. This **Section 9.2** shall not apply with respect to Taxes other than any Taxes that represent losses, claims, damages, etc. arising from any non-Tax claim.

9.3 Governing Law. This Agreement and the other Credit Documents and any claims, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement or any other Credit Document (except as may be expressly otherwise provided in any Credit Document) shall be governed by, and construed in accordance with, the law of the State of New York (including Sections 5-1401 and 5-1402 of the New York General Obligations Law, but excluding all other choice of law and conflicts of law rules).

9.4 Consent to Jurisdiction; Waiver of Jury Trial. The Borrower irrevocably and unconditionally agrees that it will not commence any action, litigation or proceeding of any kind or description, whether in law or equity, whether in contract or in tort or otherwise, against any Purchaser, the Collateral Agent or any Affiliate of any of the foregoing in any way relating to this Agreement or any other Credit Document or the transactions relating hereto or thereto, in any forum other than the courts of the State of New York sitting in the City and County of New York and of the United States District Court of the Southern District of New York and any appellate court thereof, and each of the parties hereto irrevocably and unconditionally submits to the jurisdiction of such courts and agrees that all claims in respect of any such action, litigation or proceeding may be heard and determined in such state court or, to the fullest extent permitted by applicable law, in such federal court. Each of the parties hereto agrees that a final judgment in any such action, litigation or proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by law. Nothing in this Agreement or in any other Credit Document shall affect any right that any Purchaser or the Collateral Agent may otherwise have to bring any action or proceeding relating to this Agreement or any other Credit Document against the Borrower or any other Credit Party or its properties in the courts of any jurisdiction. **EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR ANY OTHER CREDIT DOCUMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY). EACH PARTY HERETO (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PERSON HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PERSON WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND (B) ACKNOWLEDGES THAT IT AND THE OTHER PARTIES HERETO HAVE BEEN INDUCED TO ENTER INTO THIS AGREEMENT AND THE OTHER CREDIT DOCUMENTS BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.**

9.5 Notices. All demands, notices, approvals, consents, requests, and other communications hereunder shall be in writing and shall be deemed to have been given when the writing is delivered, if given or delivered by hand, overnight delivery service or facsimile transmitter (with confirmed receipt), or five days after being mailed, if mailed, by first class, registered or certified mail, postage prepaid, to the address set forth below:

Party	Address
Borrower	2929 Seventh Street, Suite 100 Berkeley, CA 94710-2753 Fax: (510) 665-7287 Attention: General Counsel
Collateral Agent	c/o Deerfield Management Company, L.P. 780 Third Avenue, 37th Floor New York, NY 10017 Fax: (212) 599-3075 Attention: Jon Isler With a copy (which shall not constitute notice) to: Robinson, Bradshaw & Hinson, P.A. 101 North Tryon Street, Suite 1900 Charlotte, NC 28246 Fax: (704) 373-3964 Attention: S. Graham Robinson
Any Purchaser	To the address set forth on **Exhibit A** for such Purchaser.

The Borrower or any Purchaser may, by notice given hereunder, designate any further or different addresses to which subsequent demands, notices, approvals, consents, requests or other communications shall be sent or persons to whose attention the same shall be directed.

9.6 Continuing Obligations. All agreements, representations and warranties contained herein or made in writing by or on behalf of any Credit Party in connection with the transactions contemplated hereby shall survive the execution and delivery of the Credit Documents. The Borrower further agrees that to the extent any Credit Party makes a payment to the Collateral Agent or the Purchasers, which payment or any part thereof is subsequently invalidated, declared to be fraudulent or preferential, set aside or required to be repaid to a trustee, receiver or any other party under any bankruptcy, insolvency or other similar state or federal statute, or principle of equity, then, to the extent of such repayment by the Collateral Agent or the Purchasers, the Obligation or part thereof intended to be satisfied by such payment shall be revived and continued in full force and effect as if such payment had not been received by the Collateral Agent or the Purchasers.

9.7 Successors and Assigns. This Agreement shall be binding upon the Borrower and its respective successors and assigns and all rights against the Borrower arising under this Agreement shall be for the sole benefit of the Collateral Agent and the Purchasers.

9.8 Assignment and Sale. The Borrower may not sell, assign or transfer this Agreement or any of the other Credit Documents or any portion hereof or thereof, including their respective rights, title, interests, remedies, powers, and duties hereunder or thereunder. Nothing in any Credit Document shall prohibit the Purchasers from pledging or assigning this Agreement, the Notes and the Purchasers' rights under any of the Credit Documents, including collateral therefor, or any portion hereof or thereof to any Person other than a Restricted Transferee; provided that, in the case of an assignment of the Notes or any rights or participations therein, such Person shall agree in writing to the provisions hereof applicable to Purchasers (including the provisions of **ARTICLE VIII** and **Sections 9.10** and **9.11)**. Any assignee or successor to a Purchaser shall become a "Purchaser" under this Agreement at the time such Person's ownership interest in a Note is recorded in the Register and such Person shall be subject to the obligations set forth in this Agreement.

9.9 Entire Agreement. **THIS AGREEMENT AND THE DOCUMENTS AND INSTRUMENTS EXECUTED AND DELIVERED CONTEMPORANEOUSLY HEREWITH EMBODY THE ENTIRE AGREEMENT AND UNDERSTANDING BETWEEN THE PARTIES HERETO AND SUPERSEDE ALL PRIOR AGREEMENTS AND UNDERSTANDINGS OF SUCH PERSONS, VERBAL OR WRITTEN, RELATING TO THE SUBJECT MATTER HEREOF. THIS AGREEMENT AND THE DOCUMENTS AND INSTRUMENTS EXECUTED IN CONNECTION HEREWITH REPRESENT THE FINAL AGREEMENT BETWEEN THE PARTIES AND MAY NOT BE CONTRADICTED BY PRIOR, CONTEMPORANEOUS OR SUBSEQUENT ORAL AGREEMENTS OF THE PARTIES. THERE ARE NO UNWRITTEN ORAL AGREEMENTS BETWEEN THE PARTIES.**

9.10 Amendment. No amendment, modification, waiver or discharge or termination of, or consent to any departure by any Credit Party from, any provision of this Agreement or any other Credit Document shall be effective unless in a writing signed by the Required Purchasers, and then the same shall be effective only in the specific instance and for the specific purpose for which given; provided, however, that no such amendment, modification, waiver, discharge, termination or consent shall:

(a) unless agreed to by each Purchaser directly affected thereby, (i) reduce or forgive the principal amount of any Note, reduce the rate of or forgive any interest thereon, or reduce or forgive any premium or fees hereunder, (ii) extend the final scheduled maturity date or any other scheduled date for the payment of any principal of or interest on any Note, or extend the time of payment of any premium or fees hereunder, (iii) increase any Commitment of any such Purchaser over the amount thereof in effect or extend the maturity thereof (it being understood that a waiver of any condition precedent set forth in **Section 3.2** or of any Default or Event of Default or mandatory reduction in the Commitments, if agreed to by the Required Purchasers or all Purchasers (as may be required hereunder with respect to such waiver), shall not constitute such an increase), (iv) reduce the percentage of the aggregate Commitments or of the aggregate outstanding principal amount of the Notes, or the number or percentage of Purchasers, that shall

be required for the Purchasers or any of them to take or approve, or direct the Collateral Agent to take, any action hereunder or under any other Credit Document (including as set forth in the definition of "Required Purchasers"), (v) change any other provision of this Agreement or any of the other Credit Documents requiring, by its terms, the consent or approval of all the Purchasers for such amendment, modification, waiver, discharge, termination or consent, (vi) change or waive any provision of **Section 2.12**, any other provision of this Agreement or any other Credit Document requiring pro rata treatment of any Purchasers, or this **Section 9.10**, or (vii) release any lien on all or substantially all of the collateral pledged by the Credit Parties under the Security Documents other than in connection with a sale or transfer of assets permitted by this Agreement; and

(b) unless agreed to by the Collateral Agent in addition to the Purchasers required as provided hereinabove to take such action, affect the respective rights or obligations of the Collateral Agent, as applicable, hereunder or under any of the other Credit Documents.

9.11 Treatment of Certain Information; Confidentiality. Each of the Collateral Agents and the Purchasers agrees to maintain the confidentiality of the Information (as defined below), except that Information may be disclosed (a) to its Affiliates and to its and its Affiliates' respective partners, directors, officers, employees, agents, advisors, managing members or managers, counsel, accountants and other representatives (collectively, "Representatives") (it being understood that the Persons to whom such disclosure is made will be informed of the confidential nature of such Information and instructed to keep such Information confidential and the person making such disclosure shall remain liable and be responsible for any breach by such Representative of the provisions of this **Section 9.11**), (b) to the extent requested by any Governmental Authority or regulatory authority (including any self-regulatory authority, such as the National Association of Insurance Commissioners) (in which case, the Collateral Agent or such Purchaser, as applicable, shall use reasonable efforts to notify the Borrower prior to such disclosure to the extent practicable and legally permitted to do so), (c) to the extent required by applicable Requirements of Laws or by any subpoena or similar legal process, (d) to any other party hereto, (e) in connection with the exercise of any remedies hereunder or under any other Credit Document or any action or proceeding relating to this Agreement or any other Credit Document or the enforcement of rights hereunder or thereunder, (f) to any state, federal or foreign authority or examiner regulating any Purchaser, (g) subject to an agreement containing provisions substantially the same as those of this **Section 9.11**, to any actual or prospective permitted assignee of the Purchaser (or their Representatives, it being understood that the Persons to whom such disclosure is made will be informed of the confidential nature of such Information and instructed to keep such Information confidential), (h) with the consent of the Borrower, or (i) to the extent such Information becomes available to the Collateral Agent, any Purchaser or any of their respective Affiliates on a non-confidential basis from a source other than a Consolidated Entity; provided that, to the knowledge of the recipient of such Information, the source of such Information was not and is not bound by any contractual or other obligation of confidentiality to the Borrower or any other Person with respect to any of such information. For purposes of this Section, "Information" means all information received from any Consolidated Entity relating to any Consolidated Entity or any of their respective businesses excluding any such information that is generally available to the public, other than as a direct or indirect result of the disclosure of any of such information by the Collateral Agent, any Purchaser or any of their Representatives.

9.12 Representations and Warranties of the Purchasers. Each Purchaser, severally and not jointly, represents and warrants to the Borrower as of the date hereof and as of each date that any Notes are issued to such Purchaser, that:

(a) Such Purchaser is duly organized and validly existing under the laws of the jurisdiction of its formation. Each Credit Document to which it is a party has been duly authorized, executed and delivered by such Purchaser and constitutes the valid and legally binding obligation of such Purchaser, enforceable against such Purchaser in accordance with its terms, except as enforcement may be limited by bankruptcy, insolvency, reorganization, moratorium or other similar laws, statutes or rules of general application affecting the enforcement of creditor's rights or general principles of equity.

(b) Each of the Notes to be received by such Purchaser hereunder will be acquired for such Purchaser's own account, and not with a view to the resale or distribution of any part thereof in violation of the Securities Act, except pursuant to sales registered or exempted under the Securities Act, and such Purchaser has no present intention of selling, granting any participation in, or otherwise distributing the same in violation of the Securities Act without prejudice, however, to such Purchaser's right at all times to sell or otherwise dispose of all or any part of such Notes in compliance with applicable federal and state securities laws.

(c) Such Purchaser can bear the economic risk and complete loss of its investment in the Notes and has such knowledge and experience in financial or business matters that it is capable of evaluating the merits and risks of the investment contemplated hereby.

(d) Such Purchaser has had an opportunity to receive, review and understand all information related to the Borrower requested by it and to ask questions of and receive answers from the Borrower regarding the Borrower, its business and the terms and conditions of the offering of the Notes, and has conducted and completed its own independent due diligence. Such Purchaser acknowledges receipt of copies of the Borrower's filings with the SEC. Based on the information such Purchaser has deemed appropriate, it has independently made its own analysis and decision to enter into the Credit Documents.

(e) Such Purchaser understands that the Notes are characterized as "restricted securities" under the U.S. federal securities laws inasmuch as they are being acquired from the Borrower in a transaction not involving a public offering and that under such laws and applicable regulations such securities may be resold without registration under the Securities Act only in certain limited circumstances. Such Purchaser understands that no United States federal or state agency, or similar agency of any other country, has reviewed, approved, passed upon, or made any recommendation or endorsement of the Borrower or the purchase of the Notes.

(f) Such Purchaser is an "accredited investor" in Regulation D promulgated under the 1933 Act.

(g) Such Purchaser did not learn of the investment in the Loan Securities as a result of any general solicitation or general advertising.

9.13 Termination. This Agreement shall terminate and shall cease to be further force and effect if the Purchasers shall not have purchased the Notes on or prior to the Termination

Date; provided that **Section 9.3** shall survive such termination and the obligations of the Borrower pursuant to **Sections 2.4**, **2.11**, **9.1**, **9.2**and **9.4**, shall survive such termination.

9.14 Severability. In the event that any provision of this Agreement shall be determined to be invalid or unenforceable by any court of competent jurisdiction, such determination shall not invalidate or render unenforceable any other provision hereof.

9.15 Counterparts. This Agreement may be executed in several counterparts, each of which shall be an original and all of which, together shall constitute but one and the same instrument. Delivery of an executed counterpart of a signature page of this Agreement by facsimile or in electronic format (e.g., "pdf," "tif" or similar file formats) shall be effective as delivery of a manually executed counterpart of this Agreement.

9.16 Captions. The captions to the various sections and subsections of this Agreement have been inserted for convenience only and shall not limit or affect any of the terms hereof.

[The remainder of this page is left blank intentionally.]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed and delivered by their respective duly authorized officers as of the date first above written.

DYNAVAX TECHNOLOGIES CORPORATION, as the Borrower

By: /s/ MICHAEL OSTRACH
Name: Michael Ostrach
Title: Senior Vice President and Chief Financial Officer

DEERFIELD PARTNERS, L.P., as Collateral Agent and as a Purchaser

By: Deerfield Mgmt, L.P. General Partner

By: J.E
Flynn Capital, LLC General Partner

By: /s/ DAVID J. CLARK
Name: David J. Clark
Title: Authorized Signatory

DEERFIELD INTERNATIONAL MASTER FUND, L.P., as a Purchaser

By: Deerfield Mgmt, L.P. General Partner

By: J.E
Flynn Capital, LLC General Partner

By: /s/ DAVID J. CLARK
Name: David J. Clark
Title: Authorized Signatory

EXHIBIT A COMMITMENTS; NOTICE ADDRESSES

Purchaser	Commitment	Notice Address
Deerfield Partners, L.P.	$43,800,000	c/o Deerfield Management Company, L.P. 780 Third Avenue, 37th Floor New York, NY 10017 Fax: (212) 599-3075 Attention: Jon Isler
Deerfield International Master Fund, L.P.	$56,200,000	c/o Deerfield Management Company, L.P. 780 Third Avenue, 37th Floor New York, NY 10017 Fax: (212) 599-3075 Attention: Jon Isler
TOTAL	**$100,000,000**	

EXHIBIT B
[RESERVED]

EXHIBIT C FORM OF
NOTE

SENIOR SECURED NOTE

$**[●]** [●], 20[●]

FOR VALUE RECEIVED, **DYNAVAX TECHNOLOGIES CORPORATION**, a Delaware corporation (the "Borrower"), hereby promises to pay to **[●]**, a [●] (the "Purchaser"), at its offices located at **[●]** (or at such other place or places as the Purchaser may designate), at the times and in the manner provided in the Note Purchase Agreement, dated as of **October 26, 2016** (as amended, modified, restated or supplemented from time to time, the "Note Purchase Agreement"), among the Borrower, the Purchasers from time to time parties thereto, and Deerfield Partners, L.P., a Delaware limited partnership, as Collateral Agent and a Purchaser, the principal sum of **[●]** ($**[●]**.00), under the terms and conditions of this senior secured note (this "Note") and the Note Purchase Agreement. The defined terms in the Note Purchase Agreement are used herein with the same meaning. The Borrower also promises to pay interest on the aggregate unpaid principal amount of this Note at the rates applicable thereto from time to time as provided in the Note Purchase Agreement.

This Note is one of the Notes referred to in the Note Purchase Agreement and is issued to evidence the purchase thereof by the Purchaser pursuant to the Note Purchase Agreement. All of the terms, conditions and covenants of the Note Purchase Agreement are expressly made a part of this Note by reference in the same manner and with the same effect as if set forth herein at length, and any holder of this Note is entitled to the benefits of and remedies provided in the Note Purchase Agreement and the other Credit Documents. Reference is made to the Note Purchase Agreement for provisions relating to the interest rate, maturity, payment, prepayment and acceleration of this Note.

In the event of an acceleration of the maturity of this Note pursuant to the Note Purchase Agreement, this Note shall become immediately due and payable, without presentation, demand, protest or notice of any kind, all of which are hereby waived by the Borrower.

In the event this Note is not paid when due at any stated or accelerated maturity, the Borrower agrees to pay, in addition to the principal and interest, all costs of collection, including reasonable attorneys' fees.

This Note and any claims, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Note shall be governed by, and construed in accordance with, the law of the State of New York. The Borrower hereby submits to the nonexclusive jurisdiction and venue of the courts of the State of New York sitting in the City and County of New York and of the United States District Court of the Southern District of New York, and any appellate court from any thereof, although the Purchaser shall not be limited to bringing an action in such courts.

[THIS NOTE IS ISSUED WITH ORIGINAL ISSUE DISCOUNT ("OID") FOR U.S. FEDERAL INCOME TAX PURPOSES. THE ISSUE PRICE, AMOUNT OF OID, ISSUE DATE AND YIELD TO MATURITY WITH RESPECT TO THIS NOTE MAY BE OBTAINED BY WRITING TO THE BORROWER AT THE FOLLOWING ADDRESS: 2929 SEVENTY STREET, SUITE 100, BERKELEY, CALIFORNIA 94710, ATTENTION: [●], FAX NUMBER: [●].]

[*Remainder of page left blank intentionally; signature page follows.*]

IN WITNESS WHEREOF, the Borrower has caused this Note to be executed by its duly authorized corporate officer as of the day and year first above written.

DYNAVAX TECHNOLOGIES CORPORATION

By:
Name:
Title:

EXHIBIT D

FORM OF PURCHASE NOTICE

[●], 20[●]

[Insert Name and Address Of
Purchasers]

Ladies and Gentlemen:

The undersigned, Dynavax Technologies Corporation (the "Borrower"), refers to the Note Purchase Agreement, dated as of October 26, 2016, among the Borrower, the Collateral Agent, and certain Purchasers party thereto (as amended, modified, restated or supplemented from time to time, the "Note Purchase Agreement," the terms defined therein being used herein as therein defined). Pursuant to Section 2.1(b) of the Note Purchase Agreement, the Borrower hereby gives you irrevocable notice that the Borrower desires to issue and sell to each Purchaser, and requests that each Purchaser purchase, a Note with an original principal amount equal to such Purchaser's Commitment subject to and on the terms and conditions set forth in the Note Purchase Agreement, and to that end sets forth below the information relating to such requested sale and purchase as required by Section 2.1(b) of the Investment Agreement:

(i) The date of sale and purchase of the Notes is requested to be [●], 20[●] (the "Purchase Date").

(ii) The Borrower directs each Purchaser to wire the Note purchase proceeds to and on behalf of the Borrower in accordance with the payment and wiring instructions attached hereto as **Schedule A**.

The Borrower acknowledges that the Purchasers' obligations to purchase the Notes shall be subject to the satisfaction of the conditions set forth in Section 3.2 to the Note Purchase Agreement.

[*The remainder of this page is left blank intentionally.***]**

Very truly yours,

DYNAVAX TECHNOLOGIES CORPORATION

By:
Name:
Title:

SCHEDULE A
PAYMENT AND WIRE INSTRUCTIONS

EXHIBIT E FORM OF GUARANTY

(See attached.)

FORM OF GUARANTY AGREEMENT

THIS GUARANTY AGREEMENT, dated as of the [●] day of [●], 20[●] (this "Guaranty"), is made by **[●]**, a [●] (the "Initial Guarantor") and Subsidiary of **DYNAVAX TECHNOLOGIES CORPORATION**, a Delaware corporation (the "Borrower"), and each Subsidiary of the Borrower that, after the date hereof, executes an instrument of accession hereto substantially in the form of Exhibit A (a "Guarantor Accession"; such Subsidiaries of the Borrower, including Initial Guarantor, the "Guarantors"), in favor of the Guaranteed Parties (as hereinafter defined). Capitalized terms used herein without definition shall have the meanings given to them in the Note Purchase Agreement referred to below.

RECITALS

A. The Borrower, the Purchasers party thereto, and Deerfield Partners, L.P., as a Purchaser and as Collateral Agent for the Purchasers (in such capacity, the "Collateral Agent"), are parties to a Note Purchase Agreement, dated as of October 26, 2016 (as amended, modified, restated or supplemented from time to time, the "Note Purchase Agreement"), pursuant to which the Purchasers will purchase the Notes upon the terms and subject to the conditions set forth therein.

B. It is a condition to the purchase of the Notes by the Purchasers under the Note Purchase Agreement that each Guarantor shall have agreed, by executing and delivering this Guaranty, to guarantee to the Guaranteed Parties the payment in full of the Guaranteed Obligations (as hereinafter defined). The Guaranteed Parties are relying on this Guaranty in their decision to purchase the Notes from the Borrower under the Note Purchase Agreement, and would not purchase the Notes thereunder without this Guaranty.

C. The Borrower and the Guarantors are engaged in related businesses and undertake certain activities and operations on an integrated basis. As part of such integrated operations, the Borrower, among other things, will advance to the Guarantors from time to time certain proceeds from the sale of the Notes by the Borrower to the Purchasers pursuant to the Note Purchase Agreement. Each Guarantor will therefore obtain benefits as a result of the sale of the Notes by the Borrower under the Note Purchase Agreement, which benefits are hereby acknowledged, and, accordingly, desires to execute and deliver this Guaranty.

STATEMENT OF AGREEMENT

NOW, THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, to induce the Guaranteed Parties to enter into the Note Purchase Agreement and to induce the Purchasers to purchase the Notes from the Borrower thereunder, each Guarantor hereby agrees as follows:

1. Guaranty.

(a) Each Guarantor hereby irrevocably, absolutely and unconditionally, and jointly and severally:

(i) guarantees to the Purchasers and the Collateral Agent (collectively, the "Guaranteed Parties") the full and prompt payment, at any time and from time to time as and when due (whether at the stated maturity, by acceleration or otherwise), of all of the Obligations of the Borrower under the Note Purchase Agreement and the other Credit Documents, including all principal of and interest on the Notes, all fees, expenses, indemnities and other amounts payable by the Borrower under the Note Purchase Agreement or any other Credit Document (including interest accruing after the filing of a petition or commencement of a case by or with respect to the Borrower seeking relief under any Insolvency Laws (as hereinafter defined), whether or not the claim for such interest is allowed in such proceeding), and all Obligations that, but for the operation of the automatic stay under Section 362(a) of the Bankruptcy Code, would become due, whether now existing or hereafter created or arising and whether direct or indirect, absolute or contingent, due or to become due (all liabilities and obligations described in this **Section 1(a)(i)**, collectively, the "Guaranteed Obligations");

(ii) agrees to pay on demand all reasonable and documented out-of-pocket expenses of the Guaranteed Parties hereunder, including reasonable fees and disbursements of counsel in connection with (A) any amendments, supplements, consents or waivers hereto and (B) the administration or enforcement of this Guaranty; and

(iii) agrees to indemnify, defend and hold harmless each Guaranteed Party and their respective Related Parties from and against all damages, losses and other out-of- pocket costs and expenses of any kind or nature whatsoever pursuant to the terms of Section 9.2 of the Note Purchase Agreement.

(b) Notwithstanding the provisions of **Section 1(a)** and notwithstanding any other provisions contained herein or in any other Credit Document:

(i) no provision of this Guaranty shall require or permit the collection from any Guarantor of interest in excess of the maximum rate or amount that such Guarantor may be required or permitted to pay pursuant to applicable law; and

(ii) the liability of each Guarantor under this Guaranty as of any date shall be limited to a maximum aggregate amount (the "Maximum Guaranteed Amount") equal to the greatest amount that would not render such Guarantor's obligations under this Guaranty subject to avoidance, discharge or reduction as of such date as a fraudulent

transfer or conveyance under applicable federal and state laws pertaining to bankruptcy, reorganization, arrangement, moratorium, readjustment of debts, dissolution, liquidation or other debtor relief, specifically including the Bankruptcy Code and any fraudulent transfer and fraudulent conveyance laws (collectively, "Insolvency Laws"), in each instance after giving effect to all other liabilities of such Guarantor, contingent or otherwise, that are relevant under applicable Insolvency Laws (specifically excluding, however, any liabilities of such Guarantor in respect of intercompany indebtedness to the Borrower or any of its Affiliates to the extent that such indebtedness would be discharged in an amount equal to the amount paid by such Guarantor hereunder, and after giving effect as assets to the value (as determined under applicable Insolvency Laws) of any rights to subrogation, contribution, reimbursement, indemnity or similar rights of such Guarantor pursuant to (x) applicable law or (y) any agreement (including this Guaranty) providing for an equitable allocation among such Guarantor and other Affiliates of the Borrower of obligations arising under guaranties by such parties).

(c) The Guarantors desire to allocate among themselves, in a fair and equitable manner, their obligations arising under this Guaranty. Accordingly, in the event any payment or distribution is made hereunder on any date by a Guarantor (a "Funding Guarantor") that exceeds its Fair Share (as hereinafter defined) as of such date, that Funding Guarantor shall be entitled to a contribution from each of the other Guarantors in the amount of such other Guarantor's Fair Share Shortfall (as hereinafter defined) as of such date, with the result that all such contributions will cause each Guarantor's Aggregate Payments (as hereinafter defined) to equal its Fair Share as of such date.

"Fair Share" means, with respect to a Guarantor as of any date of determination, an amount equal to (i) the ratio of (x) the Adjusted Maximum Guaranteed Amount (as hereinafter defined) with respect to such Guarantor to (y) the aggregate of the Adjusted Maximum Guaranteed Amounts with respect to all Guarantors, multiplied by (ii) the aggregate amount paid or distributed on or before such date by all Funding Guarantors hereunder in respect of the obligations guarantied.

"Fair Share Shortfall" means, with respect to a Guarantor as of any date of determination, the excess, if any, of the Fair Share of such Guarantor over the Aggregate Payments of such Guarantor.

"Adjusted Maximum Guaranteed Amount" means, with respect to a Guarantor as of any date of determination, the Maximum Guaranteed Amount of such Guarantor determined without considering any assets or liabilities arising by virtue of any rights to subrogation, reimbursement or indemnity or any rights to or obligations of contribution hereunder as assets or liabilities of such Guarantor.

"Aggregate Payments" means, with respect to a Guarantor as of any date of determination, the aggregate amount of all payments and distributions made on or before such date by such Guarantor in respect of this Guaranty (including in respect of this **Section 1(c)**).

The amounts payable as contributions hereunder shall be determined as of the date on which the related payment or distribution is made by the applicable Funding Guarantor. Each Funding Guarantor's right of contribution under this **Section 1(c)** shall be subject to the

provisions of **Section 4**. The allocation among Guarantors of their obligations as set forth in this **Section 1(c)** shall not be construed in any way to limit the liability of any Guarantor hereunder to the Guaranteed Parties.

(d) The guaranty of each Guarantor set forth in this **Section 1** is a guaranty of payment as a primary obligor, and not a guaranty of collection. Each Guarantor hereby acknowledges and agrees that the Guaranteed Obligations, at any time and from time to time, may exceed the Maximum Guaranteed Amount of such Guarantor and may exceed the aggregate of the Maximum Guaranteed Amounts of all Guarantors, in each case without discharging, limiting or otherwise affecting the obligations of any Guarantor hereunder or the rights, powers and remedies of any Guaranteed Party hereunder or under any other Credit Document.

2. Guaranty Absolute. Each Guarantor agrees that its obligations hereunder and under the other Credit Documents to which it is a party are irrevocable, absolute and unconditional, are independent of the Guaranteed Obligations and any Collateral (as defined in the Security Agreement) or other security therefor or other guaranty or liability in respect thereof, whether given by such Guarantor or any other Person, and shall not be discharged, limited or otherwise affected by reason of any of the following, whether or not such Guarantor has notice or knowledge thereof:

(i) any change in the time, manner or place of payment of, or in any other term of, any Guaranteed Obligations or any guaranty or other liability in respect thereof, or any amendment, modification or supplement to, restatement of, or consent to any rescission or waiver of or departure from, any provisions of the Note Purchase Agreement, any other Credit Document or any agreement or instrument delivered pursuant to any of the foregoing;

(ii) the invalidity or unenforceability of any Guaranteed Obligations, any guaranty or other liability in respect thereof or any provisions of the Note Purchase Agreement, any other Credit Document or any agreement or instrument delivered pursuant to any of the foregoing;

(iii) the addition or release of Guarantors hereunder or the taking, acceptance or release of other guarantees of any Guaranteed Obligations or additional Collateral or other security for any Guaranteed Obligations or for any guaranty or other liability in respect thereof;

(iv) any discharge, modification, settlement, compromise or other action in respect of any Guaranteed Obligations or any guaranty or other liability in respect thereof, including any acceptance or refusal of any offer or performance with respect to the same or the subordination of the same to the payment of any other obligations;

(v) any agreement not to pursue or enforce or any failure to pursue or enforce (whether voluntarily or involuntarily, as a result of operation of law, court order or otherwise) any right or remedy in respect of any Guaranteed Obligations, any guaranty or other liability in respect thereof or any Collateral or other security for any of the foregoing; any sale, exchange, release, substitution, compromise or other action in

respect of any such Collateral or other security; or any failure to create, protect, perfect, secure, insure, continue or maintain any Liens in any such Collateral or other security;

(vi) the exercise of any right or remedy available under the Credit Documents, at law, in equity or otherwise in respect of any Collateral or other security for any Guaranteed Obligations or for any guaranty or other liability in respect thereof, in any order and by any manner thereby permitted, including foreclosure on any such Collateral or other security by any manner of sale thereby permitted, whether or not every aspect of such sale is commercially reasonable;

(vii) any bankruptcy, reorganization, arrangement, liquidation, insolvency, dissolution, termination, reorganization or like change in the corporate structure or existence of the Borrower or any other Person directly or indirectly liable for any Guaranteed Obligations;

(viii) any manner of application of any payments by or amounts received or collected from any Person, by whomsoever paid and howsoever realized, whether in reduction of any Guaranteed Obligations or any other obligations of the Borrower or any other Person directly or indirectly liable for any Guaranteed Obligations, regardless of what Guaranteed Obligations may remain unpaid after any such application; or

(ix) any other circumstance that might otherwise constitute a legal or equitable discharge of, or a defense, setoff or counterclaim available to, the Borrower, any Guarantor or a surety or guarantor generally, other than the occurrence of all of the following: (x) the payment in full in cash of the Guaranteed Obligations (other than contingent and indemnification obligations not then due and payable) and (y) the termination of the Commitments under the Note Purchase Agreement (the events in clauses (x) and (y) above, collectively, the "Termination Requirements").

3. Certain Waivers. Each Guarantor hereby knowingly, voluntarily and expressly waives:

(i) presentment, demand for payment, demand for performance, protest and notice of any other kind, including notice of nonpayment or other nonperformance (including notice of default under any Credit Document with respect to any Guaranteed Obligations), protest, dishonor, acceptance hereof, extension of additional credit to the Borrower and of any of the matters referred to in **Section 2** and of any rights to consent thereto;

(ii) any right to require the Guaranteed Parties or any of them, as a condition of payment or performance by such Guarantor hereunder, to proceed against, or to exhaust or have resort to any Collateral or other security from or any deposit balance or other credit in favor of, the Borrower, any other Guarantor or any other Person directly or indirectly liable for any Guaranteed Obligations, or to pursue any other remedy or enforce any other right; and any other defense based on an election of remedies with respect to any Collateral or other security for any Guaranteed Obligations or for any guaranty or other liability in respect thereof, notwithstanding that any such election (including any failure to pursue or enforce any rights or remedies) may impair or

extinguish any right of indemnification, contribution, reimbursement or subrogation or other right or remedy of any Guarantor against the Borrower, any other Guarantor or any other Person directly or indirectly liable for any Guaranteed Obligations or any such Collateral or other security;

(iii) any right or defense based on or arising by reason of any right or defense of the Borrower or any other Person, including any defense based on or arising from a lack of authority or other disability of the Borrower or any other Person, the invalidity or unenforceability of any Guaranteed Obligations, any Collateral or other security therefor or any Credit Document or other agreement or instrument delivered pursuant thereto, or the cessation of the liability of the Borrower for any reason other than the satisfaction of the Termination Requirements;

(iv) any defense based on any Guaranteed Party's acts or omissions in the administration of the Guaranteed Obligations, any guaranty or other liability in respect thereof or any Collateral or other security for any of the foregoing, and promptness, diligence or any requirement that any Guaranteed Party create, protect, perfect, secure, insure, continue or maintain any Liens in any such Collateral or other security;

(v) any right to assert against any Guaranteed Party, as a defense, counterclaim, crossclaim or setoff, any defense, counterclaim, claim, right of recoupment or setoff that it may at any time have against any Guaranteed Party (including failure of consideration, fraud, fraudulent inducement, statute of limitations, payment, accord and satisfaction and usury), other than compulsory counterclaims and other than the payment in full in cash of the Guaranteed Obligations; and

(vi) any defense based on or afforded by any applicable law that limits the liability of or exonerates guarantors or sureties or that may in any other way conflict with the terms of this Guaranty.

4. No Subrogation; Subordination. Each Guarantor hereby waives, and agrees that it will not exercise or seek to exercise, any claim or right that it may have against the Borrower or any other Guarantor at any time as a result of any payment made under or in connection with this Guaranty or the performance or enforcement hereof, including any right of subrogation to the rights of any of the Guaranteed Parties against the Borrower or any other Guarantor, any right of indemnity, contribution or reimbursement against the Borrower or any other Guarantor (including rights of contribution as set forth in **Section 1(c)**), any right to enforce any remedies of any Guaranteed Party against the Borrower or any other Guarantor, or any benefit of, or any right to participate in, any Collateral or other security held by any Guaranteed Party to secure payment of the Guaranteed Obligations, in each case whether such claims or rights arise by contract, statute (including the Bankruptcy Code), common law or otherwise; provided, however, that a Guarantor may enforce the rights of contribution set forth in **Section 1(c)** after satisfaction of the Termination Requirements. Each Guarantor further agrees that all indebtedness and other obligations, whether now or hereafter existing, of the Borrower or any other Subsidiary of the Borrower to such Guarantor, including any such indebtedness in any proceeding under the Bankruptcy Code and any intercompany debt or receivables, together with any interest thereon, shall be, and hereby are, subordinated and made junior in right of payment to the Guaranteed

Obligations. Each Guarantor further agrees that if any amount shall be paid to or any distribution received by any Guarantor (i) on account of any such indebtedness at any time after the occurrence and during the continuance of an Event of Default, or (ii) on account of any rights of contribution at any time prior to the satisfaction of the Termination Requirements, such amount or distribution shall be deemed to have been received and to be held in trust for the benefit of the Guaranteed Parties, and shall forthwith be delivered to the Collateral Agent in the form received (with any necessary endorsements in the case of written instruments), to be applied against the Guaranteed Obligations, whether or not matured, in accordance with the terms of the applicable Credit Documents and without in any way discharging, limiting or otherwise affecting the liability of such Guarantor under any other provision of this Guaranty.

Additionally, in the event the Borrower or any other Credit Party becomes a "debtor" within the meaning of the Bankruptcy Code, the Collateral Agent shall be entitled, at its option, on behalf of the Guaranteed Parties and as attorney-in-fact for each Guarantor, and is hereby authorized and appointed by each Guarantor, to file proofs of claim on behalf of each relevant Guarantor and vote the rights of each such Guarantor in any plan of reorganization, and to demand, sue for, collect and receive every payment and distribution on any indebtedness of the Borrower or such Credit Party to any Guarantor in any such proceeding, each Guarantor hereby assigning to the Collateral Agent all of its rights in respect of any such claim, including the right to receive payments and distributions in respect thereof.

5. Representations and Warranties. Each Guarantor hereby represents and warrants to the Guaranteed Parties that, as to itself, all of the representations and warranties set forth in Sections 4.1, 4.2, 4.3, 4.4, 4.5 and 4.7 relating to it contained in the Note Purchase Agreement are true and correct.

6. Financial Condition of Borrower. Each Guarantor represents that it has knowledge of the Borrower's financial condition and affairs and that it has adequate means to obtain from the Borrower on an ongoing basis information relating thereto and to the Borrower's ability to pay and perform the Guaranteed Obligations, and agrees to assume the responsibility for keeping, and to keep, so informed for so long as this Guaranty is in effect with respect to such Guarantor. Each Guarantor agrees that the Guaranteed Parties shall have no obligation to investigate the financial condition or affairs of the Borrower for the benefit of any Guarantor nor to advise any Guarantor of any fact respecting, or any change in, the financial condition or affairs of the Borrower that might become known to any Guaranteed Party at any time, whether or not such Guaranteed Party knows or believes or has reason to know or believe that any such fact or change is unknown to any Guarantor, or might (or does) materially increase the risk of any Guarantor as guarantor, or might (or would) affect the willingness of any Guarantor to continue as a guarantor of the Guaranteed Obligations.

7. Payments; Application; Setoff.

(a) Each Guarantor agrees that, upon the failure of the Borrower to pay any Guaranteed Obligations when and as the same shall become due (whether at the stated maturity, by acceleration or otherwise), and without limitation of any other right or remedy that any Guaranteed Party may have at law, in equity or otherwise against such Guarantor, such Guarantor will, subject to the provisions of **Section 1(b)**, forthwith pay or cause to be paid to the

Collateral Agent, for the benefit of the Guaranteed Parties, an amount equal to the amount of the Guaranteed Obligations then due and owing as aforesaid.

(b) All payments made by each Guarantor hereunder will be made in Dollars to the Collateral Agent, without setoff, counterclaim or other defense and, in accordance with the Note Purchase Agreement, free and clear of and without deduction for any taxes, levies, imposts, duties, deductions, withholdings, assessments, fees or other charges imposed by any Governmental Authority, including any interest, additions to tax or penalties applicable thereto, each Guarantor hereby agreeing to comply with and be bound by the provisions of the Note Purchase Agreement in respect of all payments made by it hereunder.

(c) All payments made hereunder shall be applied in accordance with the provisions of Section 2.8(a) of the Note Purchase Agreement.

(d) In the event that the proceeds of any sale, disposition or realization of the Collateral or otherwise are insufficient to pay all amounts to which the Guaranteed Parties are legally entitled, the Guarantors shall be jointly and severally liable for the deficiency, together with interest thereon at the highest rate specified in any applicable Credit Document for interest on overdue principal or such other rate as shall be fixed by applicable law, together with the costs of collection and all other fees, costs and expenses payable hereunder.

(e) Upon and at any time after the occurrence and during the continuance of any Event of Default, each Guaranteed Party and each of their respective Affiliates is hereby authorized at any time and from time to time, to the fullest extent permitted by applicable law, to set off and apply any and all deposits (general or special, time or demand, provisional or final, in whatever currency) at any time held and other obligations (in whatever currency) at any time owing by such Guaranteed Party or any such Affiliate to or for the credit or the account of any Guarantor against any and all of the obligations of such Guarantor now or hereafter existing under this Guaranty or any other Credit Document to such Guaranteed Party, irrespective of whether or not such Guaranteed Party shall have made any demand under this Guaranty or any other Credit Document and although such obligations of such Guarantor may be contingent or unmatured or are owed to a branch or office of such Guaranteed Party different from the branch or office holding such deposit or obligated on such indebtedness. The rights of each Guaranteed Party and their respective Affiliates under this **Section 7(e)** are in addition to other rights and remedies (including other rights of setoff) that such Guaranteed Parties or their respective Affiliates may have. Each Guaranteed Party agrees to notify the Borrower and the Collateral Agent promptly after any such setoff and application; provided that the failure to give such notice shall not affect the validity of such setoff and application.

8. No Waiver. The rights and remedies of the Guaranteed Parties expressly set forth in this Guaranty and the other Credit Documents are cumulative and in addition to, and not exclusive of, all other rights and remedies available at law, in equity or otherwise. No failure or delay on the part of any Guaranteed Party in exercising any right, power or privilege shall operate as a waiver thereof, nor shall any single or partial exercise of any such right, power or privilege preclude any other or further exercise thereof or the exercise of any other right, power or privilege or be construed to be a waiver of any Default or Event of Default. No course of dealing between any of the Guarantors and the Guaranteed Parties or their agents or employees

shall be effective to amend, modify or discharge any provision of this Guaranty or any other Credit Document or to constitute a waiver of any Default or Event of Default. No notice to or demand upon any Guarantor in any case shall entitle such Guarantor or any other Guarantor to any other or further notice or demand in similar or other circumstances or constitute a waiver of the right of any Guaranteed Party to exercise any right or remedy or take any other or further action in any circumstances without notice or demand.

9. Enforcement. The Guaranteed Parties agree that, except as provided in **Section 7(e)**, this Guaranty may be enforced only by the Collateral Agent, acting upon the instructions or with the consent of the Required Purchasers as provided for in the Note Purchase Agreement, and that no Guaranteed Party shall have any right individually to enforce or seek to enforce this Guaranty or to realize upon any Collateral or other security given to secure the payment and performance of the Guarantors' obligations hereunder. The obligations of each Guarantor hereunder are independent of the Guaranteed Obligations, and a separate action or actions may be brought against each Guarantor whether or not action is brought against the Borrower or any other Guarantor and whether or not the Borrower or any other Guarantor is joined in any such action. Each Guarantor agrees that to the extent all or part of any payment of the Guaranteed Obligations made by any Person is subsequently invalidated, declared to be fraudulent or preferential, set aside or required to be repaid by or on behalf of any Guaranteed Party to a trustee, receiver or any other Person under any Insolvency Laws (the amount of any such payment, a "Reclaimed Amount"), then, to the extent of such Reclaimed Amount, this Guaranty shall continue in full force and effect or be revived and reinstated, as the case may be, as to the Guaranteed Obligations intended to be satisfied as if such payment had not been received; and each Guarantor acknowledges that the term "Guaranteed Obligations" includes all Reclaimed Amounts that may arise from time to time.

10. Amendments, Waivers, etc. No amendment, modification, waiver, discharge or termination of, or consent to any departure by any Guarantor from, any provision of this Guaranty, shall be effective unless in a writing signed by the Guarantors, the Collateral Agent and such of the Purchasers as may be required under Section 9.10 of the Note Purchase Agreement to concur in the action then being taken, and then the same shall be effective only in the specific instance and for the specific purpose for which given.

11. Addition, Release of Guarantors. Subject to Section 8.8 of the Note Purchase Agreement, each Guarantor recognizes that the provisions of the Note Purchase Agreement require certain Persons that become Subsidiaries of the Borrower and that are not already parties hereto to become Guarantors hereunder by executing a Guarantor Accession, and agrees that its obligations hereunder shall not be discharged, limited or otherwise affected by reason of the same, or by reason of the Collateral Agent's actions in effecting the same or in releasing any Guarantor hereunder, in each case without the necessity of giving notice to or obtaining the consent of any other Guarantor.

12. Continuing Guaranty; Term; Successors and Assigns; Assignment; Survival. This Guaranty is a continuing guaranty and covers all of the Guaranteed Obligations as the same may arise and be outstanding at any time and from time to time from and after the date hereof, and shall (i) remain in full force and effect until satisfaction of all of the Termination Requirements (provided that the provisions of **Sections 1(a)(ii)** and **4** shall survive any termination of this

Guaranty), (ii) be binding upon and enforceable against each Guarantor and its successors and assigns (provided, however, that no Guarantor may sell, assign or transfer any of its rights, interests, duties or obligations hereunder without the prior written consent of all of the Purchasers) and (iii) inure to the benefit of and be enforceable by each Guaranteed Party and its successors and assigns. Without limiting the generality of clause (iii) above, any Guaranteed Party may, in accordance with the provisions of the Note Purchase Agreement, assign all or a portion of the Guaranteed Obligations held by it (including by the sale of participations), whereupon each Person that becomes the holder of any such Guaranteed Obligations shall (except as may be otherwise agreed between such Guaranteed Party and such Person) have and may exercise all of the rights and benefits in respect thereof granted to such Guaranteed Party under this Guaranty or otherwise. Each Guarantor hereby irrevocably waives notice of and consents in advance to the assignment as provided above from time to time by any Guaranteed Party of all or any portion of the Guaranteed Obligations held by it and of the corresponding rights and interests of such Guaranteed Party hereunder in connection therewith. All representations, warranties, covenants and agreements herein shall survive the execution and delivery of this Guaranty and any Guarantor Accession.

13. Governing Law; Consent to Jurisdiction; Appointment of Borrower as Representative, Process Agent, Attorney-in-Fact.

(a) This Guaranty and any claims, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Guaranty shall be governed by, and construed in accordance with, the laws of the State of New York (including Sections 5-1401 and 5-1402 of the New York General Obligations Law, but excluding all other choice of law and conflicts of law rules).

(b) Each Guarantor irrevocably and unconditionally submits, for itself and its property, to the nonexclusive jurisdiction of the courts of the State of New York sitting in the City and County of New York and of the United States District Court of the Southern District of New York and any appellate court therefrom in any action or proceeding arising out of or relating to this Guaranty or any other Credit Document, or for recognition or enforcement of any judgment, and each of the parties hereto irrevocably and unconditionally agrees that all claims in respect of any such action or proceeding may be heard and determined in such state court or, to the fullest extent permitted by applicable law, in such federal court. Each of the parties hereto agrees that a final judgment in any such action or proceeding shall be conclusive and may be enforced in other jurisdictions by suit on the judgment or in any other manner provided by law. Nothing in this Guaranty or in any other Credit Document shall affect any right that any Guaranteed Party may otherwise have to bring any action or proceeding relating to this Guaranty or any other Credit Document against any Guarantor or its properties in the courts of any jurisdiction.

(c) Each Guarantor irrevocably and unconditionally waives, to the fullest extent permitted by applicable law, any objection that it may now or hereafter have to the laying of venue of any action or proceeding arising out of or relating to this Guaranty or any other Credit Document in any court referred to in **Section 13(b)**. Each of the parties hereto hereby irrevocably waives, to the fullest extent permitted by applicable law, the defense of an inconvenient forum to the maintenance of such action or proceeding in any such court.

(d) Each Guarantor hereby irrevocably designates and appoints the Borrower as its designee, appointee and agent to receive on its behalf all service of process in any such action or proceeding and any other notice or communication hereunder, irrevocably consents to service of process in any such action or proceeding by registered or certified mail directed to the Borrower at its address set forth in the Note Purchase Agreement (and service so made shall be deemed to be completed upon the earlier of actual receipt thereof or three business days after deposit in the United States mails, proper postage prepaid and properly addressed), and irrevocably agrees that service so made shall be effective and binding upon such Guarantor in every respect and that any other notice or communication given to the Borrower at the address and in the manner specified herein shall be effective notice to such Guarantor. Nothing in this **Section 13** shall affect the right of any party to serve legal process in any other manner permitted by law or affect the right of any Guaranteed Party to bring any action or proceeding against any Guarantor in the courts of any other jurisdiction.

(e) Further, each Guarantor does hereby irrevocably make, constitute and appoint the Borrower as its true and lawful attorney-in-fact, with full authority in its place and stead and in its name, the Borrower's name or otherwise, and with full power of substitution in the premises, from time to time in the Borrower's discretion to agree on behalf of, and sign the name of, such Guarantor to any amendment, modification or supplement to, restatement of, or waiver or consent in connection with, this Guaranty, any other Credit Document or any document or instrument related hereto or thereto, and to take any other action and do all other things on behalf of such Guarantor that the Borrower may deem necessary or advisable to carry out and accomplish the purposes of this Guaranty and the other Credit Documents. The Borrower will not be liable for any act or omission nor for any error of judgment or mistake of fact unless the same shall occur as a result of the gross negligence or willful misconduct of the Borrower. This power, being coupled with an interest, is irrevocable by any Guarantor for so long as this Guaranty shall be in effect with respect to such Guarantor.

14. Waiver of Jury Trial. EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY LEGAL PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS GUARANTY OR ANY OTHER CREDIT DOCUMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY OR THEREBY (WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY). EACH PARTY HERETO (A) CERTIFIES THAT NO REPRESENTATIVE, AGENT OR ATTORNEY OF ANY OTHER PERSON HAS REPRESENTED, EXPRESSLY OR OTHERWISE, THAT SUCH OTHER PERSON WOULD NOT, IN THE EVENT OF LITIGATION, SEEK TO ENFORCE THE FOREGOING WAIVER AND
(B) ACKNOWLEDGES THAT IT AND THE OTHER PARTIES HERETO HAVE BEEN INDUCED TO ENTER INTO THIS GUARANTY AND THE OTHER CREDIT DOCUMENTS BY, AMONG OTHER THINGS, THE MUTUAL WAIVERS AND CERTIFICATIONS IN THIS SECTION.

15. Notices. All notices and other communications provided for herein shall be in writing and shall be delivered by hand or overnight courier service, mailed by certified or registered mail or sent by facsimile as follows: (i) if to any Guarantor, in care of the Borrower and at the Borrower's address for notices set forth in the Note Purchase Agreement, and (ii) if to

the Borrower or any Guaranteed Party, at their respective addresses for notices set forth in the Note Purchase Agreement; in each case, as such addresses may be changed from time to time pursuant to the Note Purchase Agreement, and with copies to such other Persons as may be specified under the provisions of the Note Purchase Agreement. Notices sent by hand or overnight courier service, or mailed by certified or registered mail, shall be deemed to have been given when received; notices sent by facsimile shall be deemed to have been given when sent (except that, if not given during normal business hours for the recipient, shall be deemed to have been given at the opening of business on the next business day for the recipient). Notices delivered through electronic communications to the extent provided in the Note Purchase Agreement shall be effective as provided therein.

16. Severability. To the extent any provision of this Guaranty is prohibited by or invalid under the applicable law of any jurisdiction, such provision shall be ineffective only to the extent of such prohibition or invalidity and only in such jurisdiction, without prohibiting or invalidating such provision in any other jurisdiction or the remaining provisions of this Guaranty in any jurisdiction.

17. Construction. The headings of the various sections and subsections of this Guaranty have been inserted for convenience only and shall not in any way affect the meaning or construction of any of the provisions hereof. Unless the context otherwise requires, words in the singular include the plural and words in the plural include the singular. The provisions of Section 1.3 of the Note Purchase Agreement are hereby incorporated by reference as if fully set forth herein.

18. Counterparts; Effectiveness. This Guaranty may be executed in any number of counterparts and by different parties hereto on separate counterparts, each of which when so executed and delivered shall be an original, but all of which shall together constitute one and the same instrument. This Guaranty shall become effective, as to any Guarantor, upon the execution and delivery by such Guarantor of a counterpart hereof or a Guarantor Accession. Delivery of an executed counterpart of a signature page of this Guaranty or a Guarantor Accession by facsimile or in electronic format (e.g., "pdf," "tif" or similar file formats) shall be effective as delivery of a manually executed counterpart of this Guaranty or such Guarantor Accession.

[Signature pages follow]

IN WITNESS WHEREOF, the parties have caused this Guaranty to be executed under seal by their duly authorized officers as of the date first above written.

[GUARANTOR]

By:
Name:
Title:

[Signatures Continue on Following Page]

Accepted and agreed to:

DEERFIELD PARTNERS, L.P., as Collateral Agent By: Deerfield

Mgmt, L.P.

General Partner

By: J.E. Flynn Capital, LLC General Partner

By:
Name: David J. Clark
Title: Authorized Signatory

EXHIBIT A

GUARANTOR ACCESSION

THIS GUARANTOR ACCESSION (this "Accession"), dated as of , 20 , is executed and delivered by **[NAME OF NEW GUARANTOR]**, a (the "New Guarantor"), pursuant to the Guaranty Agreement referred to below.

Reference is made to the Note Purchase Agreement, dated as of October 26, 2016, among Dynavax Technologies Corporation, a Delaware corporation (the "Borrower"), the Purchasers party thereto, and Deerfield Partners, L.P., a Delaware limited partnership, as a Purchaser and as Collateral Agent for the Purchasers (as amended, modified, restated or supplemented from time to time, the "Note Purchase Agreement").

The Borrower has agreed under the Note Purchase Agreement to cause certain of its future Subsidiaries to become a party to the Guaranty Agreement as a guarantor thereunder. The New Guarantor is a Subsidiary of the Borrower that the Borrower is required to cause to become a party to the Guaranty Agreement. The New Guarantor will obtain benefits as a result of sale of the Notes to the Purchasers by the Borrower under the Note Purchase Agreement, which benefits are hereby acknowledged, and, accordingly, desire to execute and deliver this Accession.
Therefore, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and as further inducement to the Purchasers in connection with their purchase of the Notes from the Borrower under the Note Purchase Agreement, the New Guarantor hereby agrees as follows:

1. The New Guarantor hereby joins in and agrees to be bound by each and all of the provisions of the Guaranty Agreement as a Guarantor thereunder. In furtherance (and without limitation) of the foregoing, pursuant to Section 1 of the Guaranty Agreement, the New Guarantor hereby irrevocably, absolutely and unconditionally, and jointly and severally with each other Guarantor, guarantees to the Guaranteed Parties the full and prompt payment, at any time and from time to time as and when due (whether at the stated maturity, by acceleration or otherwise), of all of the Guaranteed Obligations, and agrees to pay or reimburse upon demand all other obligations of the Guarantors under the Guaranty Agreement, all on the terms and subject to the conditions set forth in the Guaranty Agreement.

2. The New Guarantor hereby represents and warrants that after giving effect to this Accession, each representation and warranty related to it contained in Sections 4.1, 4.2, 4.3, 4.4, 4.5 and 4.7 of the Note Purchase Agreement is true and correct with respect to the New Guarantor as of the date hereof.

3. This Accession shall be a Credit Document (within the meaning of such term under the Note Purchase Agreement), shall be binding upon and enforceable against the New Guarantor and its successors and assigns, and shall inure to the benefit of and be enforceable by each Guaranteed Party and its successors and assigns. This Accession and its attachments are hereby incorporated into the Guaranty Agreement and made a part thereof.

[Signature page follow]

IN WITNESS WHEREOF, the New Guarantor has caused this Accession to be executed under seal by its duly authorized officer as of the date first above written.

[NAME OF NEW GUARANTOR]

By:
Name:
Title:

EXHIBIT F

FORM OF SECURITY AGREEMENT

(See attached.)

PLEDGE AND SECURITY AGREEMENT

THIS PLEDGE AND SECURITY AGREEMENT, dated as of the [●] day of [●] 20[●] (this "Agreement"), is made by **DYNAVAX TECHNOLOGIES CORPORATION**, a Delaware corporation (the "Borrower"), and by each Subsidiary of the Borrower that, after the date hereof, executes an instrument of accession hereto substantially in the form of Exhibit C (a "Pledgor Accession"; such Subsidiaries, collectively, together with the Borrower, the "Pledgors"), in favor of **DEERFIELD PARTNERS, L.P.**, a Delaware limited partnership, as Collateral Agent for the Purchasers party to the Note Purchase Agreement referred to below (in such capacity, the "Collateral Agent"), for the benefit of the Secured Parties (as hereinafter defined). Except as otherwise provided herein, capitalized terms used but not defined herein have the meanings given to them in the Note Purchase Agreement referred to below.

RECITALS

A. The Borrower, the Purchasers and the Collateral Agent are parties to a Note Purchase Agreement, dated as of October 26, 2016 (as amended, modified, restated or supplemented from time to time, the "Note Purchase Agreement"), pursuant to which the Purchasers will purchase Notes with an aggregate original principal amount of $100,000,000 upon the terms and subject to the conditions set forth therein.

B. It is a further condition to the purchase by the Purchasers of the Notes under the Note Purchase Agreement that the Pledgors as of the Purchase Date (as defined in the Note Purchase Agreement) shall have agreed, by executing and delivering this Agreement, to secure the payment in full of their respective obligations under the Note Purchase Agreement and the other Credit Documents. The Secured Parties are relying on this Agreement in their decision to purchase the Notes from the Borrower under the Note Purchase Agreement, and would not enter into the Note Purchase Agreement or purchase the Note thereunder without the execution and delivery of this Agreement by the Pledgors.

C. The Pledgors will obtain benefits as a result of the sale by the Borrower of the Notes to the Purchasers under the Note Purchase Agreement, which benefits are hereby acknowledged, and, accordingly, desire to execute and deliver this Agreement.

STATEMENT OF AGREEMENT

NOW, THEREFORE, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, to induce the Secured Parties to enter into the Note Purchase Agreement and to induce the Purchasers to purchase the Notes from the Borrower thereunder, each Pledgor hereby agrees as follows:

ARTICLE I
DEFINITIONS

1.1 Defined Terms. The following terms that are defined in the UCC are used in this Agreement as so defined (and, in the event any such term is defined differently for purposes of

Article 9 of the UCC than for any other purpose or purposes of the UCC, the Article 9 definition shall govern): Account, Chattel Paper, Commercial Tort Claim, Commodity Account, Commodity Intermediary, Deposit Accounts, Documents, Electronic Chattel Paper, Equipment, Fixtures, General Intangibles, Goods, Instruments, Inventory, Investment Property, Letter-of- Credit Rights, Record, Securities Account, Securities Intermediary, Software, Supporting Obligations and Tangible Chattel Paper. In addition, the following terms have the meanings set forth below:

"Collateral" has the meaning given to such term in **Section 2.1**. "Collateral Accounts" has the meaning given to such term in **Section 6.3**.

"Contracts" means, collectively, all rights of each Pledgor under all leases, contracts and agreements to which such Pledgor is now or hereafter a party, including all rights, privileges and powers under Ownership Agreements and Licenses, together with any and all extensions, modifications, amendments and renewals of such leases, contracts and agreements and all rights of such Pledgor to receive moneys due or to become due thereunder or pursuant thereto and to amend, modify, terminate or exercise rights under such leases, contracts and agreements.

"Control Agreement" has the meaning given to such term in **Section 4.5**. "Copyright Collateral" means, collectively, all Copyrights and inbound Copyright Licenses (other than off-the-shelf software and software subject to shrink-wrap, click-wrap and other generally commercially available licenses) to which any Pledgor is or hereafter becomes a party and all other General Intangibles embodying, incorporating, evidencing or otherwise relating or pertaining to any Copyright or Copyright License, in each case whether now owned or existing or hereafter acquired or arising.

"Copyright License" means any agreement now or hereafter in effect granting any right to any third party under any Copyright now or hereafter owned by any Pledgor or which any Pledgor otherwise has the right to license, or granting any right to any Pledgor under any property of the type described in the definition of Copyright herein now or hereafter owned by any third party, and all rights of any Pledgor under any such agreement.

"Copyrights" means, collectively, all of each Pledgor's copyrights, copyright registrations and applications for copyright registration, whether under the laws of the United States or any other country or jurisdiction, including all recordings, supplemental registrations and derivative or collective work registrations, and all renewals and extensions thereof, in each case whether now owned or existing or hereafter acquired or arising.

"Excluded Deposit Account" means (i) any Deposit Accounts the funds in which are used solely for the payment of wages, salaries, worker's compensation and similar expenses and Deposit Accounts the funds in which consist solely of funds held by a Credit Party in trust for any director, officer or employee of, or any employee benefit plan maintained by, any Credit Party, (ii) (x) escrow accounts and (y) trust accounts, in each case entered into in the ordinary course of business and consistent with prudent business practice conduct where the applicable Credit Party holds the funds exclusively for the benefit of an unaffiliated third party, (iii) Deposit Accounts the daily balance in which does not at any time exceed $250,000 for any such account

or $1,000,000 for all such accounts, (iv) any Deposit Account that is a zero-balance disbursement account, (v) Deposit Accounts (A) subject to a control agreement in favor of a lender or the administrative or collateral agent under a working capital or revolving credit facility permitted under Section 6.2(iv) of the Note Purchase Agreement, (B) holding cash and/or Cash Equivalents securing letters of credit, banker's acceptances and other similar instruments permitted under Section 6.2(xiv) of the Note Purchase Agreement and (C) over which the Collateral Agent has a second lien, and (vi) deposit and securities accounts held outside the United States.

"Excluded Property" means collectively, (i) any permit, license or agreement entered into by any Pledgor (A) to the extent that any such permit, license or agreement or any law applicable thereto prohibits the creation of a Lien thereon, but only to the extent, and for as long as, such prohibition is not terminated or rendered unenforceable or otherwise deemed ineffective by the UCC or any other applicable law or (B) to the extent that the creation of a Lien in favor of the Collateral Agent would result in a breach or termination pursuant to the terms of or a default under any such permit, license or agreement (other than to the extent that any such term would be rendered ineffective pursuant to the Sections 9-406, 9-407, 9-408 or 9-409 of the UCC or any other applicable law (including the Bankruptcy Code) or principles of equity), (ii) property owned by any Pledgor that is subject to a purchase money Lien or leased by any Pledgor that is subject to a Capital Lease, in each case, permitted under the Note Purchase Agreement if the agreement pursuant to which such Lien is granted (or in the document providing for such capital lease) (1) prohibits or requires the consent of any Person other than a Pledgor or one of its Affiliates which has not been obtained as a condition to the creation of any other Lien on such property or (2) grants a right of termination to any Person other than a Pledgor or one of its Affiliates if any Lien in favor of the Collateral Agent is created with respect to the property subject thereto, (iii) any "intent to use" trademark applications for which a statement of use has not been filed (but only until such statement is filed), (iv) Capital Stock in joint ventures or any non-Wholly Owned Subsidiaries to the extent not permitted by the terms of such entity's organizational documents or joint venture documents, (v) voting Capital Stock in any Excluded Foreign Subsidiary in excess of 65% of the total combined voting power of all outstanding classes of Capital Stock of such Subsidiary entitled to vote within the meaning of Section 1.956- 2(c)(2) of the Treasury Regulations, (vi) rolling stock, motor vehicles, vessels and other assets subject to certificates of title (other than to the extent a Lien thereon can be perfected by the filing of a financing statement under the UCC), (vii) any governmental licenses or state or local franchises, charters and authorizations, to the extent a security interest in any such license, franchise, charter or authorization is prohibited or restricted thereby (after giving effect to the applicable anti-assignment provisions of the UCC or other applicable law), and (viii) any assets (including intangibles) not located in the United States to the extent the grant of a security interest therein is restricted or prohibited by applicable law; provided, however, "Excluded Property" shall not include any proceeds, products, substitutions or replacements of Excluded Property (unless such proceeds, products, substitutions or replacements would otherwise constitute Excluded Property).

"Excluded Securities Account" means (i) any Securities Account or Commodity Account where the aggregate value of the securities or commodities credited thereto does not at any time exceed $250,000 for such account or $1,000,000 for all such accounts, (ii) any Securities Account or Commodity Account where (A) the Collateral Agent is the entitlement holder or

Commodity Intermediary or (B) the Securities Intermediary or Commodity Intermediary (as applicable) for such account has executed and delivered to the Collateral Agent a control agreement with respect to such Securities Account or Commodity Account in form and substance reasonably satisfactory to the Collateral Agent, (iii) any Securities Account or Commodity Account described in clause (ii) or clause (v)(B) of the definition of Excluded Deposit Account, and (iv) any Securities Account or Commodity Account held outside of the United States.

"License" means any Copyright License, Patent License or Trademark License. "Ownership Agreement" means any partnership agreement, joint venture agreement,
limited liability company operating agreement, stockholders agreement or other agreement creating, governing or evidencing any Capital Stock and to which any Pledgor is now or hereafter becomes a party, as any such agreement may be amended, modified, supplemented, restated or replaced from time to time.

"Patent Collateral" means, collectively, all Patents and all inbound Patent Licenses to which any Pledgor is or hereafter becomes a party and all other General Intangibles embodying, incorporating, evidencing or otherwise relating or pertaining to any Patent or Patent License, in each case whether now owned or existing or hereafter acquired or arising.

"Patent License" means any agreement now or hereafter in effect granting to any third party any right to make, use or sell any invention on which a Patent, now or hereafter owned by any Pledgor or which any Pledgor otherwise has the right to license, is in existence, or granting to any Pledgor any right to make, use or sell any invention on which property of the type described in the definition of Patent herein, now or hereafter owned by any third party, is in existence, and all rights of any Pledgor under any such agreement.

"Patents" means, collectively, all of each Pledgor's letters patent, whether under the laws of the United States or any other country or jurisdiction, all recordings and registrations thereof and applications therefor, including the inventions and improvements described therein, and all reissues, continuations, divisions, renewals, extensions, substitutions and continuations-in-part thereof, in each case whether now owned or existing or hereafter acquired or arising.

"Pledge Amendment" has the meaning given such term in **Section 5.1(a)**.

"Pledged Interests" means, collectively, (i) all of the issued and outstanding Capital Stock of each Person that is a direct Subsidiary of any Pledgor as of the date hereof or that becomes a direct Subsidiary of any Pledgor at any time after the date hereof, at any time now or hereafter owned by any Pledgor, whether voting or non-voting and whether common or preferred; (ii) all options, warrants and other rights to acquire, and all securities convertible into, any of the foregoing; (iii) all rights to receive interest, income, dividends, distributions, returns of capital and other amounts (whether in cash, securities, property, or a combination thereof), and all additional stock, warrants, options, securities, interests and other property, from time to time paid or payable or distributed or distributable in respect of any of the foregoing (but subject to the provisions of **Section 5.3**), including all rights of such Pledgor to receive amounts due and to become due under or in respect of any Ownership Agreement or upon the termination thereof;
(iv) all rights of access to the books and records of any such Person; and (v) all other rights,

powers, privileges, interests, claims and other property in any manner arising out of or relating to any of the foregoing, of whatever kind or character (including any tangible or intangible property or interests therein), and whether provided by contract or granted or available under applicable law in connection therewith, including such Person's right to vote and to manage and administer the business of any such Subsidiary pursuant to any applicable Ownership Agreement, in each case together with all certificates, instruments and entries upon the books of financial intermediaries at any time evidencing any of the foregoing. Notwithstanding the foregoing, Pledged Interests shall not include any Excluded Property specified in clause (v) of the definition thereof.

"Proceeds" has the meaning given to such term in **Section 2.1**.

"Secured Parties" means, collectively, the Purchasers and the Collateral Agent. "Secured Obligations" has the meaning given such term in **Section 2.2**.

"Trademark Collateral" means, collectively, all Trademarks and inbound Trademark Licenses to which any Pledgor is or hereafter becomes a party and all other General Intangibles embodying, incorporating, evidencing or otherwise relating or pertaining to any Trademark or Trademark License, in each case whether now owned or existing or hereafter acquired or arising.

"Trademark License" means any agreement now or hereafter in effect granting any right to any third party under any Trademark now or hereafter owned by any Pledgor or which any Pledgor otherwise has the right to license, or granting any right to any Pledgor under any property of the type described in the definition of Trademark herein now or hereafter owned by any third party, and all rights of any Pledgor under any such agreement.

"Trademarks" means, collectively, all of each Pledgor's trademarks, service marks, trade names, uniform resource locators (also known as "URLs"), domain names, corporate and company names, business names, logos, trade dress, trade styles, other source or business identifiers, designs and general intangibles of a similar nature, whether under the laws of the United States or any other country or jurisdiction, all recordings and registrations thereof and applications therefor, all renewals, reissues and extensions thereof, all rights corresponding thereto, and all goodwill associated therewith or symbolized thereby, in each case whether now owned or existing or hereafter acquired or arising.

1.2 Other Terms; Construction. All terms in this Agreement that are not capitalized shall, unless the context otherwise requires, have the meanings provided by the UCC to the extent the same are used or defined therein.

ARTICLE II

CREATION OF SECURITY INTEREST

2.1 Pledge and Grant of Security Interest. Each Pledgor hereby pledges and collaterally assigns to the Collateral Agent, for the ratable benefit of the Secured Parties, and grants to the Collateral Agent, for the ratable benefit of the Secured Parties, a Lien upon and security interest in, all of such Pledgor's right, title and interest in and to the following property

and assets of such Pledgor, in each case whether now owned or existing or hereafter acquired or arising and wherever located (collectively, the "Collateral"):

(i) all Accounts;

(ii) all Chattel Paper;

(iii) the Commercial Tort Claims (if any) set forth on Annex I hereto;

(iv) all Contracts;

(v) all Copyright Collateral;

(vi) all Deposit Accounts;

(vii) all Documents;

(viii) all Equipment;

(ix) all Fixtures;

(x) all General Intangibles;

(xi) all Goods;

(xii) all Instruments;

(xiii) all Inventory;

(xiv) all Investment Property;

(xv) all Letter-of-Credit Rights;

(xvi) all Patent Collateral;

(xvii) all Pledged Interests;

(xviii) all Software;

(xix) all Supporting Obligations;

(xx) all Trademark Collateral;

(xxi) all cash, cash equivalents and money of such Pledgor, wherever held;

(xxii) to the extent not covered or not specifically excluded by clauses (i) through (xxi) above, all of such Pledgor's other personal property;

(xxiii) all Records evidencing or relating to any of the foregoing or that are otherwise necessary or useful in the collection thereof;

(xxiv) all accessions, additions, attachments, improvements, modifications and upgrades to, replacements of and substitutions for any of the foregoing; and

(xxv) any and all proceeds, as defined in the UCC, products, rents, royalties and profits of or from any and all of the foregoing and, to the extent not otherwise included in the foregoing, (w) all payments under any insurance (whether or not the Collateral Agent is the loss payee thereunder), indemnity, warranty or guaranty with respect to any of the foregoing Collateral, (x) all payments in connection with any requisition, condemnation, seizure or forfeiture with respect to any of the foregoing Collateral, (y) all claims and rights (but not obligations) to recover for any past, present or future infringement or dilution of or injury to any Copyright Collateral, Patent Collateral or Trademark Collateral, and (z) all other amounts from time to time paid or payable under or with respect to any of the foregoing Collateral (collectively, "Proceeds"). For purposes of this Agreement, the term "Proceeds" includes whatever is receivable or received when Collateral or Proceeds are sold, exchanged, collected or otherwise disposed of, whether voluntarily or involuntarily.

Notwithstanding the foregoing, (i) "Collateral" shall not include the Excluded Property, and (ii) the Collateral Agent may, in its sole discretion, reject or refuse to accept for credit toward payment of the Secured Obligations any Collateral that is an Account, Instrument, Chattel Paper, lease or other obligation or property of any kind due or owing from or belonging to a Sanctioned Person.

2.2 Security for Secured Obligations. This Agreement and the Collateral secure the full and prompt payment, at any time and from time to time as and when due (whether at the stated maturity, by acceleration or otherwise), of (a) in the case of the Borrower, all Obligations of the Borrower under the Note Purchase Agreement and the other Credit Documents, including all principal of and interest on the Notes, and all fees, expenses, indemnities and other amounts payable by the Borrower under the Note Purchase Agreement or any other Credit Document (including interest accruing after the filing of a petition or commencement of a case by or with respect to the Borrower seeking relief under any applicable federal and state laws pertaining to bankruptcy, reorganization, arrangement, moratorium, readjustment of debts, dissolution, liquidation or other debtor relief, specifically including the Bankruptcy Code and any fraudulent transfer and fraudulent conveyance laws, whether or not the claim for such interest is allowed in such proceeding), and (b) in the case of each Pledgor other than the Borrower, if any, all of its liabilities and obligations as a Subsidiary Guarantor in respect of the Guaranteed Obligations (as defined in the Guaranty); and in each case under (a) and (b) above, (i) all such liabilities and obligations that, but for the operation of the automatic stay under Section 362(a) of the Bankruptcy Code, would become due, and (ii) all fees, costs and expenses payable by the Pledgors under **Section 8.1,** whether now existing or hereafter created or arising and whether direct or indirect, absolute or contingent, due or to become due (the liabilities and obligations of the Pledgors described in this **Section 2.2**, collectively, the "Secured Obligations").

ARTICLE III REPRESENTATIONS AND WARRANTIES

Each Pledgor represents and warrants as follows:

3.1 No Filings. No security agreement, financing statement or other public notice with respect to all or any part of the Collateral is on file or of record in any government or public office, and no Pledgor has filed or consented to the filing of any such statement or notice, except

(i) UCC financing statements naming the Collateral Agent as secured party, (ii) security instruments filed in the U.S. Copyright Office or the U.S. Patent and Trademark Office naming the Collateral Agent as secured party, (iii) filings with respect to which termination statements and other necessary releases have been delivered to the Collateral Agent for filing on or prior the date hereof or the date of the applicable Pledgor Accession, as applicable, and (iv) as may be otherwise permitted by the Note Purchase Agreement.

3.2 Security Interests; Filings. This Agreement, together with (i) the filing, with respect to each Pledgor, of duly completed UCC financing statements naming such Pledgor as debtor, the Collateral Agent as secured party, and describing the Collateral, in the jurisdictions set forth with respect to such Pledgor on Annex A hereto, (ii) to the extent required by applicable law, the filing, with respect to each relevant Pledgor, of duly completed and executed assignments in the forms set forth as Exhibits A and B with the U.S. Copyright Office or the U.S. Patent and Trademark Office, as appropriate, with regard to registered Copyright Collateral, Patent Collateral and Trademark Collateral of such Pledgor, as the case may be, (iii) in the case of uncertificated Pledged Interests consisting of capital stock, registration of transfer thereof to the Collateral Agent on the issuer's books or the execution by the issuer of an issuer's acknowledgment or a control agreement satisfying the requirements of Section 8-106 (or its successor provision) of the UCC, and (iv) the delivery to the Collateral Agent, for its benefit and the benefit of the Secured Parties, of all stock certificates and Instruments included in the Collateral (and assuming continued possession thereof by the Collateral Agent), creates, and at all times shall constitute, a valid and perfected security interest in and Lien upon the Collateral in favor of the Collateral Agent, for the benefit of the Secured Parties, to the extent a security interest therein can be perfected by such filings or possession, as applicable, superior and prior to the rights of all other Persons therein (except for Permitted Liens), and no other or additional filings, registrations, recordings or actions are or shall be necessary or appropriate in order to maintain the perfection and priority of such Lien and security interest, other than actions required with respect to Collateral of the types excluded from Article 9 of the UCC or from the filing requirements under such Article 9 by reason of Section 9-109, 9-309 or 9-310 of the UCC and other than continuation statements required under the UCC.

3.3 Locations. Annex B (as may be amended by each Pledgor from time to time) lists, as to each Pledgor, (i) its exact legal name, (ii) the jurisdiction of its incorporation or organization, its federal tax identification number, and (if applicable) its organizational identification number, (iii) the addresses of its chief executive office and each other place of business, (iv) the address of each location of all original invoices, ledgers, Chattel Paper, Instruments and other records or information evidencing or relating to the Collateral of such Pledgor, and (v) the address of each location at which any Equipment or Inventory (other than Goods in transit and mobile goods) having a value individually or in the aggregate in excess of

$1,000,000 and owned by such Pledgor is kept or maintained, in each instance except for any new locations established in accordance with the provisions of **Section 4.1**. Except as may be otherwise noted therein, all locations identified in Annex B are leased by the applicable Pledgor. No Pledgor (x) presently conducts or has conducted business under any prior or other corporate or company name or under any trade or fictitious names in the past five years, except as

indicated beneath its name on Annex B or (y) has filed any tax return under any name other than its exact legal name in the past five years, except as indicated beneath its name on Annex B.

3.4 Authorization; Consent. No authorization, consent or approval of, or declaration or filing with, any Governmental Authority (including any notice filing with state tax or revenue authorities required to be made by account creditors in order to enforce any Accounts in such state) is required for the valid execution, delivery and performance by any Pledgor of this Agreement, the grant by it of the Lien and security interest in favor of the Collateral Agent provided for herein, or the exercise by the Collateral Agent of its rights and remedies hereunder, except for (i) the filings described in **Section 3.2**, (ii) in the case of Accounts owing from any federal governmental agency or authority, the filing by the Collateral Agent of a notice of assignment in accordance with the federal Assignment of Claims Act of 1940, as amended, (iii) in the case of Pledged Interests, such filings and approvals as may be required in connection with a disposition of any such Pledged Interests by laws affecting the offering and sale of securities generally and (iv) authorizations, consents, approvals, declarations or filings relating to the transfer or assignment of any Collateral constituting Regulatory Approvals.

3.5 No Restrictions. There are no statutory or regulatory restrictions, prohibitions or limitations on any Pledgor's ability to grant to the Collateral Agent a Lien upon and security interest in the Collateral pursuant to this Agreement or (except for (i) the provisions of the federal Anti-Assignment Act, as amended, and Assignment of Claims Act of 1940, as amended,
(ii) any statutory or regulatory restrictions, prohibitions or limitations applicable to the transfer of any Collateral constituting Regulatory Approvals, and (ii) customary anti-assignment provisions permitted under the Note Purchase Agreement) on the exercise by the Collateral Agent of its rights and remedies hereunder (including any foreclosure upon or collection of the Collateral), and there are no contractual restrictions on any Pledgor's ability to grant such Lien and security interest.

3.6 Accounts. Each Account is, or at the time it arises will be not evidenced by any Tangible Chattel Paper or other Instrument; or if so, such Tangible Chattel Paper or other Instrument valued individually in excess of $250,000 or $1,000,000 in the aggregate (other than invoices and related correspondence and supporting documentation) shall promptly be duly endorsed to the order of the Collateral Agent and delivered to the Collateral Agent to be held as Collateral hereunder.

3.7 Pledged Interests. As of the date hereof, the Pledged Interests required to be pledged hereunder by each Pledgor consist of the number and type of shares of capital stock (in the case of issuers that are corporations) or the percentage and type of other equity interests (in the case of issuers other than corporations) as described beneath such Pledgor's name in
Annex C. All of the Pledged Interests (other than with respect to non-Wholly Owned Subsidiaries and joint ventures), and to such Pledgor's knowledge, all of the Pledged Interests with respect to non-Wholly Owned Subsidiaries and joint ventures, have been duly and validly issued and are fully paid and nonassessable (or, in the case of partnership, limited liability company or similar Pledged Interests, not subject to any capital call or other additional capital requirement) and not subject to any preemptive rights, warrants, options or similar rights or restrictions in favor of third parties or any contractual or other restrictions upon transfer. As to each issuer thereof, the Pledged Interests pledged hereunder constitute 100% or 65%, as applicable, of the outstanding voting Capital Stock of such issuer, except as set forth in Annex C.

3.8 Intellectual Property. Annexes D, E and F correctly set forth all registered Copyrights, Patents and Trademarks (other than uniform resource locaters and domain names) owned by any Pledgor as of the date hereof (and as amended from time to time pursuant to **Section 4.4**) and used or proposed to be used in its business.

3.9 Deposit Accounts. Annex G lists, as of the date hereof (and as amended from time to time pursuant to **Section 4.5**), all Deposit Accounts maintained by any Pledgor, and lists in each case the name in which the account is held, the name of the depository institution, the account number, and a description of the type or purpose of the account.

3.10 Securities and Commodity Accounts. Annex H lists, as of the date hereof (and as amended from time to time pursuant to **Section 4.6**), all Securities Accounts and Commodity Accounts maintained by any Pledgor with any Securities Intermediary or Commodity Intermediary, and lists in each case the name in which the account is held, the name of the Securities Intermediary or Commodity Intermediary, the account number, and a description of the type or purpose of the account.

3.11 Documents of Title. No bill of lading, warehouse receipt or other Document or Instrument of title is outstanding with respect to any Collateral other than Inventory in transit in the ordinary course of business to a location set forth on Annex B (as amended from time to time pursuant to **Section 4.1**) or to a customer of a Pledgor.

3.12 Commercial Tort Claims. Annex I lists, as of the date hereof (and as amended from time to time pursuant to **Section 4.8**) and to the knowledge of each Pledgor, all Commercial Tort Claims valued individually in excess of $1,000,000 existing in favor of any Pledgor.

ARTICLE IV
COVENANTS

4.1 Change of Name, Locations, etc. No Pledgor will (i) change its name, identity or corporate structure, (ii) change its chief executive office from the location thereof listed on Annex B, (iii) change the jurisdiction of its incorporation or organization from the jurisdiction listed on Annex B (whether by merger or otherwise), (iv) file any document with the Internal Revenue Service using any name other than its exact legal name listed on Annex B, or
(v) remove any Collateral (other than (A) Goods in transit, (B) mobile goods, (C) work-in- process Inventory and (D) Equipment and Inventory having a value individually or in the aggregate of $1,000,000 or less), or any books, records or other information relating to the Collateral, from the applicable location thereof listed on Annex B, or keep or maintain any Collateral (other than (A) Goods in transit, (B) mobile goods and (C) work-in-process Inventory and (D) Equipment and Inventory having a value individually or in the aggregate of $1,000,000 or less) at a location not listed on Annex B, unless in each case such Pledgor has (1) given ten
(10) days' (or such later date as may be agreed to by the Collateral Agent in its sole discretion) prior written notice to the Collateral Agent of its intention to do so, together with information regarding any such new location and such other information in connection with such proposed action as the Collateral Agent may reasonably request, and (2) delivered to the Collateral Agent ten (10) days following the Collateral Agent's request any documents, instruments or financing statements as may be reasonably required by the Collateral Agent, all in form and substance

reasonably satisfactory to the Collateral Agent, paid all necessary filing and recording fees and taxes, and taken all other actions reasonably requested by the Collateral Agent, in order to perfect and maintain the Lien upon and security interest in the Collateral provided for herein in accordance with the provisions of **Section 3.2**. On the effective date of such change or removal, Annex B shall be deemed to be amended in the form of any update to Annex B provided in connection with this **Section 4.1**.

4.2 Accounts. Each Pledgor shall promptly notify the Collateral Agent in writing of any Accounts that constitute a claim valued individually in excess of $1,000,000 against a federal governmental agency or authority, and, upon request of the Collateral Agent, such Pledgor shall take such steps as may be necessary or desirable to comply with the federal Assignment of Claims Act of 1940, as amended.

4.3 Delivery of Certain Collateral; Further Actions. All (i) certificates or (ii) Instruments representing or evidencing any Accounts, Investment Property or other Collateral valued individually in excess of $250,000 or $1,000,000 in the aggregate shall be delivered promptly to the Collateral Agent pursuant hereto to be held as Collateral hereunder, shall be in form suitable for transfer by delivery and shall be delivered together with undated stock powers duly executed in blank, appropriate endorsements or other necessary instruments of registration, transfer or assignment, duly executed and in form and substance satisfactory to the Collateral Agent, and in each case together with such other instruments or documents as the Collateral Agent may reasonably request. Each Pledgor will, at its own cost and expense, use commercially reasonable efforts to cooperate with the Collateral Agent in obtaining a control agreement, in form and substance reasonably satisfactory to the Collateral Agent, and in taking such other actions as may be reasonably requested by the Collateral Agent from time to time with respect to any Investment Property or other Collateral in which a security interest may be perfected by (or can be perfected only by) control under the UCC.

4.4 Intellectual Property.

(a) Each applicable Pledgor will, at its own expense, execute and deliver to the Collateral Agent on the Purchase Date fully completed assignments in the forms of Exhibits A and B, as applicable, for recordation in the U.S. Copyright Office or the U.S. Patent and Trademark Office with regard to any Copyright Collateral, Patent Collateral or Trademark Collateral, as the case may be, described in Annex D, E or F hereto. Within 45 days after the close of each fiscal quarter of the Borrower, the Borrower shall provide written notice of any additional registrations of or applications for Copyrights, Patents or Trademarks of all Pledgors with the U.S. Copyright Office or the U.S. Patent and Trademark Office, as applicable, together with information sufficient to permit the Collateral Agent, upon its receipt of such notice, to (and each Pledgor hereby authorizes the Collateral Agent to) modify this Agreement, as appropriate, by amending Annexes D, E and F hereto or to add additional exhibits hereto to include any Copyright, Patent or Trademark that becomes part of the Collateral under this Agreement, and such Pledgor shall additionally, at its own expense, execute and deliver to the Collateral Agent, with regard to United States Patents, Trademarks and Copyrights, fully completed assignments in the forms of Exhibits A and B, as applicable, for recordation in the U.S. Copyright Office or the U.S. Patent and Trademark Office as more fully described hereinabove, together in all instances with any other agreements, instruments and documents that the Collateral Agent may reasonably request from time to time to further effect and confirm the assignment and security interest

created by this Agreement in such Copyrights, Patents and Trademarks, and each Pledgor hereby appoints the Collateral Agent its attorney-in-fact to execute, deliver and record any and all such agreements, instruments and documents for the foregoing purposes, all acts of such attorney being hereby ratified and confirmed and such power, being coupled with an interest, shall be irrevocable for so long as this Agreement shall be in effect with respect to such Pledgor.

(b) Upon the occurrence and during the continuance of any Event of Default, each Pledgor shall use commercially reasonable efforts to obtain all requisite consents or approvals from the licensor of each License included within the Copyright Collateral, Patent Collateral or Trademark Collateral to effect the assignment of all of such Pledgor's right, title and interest thereunder to the Collateral Agent or its designee.

4.5 Deposit Accounts. Each Pledgor agrees that, unless the Collateral Agent consents otherwise in writing, (i) it will not open or maintain any Deposit Account (other than Excluded Deposit Accounts) except with a bank or financial institution that has executed and delivered to the Collateral Agent a control agreement with respect to such Deposit Account in form and substance reasonably satisfactory to the Collateral Agent (each a, "Control Agreement"), and
(ii) in the event any Pledgor opens any Deposit Account not already listed on Annex G, such Pledgor shall (in addition to complying with the other requirements of this Section) promptly furnish written notice thereof to the Collateral Agent together with information sufficient to permit the Collateral Agent, upon its receipt of such notice, to (and each Pledgor hereby authorizes the Collateral Agent to) modify this Agreement, as appropriate, by amending Annex G to include such information.

4.6 Securities and Commodity Accounts. Each Pledgor agrees that, unless the Collateral Agent consents otherwise in writing, (i) it will not open or maintain any Securities Account or Commodity Account (other than Excluded Securities Accounts) unless the Collateral Agent is the entitlement holder or Commodity Intermediary or unless the Securities Intermediary or Commodity Intermediary (as applicable) has executed and delivered to the Collateral Agent a control agreement with respect to such Securities Account or Commodity Account in form and substance reasonably satisfactory to the Collateral Agent, and (ii) in the event any Pledgor opens any Securities Account or Commodity Account not already listed on Annex H, such Pledgor shall (in addition to complying with the other requirements of this Section) promptly furnish written notice thereof to the Collateral Agent together with information sufficient to permit the Collateral Agent, upon its receipt of such notice, to (and each Pledgor hereby authorizes the Collateral Agent to) modify this Agreement, as appropriate, by amending Annex H to include such information.

4.7 Collateral in Possession of Third Party. Without limiting the generality of any other provision of this Agreement, each Pledgor agrees that it shall not permit (x) any Collateral located in the United States having a value individually or in the aggregate in excess of
$1,000,000 or (y) any Collateral located outside the United States having a value individually or in the aggregate in excess of the greater of (1) $6,000,000 (in each case, other than Goods in transit, mobile goods and work-in-process Inventory) and (2) 5% of the total assets of the Borrower and the Guarantors, to be in the possession of any bailee, warehouseman, agent, processor or other third party at any time unless such bailee or other Person (i) shall have been notified of the security interest created by this Agreement and (ii) such Pledgor shall have used commercially reasonable efforts to have such bailee or other Person execute a written agreement

with the Collateral Agent pursuant to which it (1) acknowledges that it is holding such Collateral for the benefit of the Collateral Agent and subject to such security interest and to the instructions of the Collateral Agent and (2) agrees to waive and release or subordinate any Lien (whether arising by operation of law or otherwise) it may have with respect to such Collateral, such agreement to be in form and substance reasonably satisfactory to the Collateral Agent. The Borrower agrees to pay any reasonable and documented out-of-pocket costs and expenses incurred by the Collateral Agent in obtaining the agreement specified in the foregoing clause (ii).

4.8 Commercial Tort Claims. Each Pledgor agrees that it will, promptly upon the filing of any suit, action or proceeding relating to any Commercial Tort Claim involving damages in excess of $1,000,000 in its favor, (i) furnish to the Collateral Agent a description thereof meeting the requirements of Section 9-108(e) of the UCC, which shall modify this Agreement, as appropriate, by amending Annex I to include such information, (ii) execute and deliver such documents, financing statements and other instruments, and (iii) take such other action, as the Collateral Agent may reasonably request in order to include such Commercial Tort Claim as Collateral hereunder and to perfect the security interest of the Collateral Agent therein.

4.9 Protection of Security Interest. Subject to Section 5.13 of the Note Purchase Agreement, each Pledgor agrees that it will, at its own cost and expense, take any and all actions necessary to warrant and defend the right, title and interest of the Secured Parties in and to the Collateral against the claims and demands of all other Persons.

ARTICLE V

CERTAIN PROVISIONS RELATING TO PLEDGED INTERESTS

5.1 After-Acquired Equity Interests; Ownership.

(a) Subject to Section 5.9 of the Note Purchase Agreement, if any Pledgor shall, at any time and from time to time after the date hereof, acquire any additional Capital Stock in any Person of the types described in the definition of the term "Pledged Interests," the same shall be automatically deemed to be Pledged Interests hereunder, and to be pledged to the Collateral Agent pursuant to **Section 2.1**, and such Pledgor will pledge and deposit the same with the Collateral Agent and deliver to the Collateral Agent any certificates therefor (to the extent such Pledged Interests are certificated), together with undated stock powers or other necessary instruments of transfer or assignment, duly executed in blank and in form and substance reasonably satisfactory to the Collateral Agent, together with such other certificates and instruments as the Collateral Agent may reasonably request (including UCC financing statements or appropriate amendments thereto), and will promptly thereafter deliver to the Collateral Agent a fully completed and duly executed amendment to this Agreement in the form of Exhibit D (each, a "Pledge Amendment") in respect thereof. Each Pledgor hereby authorizes the Collateral Agent to attach each such Pledge Amendment to this Agreement, and agrees that all such Collateral listed on any Pledge Amendment shall for all purposes be deemed Collateral hereunder and shall be subject to the provisions hereof; provided that the failure of any Pledgor to execute and deliver any Pledge Amendment with respect to any such additional Collateral as required hereinabove shall not impair the security interest of the Collateral Agent in such Collateral or otherwise adversely affect the rights and remedies of the Collateral Agent hereunder with respect thereto.

(b) If any Pledged Interests (whether now owned or hereafter acquired) included in the Collateral are "uncertificated securities" within the meaning of the UCC or are otherwise not evidenced by any certificate or instrument, each applicable Pledgor will promptly notify the Collateral Agent thereof and will promptly take and cause to be taken, and will (if the issuer of such uncertificated securities is a Person other than a Subsidiary of the Borrower) use best efforts to cause the issuer to take, all actions required under Articles 8 and 9 of the UCC and any other applicable law, to enable the Collateral Agent to acquire "control" of such uncertificated securities (within the meaning of such term under Section 8-106 (or its successor provision) of the UCC) and as may be otherwise necessary to perfect the security interest of the Collateral Agent therein.

5.2 Voting Rights. So long as no Event of Default shall have occurred and be continuing, each Pledgor shall be entitled to exercise all voting and other consensual rights pertaining to its Pledged Interests (subject to its obligations under **Section 5.1(a)**), and for that purpose the Collateral Agent will execute and deliver or cause to be executed and delivered to each applicable Pledgor all such proxies and other instruments as such Pledgor may reasonably request in writing to enable such Pledgor to exercise such voting and other consensual rights; provided, however, that no Pledgor will cast any vote, give any consent, waiver or ratification, or take or fail to take any action, in any manner that would, or could reasonably be expected to, violate or be inconsistent with any of the terms of this Agreement, the Note Purchase Agreement or any other Credit Document or have the effect of materially and adversely impairing the position or interests of the Secured Parties.

5.3 Dividends and Other Distributions. All interest, income, dividends, distributions and other amounts payable in cash in respect of the Pledged Interests may be paid to and retained by the Pledgors; provided, however, that all such interest, income, dividends, distributions and other amounts shall, upon the written election of the Collateral Agent after the occurrence and during the continuance of an Event of Default, be paid to the Collateral Agent and retained by it as part of the Collateral (except to the extent applied upon receipt to the repayment of the Secured Obligations). The Collateral Agent shall also be entitled at all times (whether or not during the continuance of an Event of Default), to receive directly, and to retain as part of the Collateral, (i) all additional Pledged Interests or other securities or property (other than cash) paid or payable or distributed or distributable in respect of any Pledged Interests in connection with any noncash dividend, distribution, return of capital, spin-off, stock split, split-up, reclassification, combination of shares or interests or similar rearrangement, and (ii) without affecting any restrictions against such actions contained in the Note Purchase Agreement, all additional Pledged Interests or other securities or property (including cash) paid or payable or distributed or distributable in respect of any Pledged Interests in connection with any consolidation, merger, exchange of securities, liquidation or other reorganization. All interest, income, dividends, distributions or other amounts that are received by any Pledgor in violation of the provisions of this Section shall be received in trust for the benefit of the Collateral Agent, shall be segregated from other property or funds of such Pledgor and shall be forthwith delivered to the Collateral Agent as Collateral in the same form as so received (with any necessary endorsements). Any and all property paid over to or received by the Collateral Agent pursuant to the provisions of this Section shall be retained by the Collateral Agent in a Collateral Account (as hereinafter defined) upon receipt of such property and shall be applied in accordance with the provisions of **Section 6.2**. The Collateral Agent shall, within five Business Days after all Events

of Default have been cured or waived, repay to each applicable Pledgor all cash interest, income, dividends, distributions and other amounts that such Pledgor would otherwise be permitted to retain pursuant to the provisions of this Section and that remain in such Collateral Account.

ARTICLE VI
REMEDIES

6.1 Remedies. If an Event of Default shall have occurred and be continuing, the Collateral Agent shall be entitled to exercise in respect of the Collateral all of its rights, powers and remedies provided for herein or otherwise available to it under any other Credit Document, by law, in equity or otherwise, including all rights and remedies of a secured party under the UCC, and shall be entitled in particular, but without limitation of the foregoing, to exercise the following rights, which each Pledgor agrees to be commercially reasonable:

(a) To notify any or all account debtors or obligors under any Accounts, Contracts or other Collateral of the security interest in favor of the Collateral Agent created hereby and to direct all such Persons to make payments of all amounts due thereon or thereunder directly to the Collateral Agent or to an account designated by the Collateral Agent; and in such instance and from and after such notice, all amounts and Proceeds (including wire transfers, checks and other Instruments) received by any Pledgor in respect of any Accounts, Contracts or other Collateral shall be received in trust for the benefit of the Collateral Agent hereunder, shall be segregated from the other funds of such Pledgor and shall be forthwith deposited into such account or paid over or delivered to the Collateral Agent in the same form as so received (with any necessary endorsements or assignments), to be held as Collateral and applied to the Secured Obligations as provided herein; and by this provision, each Pledgor irrevocably authorizes and directs each Person who is or shall be a party to or liable for the performance of any Contract, upon receipt of notice from the Collateral Agent to the effect that an Event of Default has occurred and is continuing, to attorn to or otherwise recognize the Collateral Agent as owner under such Contract and to pay, observe and otherwise perform the obligations under such Contract to or for the Collateral Agent or the Collateral Agent's designee as though the Collateral Agent or such designee were such Pledgor named therein, and to do so until otherwise notified by the Collateral Agent;

(b) To take possession of, receive, endorse, assign and deliver, in its own name or in the name of any Pledgor, all checks, notes, drafts and other Instruments relating to any Collateral, including receiving and opening of all mail addressed to any Pledgor concerning Accounts and other Collateral; to verify with account debtors or other contract parties the validity, amount or any other matter relating to any Accounts or other Collateral, in its own name or in the name of any Pledgor; to accelerate any Indebtedness or other obligation constituting Collateral that may be accelerated in accordance with its terms; to take or bring all actions and suits deemed necessary or appropriate to effect collections and to enforce payment of any Accounts or other Collateral; to settle, compromise or release in whole or in part any amounts owing on Accounts or other Collateral; and to extend the time of payment of any and all Accounts or other amounts owing under any Collateral and to make allowances and adjustments with respect thereto, all in the same manner and to the same extent as any Pledgor might have done;

(c) To notify any or all depository institutions with which any Deposit Accounts are maintained and which Deposit Accounts are subject to control in favor of the Collateral Agent to remit and transfer all monies, securities and other property on deposit in such Deposit Accounts or deposited or received for deposit thereafter to the Collateral Agent, for deposit in a Collateral Account or such other accounts as may be designated by the Collateral Agent, for application to the Secured Obligations as provided herein;

(d) To transfer to or register in its name or the name of any of its Collateral Agents or nominees all or any part of the Collateral, without notice to any Pledgor and with or without disclosing that such Collateral is subject to the security interest created hereunder;

(e) To require any Pledgor to, and each Pledgor hereby agrees that it will at its expense and upon request of the Collateral Agent forthwith, assemble all or any part of the Collateral as directed by the Collateral Agent and make it available to the Collateral Agent at a place designated by the Collateral Agent;

(f) To enter and remain upon the premises of any Pledgor and take possession of all or any part of the Collateral, with or without judicial process; to use the materials, services, books and records of any Pledgor for the purpose of liquidating or collecting the Collateral, whether by foreclosure, auction or otherwise; and to remove the same to the premises of the Collateral Agent or any designated agent for such time as the Collateral Agent may desire, in order to effectively collect or liquidate the Collateral;

(g) To exercise (i) all voting, consensual and other rights and powers pertaining to the Pledged Interests (whether or not transferred into the name of the Collateral Agent), at any meeting of shareholders, partners, members or otherwise, and (ii) any and all rights of conversion, exchange, subscription and any other rights, privileges or options pertaining to the Pledged Interests as if it were the absolute owner thereof (including the right to exchange at its discretion any and all of the Pledged Interests upon the merger, consolidation, reorganization, reclassification, combination of shares or interests, similar rearrangement or other similar fundamental change in the structure of the applicable issuer, or upon the exercise by any Pledgor or the Collateral Agent of any right, privilege or option pertaining to such Pledged Interests), and in connection therewith, the right to deposit and deliver any and all of the Pledged Interests with any committee, depositary, transfer agent, registrar or other designated agency upon such terms and conditions as the Collateral Agent may determine, and give all consents, waivers and ratifications in respect of the Pledged Interests, all without liability except to account for any property actually received by it, but the Collateral Agent shall have no duty to exercise any such right, privilege or option or give any such consent, waiver or ratification and shall not be responsible for any failure to do so or delay in so doing; and for the foregoing purposes each Pledgor will promptly execute and deliver or cause to be executed and delivered to the Collateral Agent, upon request, all such proxies and other instruments as the Collateral Agent may reasonably request to enable the Collateral Agent to exercise such rights and powers; AND IN FURTHERANCE OF THE FOREGOING AND WITHOUT LIMITATION THEREOF, UPON THE OCCURRENCE AND DURING THE CONTINUATION OF AN EVENT OF DEFAULT, EACH PLEDGOR HEREBY IRREVOCABLY CONSTITUTES AND APPOINTS THE COLLATERAL AGENT AS THE TRUE AND LAWFUL PROXY AND ATTORNEY-IN- FACT OF SUCH PLEDGOR, WITH FULL POWER OF SUBSTITUTION IN THE PREMISES, TO EXERCISE ALL SUCH VOTING, CONSENSUAL AND OTHER RIGHTS

AND POWERS TO WHICH ANY HOLDER OF ANY PLEDGED INTERESTS WOULD BE ENTITLED BY VIRTUE OF HOLDING THE SAME, WHICH PROXY AND POWER OF ATTORNEY, BEING COUPLED WITH AN INTEREST, IS IRREVOCABLE AND SHALL BE EFFECTIVE FOR SO LONG AS THIS AGREEMENT SHALL BE IN EFFECT; and

(h) To sell, resell, assign and deliver, in its sole discretion, all or any of the Collateral, in one or more parcels (subject to any legal or statutory restrictions applicable to the transfer of any Collateral constituting Regulatory Approvals), on any securities exchange on which any Pledged Interests may be listed, at public or private sale, at any of the Collateral Agent's offices or elsewhere, for cash, upon credit or for future delivery, at such time or times and at such price or prices and upon such other terms as the Collateral Agent may deem satisfactory. If any of the Collateral is sold by the Collateral Agent upon credit or for future delivery, the Collateral Agent shall not be liable for the failure of the purchaser to purchase or pay for the same and, in the event of any such failure, the Collateral Agent may resell such Collateral. In no event shall any Pledgor be credited with any part of the Proceeds of sale of any Collateral until and to the extent cash payment in respect thereof has actually been received by the Collateral Agent. Each purchaser at any such sale shall hold the property sold absolutely, free from any claim or right of whatsoever kind, including any equity or right of redemption of any Pledgor, and each Pledgor hereby expressly waives all rights of redemption, stay or appraisal, and all rights to require the Collateral Agent to marshal any assets in favor of such Pledgor or any other party or against or in payment of any or all of the Secured Obligations, that it has or may have under any rule of law or statute now existing or hereafter adopted. No demand, presentment, protest, advertisement or notice of any kind (except any notice required by law, as referred to below), all of which are hereby expressly waived by each Pledgor, shall be required in connection with any sale or other disposition of any part of the Collateral. If any notice of a proposed sale or other disposition of any part of the Collateral shall be required under applicable law, the Collateral Agent shall give the applicable Pledgor at least 10 days' prior notice of the time and place of any public sale and of the time after which any private sale or other disposition is to be made, which notice each Pledgor agrees is commercially reasonable. The Collateral Agent shall not be obligated to make any sale of Collateral if it shall determine not to do so, regardless of the fact that notice of sale may have been given. The Collateral Agent may, without notice or publication, adjourn any public or private sale or cause the same to be adjourned from time to time by announcement at the time and place fixed for sale, and such sale may, without further notice, be made at the time and place to which the same was so adjourned. Upon each public sale and, to the extent permitted by applicable law, upon each private sale, the Collateral Agent may purchase all or any of the Collateral being sold, free from any equity, right of redemption or other claim or demand, and may make payment therefor by endorsement and application (without recourse) of the Secured Obligations in lieu of cash as a credit on account of the purchase price for such Collateral.

6.2 Application of Proceeds.

(a) All Proceeds collected by the Collateral Agent upon any sale, other disposition of or realization upon any of the Collateral, together with all other moneys received by the Collateral Agent hereunder, shall be applied in accordance with Section 2.8 of the Note Purchase Agreement.

(b) In the event that the proceeds of any such sale, disposition or realization are insufficient to pay all amounts to which the Secured Parties are legally entitled, the Pledgors shall be jointly and severally liable for the deficiency, together with interest thereon at the highest rate specified in any applicable Credit Document for interest on overdue principal or such other rate as shall be fixed by applicable law, together with the costs of collection and all other fees, costs and expenses payable hereunder, subject to Section 9.1 of the Note Purchase Agreement.

(c) Upon any sale of any Collateral hereunder by the Collateral Agent (whether by virtue of the power of sale herein granted, pursuant to judicial proceeding, or otherwise), the receipt of the Collateral Agent or the officer making the sale shall be a sufficient discharge to the purchaser or purchasers of the Collateral so sold, and such purchaser or purchasers shall not be obligated to see to the application of any part of the purchase money paid over to the Collateral Agent or such officer or be answerable in any way for the misapplication thereof.

6.3 Collateral Accounts. Upon the occurrence and during the continuance of an Event of Default, the Collateral Agent shall have the right to cause to be established and maintained, at its principal office or such other location or locations as it may establish from time to time in its discretion, one or more accounts (collectively, "Collateral Accounts") for the collection of cash Proceeds of the Collateral. Such Proceeds, when deposited, shall continue to constitute Collateral for the Secured Obligations and shall not constitute payment thereof until applied as herein provided. The Collateral Agent shall have sole dominion and control over all funds deposited in any Collateral Account, and such funds may be withdrawn therefrom only by the Collateral Agent. Upon the occurrence and during the continuance of an Event of Default, the Collateral Agent shall have the right to (and, if directed by the Purchasers pursuant to the Note Purchase Agreement, shall) apply amounts held in the Collateral Accounts in payment of the Secured Obligations in the manner provided for in **Section 6.2**.

6.4 Grant of License. Each Pledgor hereby grants to the Collateral Agent, effective upon the occurrence and during the continuance of an Event of Default, a non-exclusive license (exercisable without payment of royalty or other compensation to any Pledgor) to use, license or sublicense any Patent Collateral, Trademark Collateral or Copyright Collateral now owned or licensed or hereafter acquired or licensed by such Pledgor, wherever the same may be located throughout the world, for such term or terms, on such conditions and in such manner as the Collateral Agent shall determine, whether general, special or otherwise, and whether on an exclusive or nonexclusive basis, and including in such license reasonable access to all media in which any of the licensed items may be recorded or stored and to all computer software and programs used for the compilation or printout thereof; provided, however that nothing in this **Section 6.4** shall require Pledgors to grant any license in any Patent Collateral, Trademark Collateral or Copyright Collateral to the extent a grant of such license or sublicense would violate any Patent License, Trademark License or Copyright License applicable to such Collateral. The use of such license or sublicense by the Collateral Agent shall be exercised, at the option of the Collateral Agent, only upon the occurrence and during the continuation of an Event of Default; provided that any license, sublicense or other transaction entered into by the Collateral Agent in accordance herewith shall be binding upon each applicable Pledgor notwithstanding any subsequent cure of an Event of Default.

6.5 Private Sales.

(a) Each Pledgor recognizes that the Collateral Agent may be compelled, at any time after the occurrence and during the continuance of an Event of Default, to conduct any sale of all or any part of the Pledged Interests without registering or qualifying such Pledged Interests under the Securities Act and/or any applicable state securities laws in effect at such time. Each Pledgor acknowledges that any such private sales may be made in such manner and under such circumstances as the Collateral Agent may deem necessary or advisable in its sole and absolute discretion, including at prices and on terms that might be less favorable than those obtainable through a public sale without such restrictions (including a public offering made pursuant to a registration statement under the Securities Act), and, notwithstanding such circumstances, agrees that any such sale shall not be deemed not to have been made in a commercially reasonable manner solely because it was conducted as a private sale, and agrees that the Collateral Agent shall have no obligation to conduct any public sales and no obligation to delay the sale of any Pledged Interests for the period of time necessary to permit its registration for public sale under the Securities Act and applicable state securities laws, and shall not have any responsibility or liability as a result of its election so not to conduct any such public sales or delay the sale of any Pledged Interests, notwithstanding the possibility that a substantially higher price might be realized if the sale were deferred until after such registration. Each Pledgor hereby waives any claims against the Collateral Agent or any other Secured Party arising by reason of the fact that the price at which any Pledged Interests may have been sold at any private sale was less than the price that might have been obtained at a public sale or was less than the aggregate amount of the Secured Obligations, even if the Collateral Agent accepts the first offer received and does not offer such Pledged Interests to more than one offeree.

(b) Each Pledgor agrees to use commercially reasonable efforts to do or cause to be done all such other acts as may be necessary to make such sale or sales of any portion of the Collateral pursuant to **Section 6.1** and this **Section 6.5** valid and binding and in compliance with all applicable Requirements of Law. Each Pledgor agrees that a breach of any of the covenants contained in this **Section 6.5** will cause irreparable injury to the Collateral Agent and the other Secured Parties, that the Collateral Agent and the other Secured Parties have no adequate remedy at law in respect of such breach and, as a consequence, that each and every covenant contained in this Section shall be specifically enforceable against the Pledgors.

6.6 The Pledgors Remain Liable. Notwithstanding anything herein to the contrary, (i) each Pledgor shall remain liable under all Contracts to which it is a party included within the Collateral (including all Ownership Agreements) to perform all of its obligations thereunder to the same extent as if this Agreement had not been executed, (ii) the exercise by the Collateral Agent of any of its rights or remedies hereunder shall not release any Pledgor from any of its obligations under any of such Contracts, and (iii) except as specifically provided for herein below, the Collateral Agent shall not have any obligation or liability by reason of this Agreement under any of such Contracts, nor shall the Collateral Agent be obligated to perform any of the obligations or duties of any Pledgor thereunder or to take any action to collect or enforce any claim for payment assigned hereunder. The powers, rights and remedies conferred on the Collateral Agent hereunder are solely to protect its interest and privilege in such Contracts, as Collateral, and shall not impose any duty upon it to exercise any such powers, rights or remedies.

6.7 Waivers. Each Pledgor, to the greatest extent not prohibited by applicable law, hereby (i) agrees that it will not invoke, claim or assert the benefit of any rule of law or statute now or hereafter in effect (including any right to prior notice or judicial hearing in connection

with the Collateral Agent's possession, custody or disposition of any Collateral or any appraisal, valuation, stay, extension, moratorium or redemption law), or take or omit to take any other action, that would, or could reasonably be expected to, have the effect of delaying, impeding or preventing the exercise of any rights and remedies in respect of the Collateral, the absolute sale of any of the Collateral or the possession thereof by any purchaser at any sale thereof, and waives the benefit of all such laws and statutes and further agrees that it will not hinder, delay or impede the execution of any power granted hereunder to the Collateral Agent, but that it will permit the execution of every such power as though no such laws or statutes were in effect, (ii) waives all rights that it has or may have under any rule of law or statute now existing or hereafter adopted to require the Collateral Agent to marshal any Collateral or other assets in favor of such Pledgor or any other party or against or in payment of any or all of the Secured Obligations, and (iii) waives all rights that it has or may have under any rule of law or statute now existing or hereafter adopted to demand, presentment, protest, advertisement or notice of any kind (except notices expressly provided for herein). In addition, each Pledgor waives any and all rights of contribution or subrogation upon the sale or disposition of all or any portion of the Collateral by the Collateral Agent.

ARTICLE VII

THE COLLATERAL AGENT

7.1 The Collateral Agent; Standard of Care. The Collateral Agent will hold all items of the Collateral at any time received under this Agreement in accordance with the provisions hereof and will exercise reasonable care with respect thereto. The obligations of the Collateral Agent as holder of the Collateral and interests therein and with respect to the disposition thereof, and otherwise under this Agreement and the other Credit Documents, are only those expressly set forth in this Agreement and the other Credit Documents. The Collateral Agent shall act hereunder at the direction, or with the consent, of the Purchasers on the terms and conditions set forth in the Note Purchase Agreement. The powers conferred on the Collateral Agent hereunder are solely to protect its interest, on behalf of the Secured Parties, in the Collateral, and shall not impose any duty upon it to exercise any such powers. Except for treatment of the Collateral in its possession in a manner substantially equivalent to that which the Collateral Agent, in its individual capacity, accords its own property of a similar nature, which standard shall in no event be less than reasonable care, and the accounting for moneys actually received by it hereunder, the Collateral Agent shall have no duty as to any Collateral or as to the taking of any necessary steps to preserve rights against prior parties or any other rights pertaining to the Collateral. Neither the Collateral Agent nor any other Secured Party shall be liable to any Pledgor (i) for any loss or damage sustained by such Pledgor, or (ii) for any loss, damage, depreciation or other diminution in the value of any of the Collateral that may occur as a result of or in connection with or that is in any way related to any exercise by the Collateral Agent or any other Secured Party of any right or remedy under this Agreement, any failure to demand, collect or realize upon any of the Collateral or any delay in doing so, or any other act or failure to act on the part of the Collateral Agent or any other Secured Party, except to the extent that the same is caused by its own gross negligence or willful misconduct.

7.2 Further Assurances; Attorney-in-Fact.

(a) Each Pledgor hereby irrevocably authorizes the Collateral Agent at any time and from time to time to file in any filing office in any UCC jurisdiction any financing statements and amendments thereto that (a) indicate the Collateral (i) as all assets of such Pledgor or words of similar effect, regardless of whether any particular asset included within the Collateral falls within the scope of Article 9 of the UCC of any such jurisdiction, or (ii) as being of an equal or lesser scope or with greater detail, and (b) provide any other information required by Part 5 of Article 9 of the UCC for the sufficiency or filing office acceptance of any financing statement or amendment.

(b) Each Pledgor agrees that it will do such further acts and things (including making any notice filings with state tax or revenue authorities required to be made by account creditors in order to enforce any Accounts in such state) and execute and deliver to the Collateral Agent such additional conveyances, assignments, agreements and instruments as the Collateral Agent may reasonably deem necessary to perfect, establish, confirm and maintain the security interest and Lien provided for herein, to carry out the purposes of this Agreement or to further assure and confirm unto the Collateral Agent its rights, powers and remedies hereunder (in each case, subject to Section 5.13 of the Note Purchase Agreement).

(c) Each Pledgor agrees that, upon request by the Collateral Agent after the occurrence and during the continuance of an Event of Default, it will file all applications, notices, documents, papers and instruments deemed necessary or desirable by the Collateral Agent to approve, use, transfer, assign or license any Regulatory Approval (including any forms that the FDA may require with respect to any Biologics License Application or license issued by the FDA in connection therewith).

(d) Each Pledgor hereby irrevocably appoints the Collateral Agent its lawful attorney- in-fact, with full authority in the place and stead of such Pledgor and in the name of such Pledgor, the Collateral Agent or otherwise, and with full power of substitution in the premises (which power of attorney, being coupled with an interest, is irrevocable for so long as this Agreement shall be in effect), from time to time in the Collateral Agent's discretion after the occurrence and during the continuance of an Event of Default (except for the actions described in clause (i) below, which may be taken by the Collateral Agent without regard to whether an Event of Default has occurred) to take any action and to execute any instruments that the Collateral Agent may deem necessary or advisable to accomplish the purpose of this Agreement, including:

(i) to sign the name of such Pledgor on any financing statement, continuation statement, notice or other similar document that, in the Collateral Agent's reasonable judgment, is necessary in order to perfect or continue perfected the security interest granted under this Agreement;

(ii) to ask, demand, collect, sue for, recover, compound, receive and give acquittance and receipts for moneys due and to become due under or in respect of any of the Collateral;

(iii) to receive, endorse and collect any checks, drafts, Instruments, Chattel Paper and other orders for the payment of money made payable to such Pledgor representing any interest, income, dividend, distribution or other amount payable in respect of any of the Collateral and to give full discharge for the same;

(iv) to obtain, maintain and adjust any property or casualty insurance required to be maintained by such Pledgor under Section 5.7 of the Note Purchase Agreement and direct the payment of proceeds thereof to the Collateral Agent;

(v) to pay or discharge taxes, Liens or other encumbrances levied or placed on or threatened against the Collateral, the legality or validity thereof and the amounts necessary to discharge the same to be determined by the Collateral Agent in its sole discretion, any such payments made by the Collateral Agent to become Secured Obligations of the Pledgors to the Collateral Agent, due and payable immediately and without demand; and

(vi) to file any claims or take any action or institute any proceedings that the Collateral Agent may deem necessary or advisable for the collection of any of the Collateral or otherwise to enforce the rights of the Collateral Agent with respect to any of the Collateral;

(vii) to use, sell, assign, transfer, pledge, make any agreement with respect to or otherwise deal with any and all of the Collateral as fully and completely as though the Collateral Agent were the absolute owner of the Collateral for all purposes, and to do from time to time, at the Collateral Agent's option and the Pledgors' expense, all other acts and things deemed necessary by the Collateral Agent to protect, preserve or realize upon the Collateral and to more completely carry out the purposes of this Agreement; and

(viii) to file all applications, notices, documents, papers and instruments that the Collateral Agent in its reasonable judgment deems necessary to approve, use, transfer, assign or license any Regulatory Approval (including any forms that the FDA may require with respect to any Biologics License Application or license issued by the FDA in connection therewith).

(e) If any Pledgor fails to perform any covenant or agreement contained in this Agreement after written request to do so by the Collateral Agent (provided that no such request shall be necessary at any time after the occurrence and during the continuance of an Event of Default), the Collateral Agent may itself perform, or cause the performance of, such covenant or agreement and may take any other action that it deems necessary and appropriate for the maintenance and preservation of the Collateral or its security interest therein, and the reasonable expenses so incurred in connection therewith shall be payable by the Pledgors under **Section 8.1**.

ARTICLE VIII
MISCELLANEOUS

8.1 Indemnity and Expenses. Subject to Section 9.1 or 9.2 of the Note Purchase Agreement, the Pledgors agree jointly and severally to indemnify and hold harmless the Collateral Agent, each other Secured Party and each of their Related Parties from and against any and all claims, damages, demands, losses, obligations, judgments and liabilities (including reasonable and documented out of pocket attorneys' fees and expenses) in any way arising out of or in connection with this Agreement and the transactions contemplated hereby, except to the

extent the same shall arise as a result of the gross negligence or willful misconduct of the party seeking to be indemnified.

8.2 No Waiver. The rights and remedies of the Secured Parties expressly set forth in this Agreement and the other Credit Documents are cumulative and in addition to, and not exclusive of, all other rights and remedies available at law, in equity or otherwise. No failure or delay on the part of any Secured Party in exercising any right, power or privilege shall operate as a waiver thereof, nor shall any single or partial exercise of any such right, power or privilege preclude any other or further exercise thereof or the exercise of any other right, power or privilege or be construed to be a waiver of any Default or Event of Default. No course of dealing between the Pledgors and the Secured Parties or their agents or employees shall be effective to amend, modify or discharge any provision of this Agreement or any other Credit Document or to constitute a waiver of any Default or Event of Default. No notice to or demand upon any Pledgor in any case shall entitle such Pledgor or any other Pledgor to any other or further notice or demand in similar or other circumstances or constitute a waiver of the right of any Secured Party to exercise any right or remedy or take any other or further action in any circumstances without notice or demand.

8.3 Enforcement. By its acceptance of the benefits of this Agreement, each Purchaser agrees that this Agreement may be enforced only by the Collateral Agent, acting upon the instructions or with the consent of the Purchasers as provided for in the Note Purchase Agreement, and that no Purchaser shall have any right individually to enforce or seek to enforce this Agreement or to realize upon any Collateral or other security given to secure the payment and performance of the Secured Obligations.

8.4 Amendments, Waivers, etc. No amendment, modification, waiver, discharge or termination of, or consent to any departure by any Pledgor from, any provision of this Agreement, shall be effective unless in a writing signed by the Collateral Agent and such of the Purchasers as may be required under Section 9.10 of the Note Purchase Agreement to concur in the action then being taken, and then the same shall be effective only in the specific instance and for the specific purpose for which given.

8.5 Continuing Security Interest; Term; Successors and Assigns; Assignment; Termination and Release; Survival. This Agreement shall create a continuing security interest in the Collateral and shall secure the payment and performance of all of the Secured Obligations as the same may arise and be outstanding at any time and from time to time from and after the date hereof, and shall (i) remain in full force and effect until the occurrence of the Termination Requirements (as hereinafter defined), (ii) be binding upon and enforceable against each Pledgor and its successors and assigns (provided, however, that no Pledgor may sell, assign or transfer any of its rights, interests, duties or obligations hereunder without the prior written consent of the Purchasers) and (iii) inure to the benefit of and be enforceable by each Secured Party and its successors and assigns. Upon any sale or other disposition by any Pledgor of any Collateral in a transaction expressly permitted hereunder or under or pursuant to the Note Purchase Agreement or any other applicable Credit Document, the Lien and security interest created by this Agreement in and upon such Collateral shall be automatically released, and upon the satisfaction of all of the Termination Requirements, this Agreement and the Lien and security interest created hereby shall terminate (provided, that the provisions of **Section 6.7** shall survive the termination of this Agreement); and in connection with any such release or termination, the Collateral Agent,

at the request and expense of the applicable Pledgor, will execute and deliver to such Pledgor such documents and instruments evidencing such release or termination as such Pledgor may reasonably request and will assign, transfer and deliver to such Pledgor, without recourse and without representation or warranty, such of the Collateral as may then be in the possession of the Collateral Agent (or, in the case of any partial release of Collateral, such of the Collateral so being released as may be in its possession). The Collateral Agent will, at the Pledgors' expense, execute and deliver to the applicable Pledgor such documents as such Pledgor may reasonably request to enter into non-disturbance or similar agreements (substantially in the form of Exhibit H to the Note Purchase Agreement) in connection with the licensing of Intellectual Property. All representations, warranties, covenants and agreements herein shall survive the execution and delivery of this Agreement and any Pledgor Accession. For purposes of this Agreement, "Termination Requirements" means (x) the payment in full in cash of the Secured Obligations (other than contingent and indemnification obligations not then due and payable), and (y) the termination of the Commitments.

8.6 Additional Pledgors. Each Pledgor recognizes that the provisions of the Note Purchase Agreement require certain Persons that become Subsidiaries of the Borrower, and that are not already parties hereto, to execute and deliver a Pledgor Accession, whereupon each such Person shall become a Pledgor hereunder with the same force and effect as if originally a Pledgor hereunder on the date hereof, and agrees that its obligations hereunder shall not be discharged, limited or otherwise affected by reason of the same, or by reason of the Collateral Agent's actions in effecting the same or in releasing any Pledgor hereunder, in each case without the necessity of giving notice to or obtaining the consent of such Pledgor or any other Pledgor.

8.7 Notices. All notices and other communications provided for hereunder shall be given to the parties in the manner and subject to the other notice provisions set forth in the Note Purchase Agreement or the Guaranty, as applicable.

8.8 Governing Law. This Agreement and any claims, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement shall be governed by, and construed in accordance with, the law of the State of New York.

8.9 Severability. To the extent any provision of this Agreement is prohibited by or invalid under the applicable law of any jurisdiction, such provision shall be ineffective only to the extent of such prohibition or invalidity and only in such jurisdiction, without prohibiting or invalidating such provision in any other jurisdiction or the remaining provisions of this Agreement in any jurisdiction.

8.10 Construction. The headings of the various articles, sections and subsections of this Agreement have been inserted for convenience only and shall not in any way affect the meaning or construction of any of the provisions hereof. Unless the context otherwise requires, words in the singular include the plural and words in the plural include the singular. The provisions of Section 1.3 of the Note Purchase Agreement are hereby incorporated by reference as if fully set forth herein.

8.11 Counterparts. This Agreement may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of

which when taken together shall constitute a single contract. Delivery of an executed counterpart of a signature page of this Agreement by facsimile or in electronic format (e.g., “pdf,” “tif” or similar file formats) shall be effective as delivery of a manually executed counterpart of this Agreement.

[The remainder of this page left blank intentionally.**]**

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed under seal by their duly authorized officers as of the date first above written.

DYNAVAX TECHNOLOGIES CORPORATION

By:
Name:
Title:

(signatures continued)

Accepted and agreed to:

DEERFIELD PARTNERS, L.P., as Collateral Agent

By: Deerfield Mgmt, L.P. General Partner

By: J.E. Flynn Capital, LLC General Partner

By: Name: David J. Clark
Title: Authorized Signatory

ANNEX A FILING LOCATIONS

Name of Pledgor	Filing Location

9155452

ANNEX B

JURISDICTION OF ORGANIZATION, CERTAIN LOCATIONS

Pledgor: Dynavax Technologies Corporation

Jurisdiction of Incorporation/Organization: Federal Tax ID no.:
Organizational ID no.:

Chief Executive Office Address:

Locations of Records Related to Collateral: Locations of Equipment or Inventory:

Address	Leased

Other places of business:

Trade/fictitious or prior corporate names (last five years):

Names used in tax filings (last five years):

Pledgor

Name of Issuer

Type of Interests

Certificate Number

No. of shares (if applicable)

Percentage of Outstanding Interests
in Issuer

ANNEX C PLEDGED INTERESTS

ANNEX D

COPYRIGHTS AND COPYRIGHT APPLICATIONS

9155452

ANNEX E

PATENTS AND PATENT APPLICATIONS

9155452

ANNEX F

TRADEMARKS AND TRADEMARK APPLICATIONS

9155452

ANNEX G DEPOSIT ACCOUNTS

Loan Party	Name of Depository Institution	Account Number	Type/Purpose

9155452

ANNEX H SECURITIES ACCOUNTS

COMMODITY ACCOUNTS

9155452

ANNEX I COMMERCIAL TORT CLAIMS

9155452

EXHIBIT A

GRANT OF SECURITY INTEREST IN COPYRIGHTS

WHEREAS, **[NAME OF PLEDGOR]** (the "Pledgor") is the owner of the copyright applications and registrations listed on Schedule A attached hereto (all such copyrights, registrations and applications, collectively, the "Copyrights"); and

WHEREAS, the Pledgor has entered into a Pledge and Security Agreement (as amended, modified, restated or supplemented from time to time, the "Security Agreement"), dated as of [●], 20[●], in which the Pledgor has agreed with Deerfield Partners, L.P., as Collateral Agent (the "Collateral Agent"), with offices at 780 Third Avenue, 37th Floor, New York, New York 10017, to execute this Grant;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, as security for the payment and performance of the Secured Obligations (as defined in the Security Agreement), the Pledgor does hereby grant to the Collateral Agent a security interest in all of its right, title and interest in and to the Copyrights, and the use thereof, together with all proceeds and products thereof. This Grant has been given in conjunction with the security interest granted to the Collateral Agent under the Security Agreement, and the provisions of this Grant are without prejudice to and in addition to the provisions of the Security Agreement, which are incorporated herein by this reference.

This Grant of Security Interest in Copyrights and any claims, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement shall be governed by, and construed in accordance with, the law of the State of New York.

[NAME OF PLEDGOR]

By:
Name:
Title:

Schedule A

COPYRIGHTS AND COPYRIGHT APPLICATIONS

Owner	Application or Registration No.	Country	Registration or Filing Date

EXHIBIT B

GRANT OF SECURITY INTEREST IN PATENTS AND TRADEMARKS

WHEREAS, **[NAME OF PLEDGOR]** (the "Pledgor") is the owner of the trademark applications and registrations listed on Schedule A attached hereto, (all such trademarks, registrations and applications, collectively, the "Trademarks") and is the owner of the patents and patent applications listed on Schedule A attached hereto (all such patents, registrations and applications, collectively, the "Patents"); and

WHEREAS, the Pledgor has entered into a Pledge and Security Agreement (as amended, modified, restated or supplemented from time to time, the "Security Agreement"), dated as of [●], 20[●], in which the Pledgor has agreed with Deerfield Partners, L.P., as Collateral Agent (the "Collateral Agent"), with offices at 780 Third Avenue, 37th Floor, New York, New York 10017, to execute this Grant;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, as security for the payment and performance of the Secured Obligations (as defined in the Security Agreement), the Pledgor does hereby grant to the Collateral Agent a security interest in all of its right, title and interest in and to the Trademarks and the Patents, and the use thereof, together with all proceeds and products thereof and the goodwill of the businesses symbolized by the Trademarks. This Grant has been given in conjunction with the security interest granted to the Collateral Agent under the Security Agreement, and the provisions of this Grant are without prejudice to and in addition to the provisions of the Security Agreement, which are incorporated herein by this reference.

This Grant of Security Interest in Patents and Trademarks and any claims, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement shall be governed by, and construed in accordance with, the law of the State of New York.

[NAME OF PLEDGOR]

By:
Name:
Title:

Schedule A

TRADEMARKS AND TRADEMARK APPLICATIONS

Owner	Mark	Application or Registration No.	Country	Issue or Filing Date

PATENTS AND PATENT APPLICATIONS

Owner	Application or Registration No.	Country	Inventor	Issue or Filing Date

EXHIBIT C

FORM OF PLEDGOR ACCESSION

THIS PLEDGOR ACCESSION (this "Accession"), dated as of , 20 , is executed and delivered by **[NAME OF NEW PLEDGOR]**, a (the "New Pledgor"), in favor of Deerfield Partners, L.P., in its capacity as Collateral Agent under the Note Purchase Agreement referred to below (in such capacity, the "Collateral Agent"), pursuant to the Security Agreement referred to below.

Reference is made to the Note Purchase Agreement, dated as of October 26, 2016, among Dynavax Technologies Corporation (the "Borrower"), the Purchasers party thereto and the Collateral Agent (as amended, modified, restated or supplemented from time to time, the "Note Purchase Agreement"). In connection with and as a condition to the purchase of the Notes by the Purchasers under the Note Purchase Agreement, the Borrower, pursuant to a Pledge and Security Agreement, dated as of the Purchase Date (as amended, modified, restated or supplemented from time to time, the "Security Agreement"), has granted in favor of the Collateral Agent a security interest in and Lien upon the Collateral described therein as security for their obligations under the Note Purchase Agreement and the other Credit Documents. Capitalized terms used herein without definition shall have the meanings given to them in the Security Agreement.

The Borrower has agreed under the Note Purchase Agreement to cause certain of its future direct and indirect subsidiaries to become a Subsidiary Guarantor (as defined in the Note Purchase Agreement) and to become party to the Security Agreement as a Pledgor thereunder. The New Pledgor is a direct or indirect subsidiary of the Borrower and, as required by the Note Purchase Agreement, has become a Subsidiary Guarantor as of the date hereof. The New Pledgor will obtain benefits as a result of the sale by the Borrower of the Notes to the Purchaser under the Note Purchase Agreement, which benefits are hereby acknowledged, and, accordingly, desire to execute and deliver this Accession. Therefore, in consideration of the foregoing and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and as further inducement to the Purchasers in connection with their purchase of the Notes from the Borrower under the Note Purchase Agreement, the New Pledgor hereby agrees as follows:

1. The New Pledgor hereby joins in and agrees to be bound by each and all of the provisions of the Security Agreement as a Pledgor thereunder. In furtherance (and without limitation) of the foregoing, pursuant to Section 2.1 of the Security Agreement, and as security for all of the Secured Obligations, the New Pledgor hereby pledges, assigns and delivers to the Collateral Agent, for the ratable benefit of the Secured Parties, and grants to the Collateral Agent, for the ratable benefit of the Secured Parties, a Lien upon and security interest in, all of its right, title and interest in and to the Collateral as set forth in Section 2.1 of the Security Agreement, all on the terms and subject to the conditions set forth in the Security Agreement.

2. The New Pledgor hereby represents and warrants that (i) Schedule 1 hereto sets forth all information required to be listed on Annexes A, B, C, D, E, F, G, H and I to the Security

Agreement in order to make each representation and warranty contained in Sections 3.1 and 3.2 of the Security Agreement true and correct with respect to the New Pledgor as of the date hereof and after giving effect to this Accession and (ii) after giving effect to this Accession and to the incorporation into such Annexes, as applicable, of the information set forth in Schedule 1, each representation and warranty contained in Article III of the Security Agreement is true and correct with respect to the New Pledgor as of the date hereof, as if such representations and warranties were set forth at length herein.

3. This Accession shall be a Credit Document (within the meaning of such term under the Note Purchase Agreement), shall be binding upon and enforceable against the New Pledgor and its successors and assigns, and shall inure to the benefit of and be enforceable by each Secured Party and its successors and assigns. This Accession and its attachments are hereby incorporated into the Security Agreement and made a part thereof.

This Accession and any claims, controversy, dispute or cause of action (whether in contract or tort or otherwise) based upon, arising out of or relating to this Agreement shall be governed by, and construed in accordance with, the law of the State of New York.

IN WITNESS WHEREOF, the New Pledgor has caused this Accession to be executed under seal by its duly authorized officer as of the date first above written.

[NAME OF NEW PLEDGOR]

By:
Name:
Title:

Schedule 1

Information to be added to Annex A of the Security Agreement:

FILING LOCATIONS

Name of Pledgor	Filing Location

Information to be added to Annex B of the Security Agreement:

JURISDICTION OF ORGANIZATION, CERTAIN LOCATIONS

[Name of Pledgor:**]**

Jurisdiction of Incorporation/Organization: Federal Tax ID no.:
Organizational ID no.:

Chief Executive Office Address:

Locations of Records Related to Collateral: Locations of Equipment or Inventory: Other places of business: Trade/fictitious or prior corporate names (last five years):

Names used in tax filings (last five years):

Information to be added to **[**Annexes C/D/E/F/G/H/I**]** of the Security Agreement:

[Complete as applicable**]**

EXHIBIT D PLEDGE AMENDMENT

THIS PLEDGE AMENDMENT, dated as of , 20 , is delivered by **[NAME OF PLEDGOR]** (the "Pledgor") pursuant to Section 5.1 of the Security Agreement referred to below. The Pledgor hereby agrees that this Pledge Amendment may be attached to the Pledge and Security Agreement, dated as of [●], 20[●], made by the Pledgor and certain other pledgors named therein in favor of Deerfield Partners, L.P., as Collateral Agent (as amended, modified, restated or supplemented from time to time, the "Security Agreement," capitalized terms defined therein being used herein as therein defined), and that the Pledged Interests listed on Schedule 1 to this Pledge Amendment shall be deemed to be part of the Pledged Interests within the meaning of the Security Agreement and shall become part of the Collateral and shall secure all of the Secured Obligations as provided in the Security Agreement. This Pledge Amendment and its attachments are hereby incorporated into the Security Agreement and made a part thereof.

[NAME OF PLEDGOR]

By:
Name:
Title:

Schedule 1

PLEDGED INTERESTS

Name of Issuer	Type of Interests	Certificate Number	No. of shares (if applicable)	Percentage of Outstanding Interests in Issuer

9155452

EXHIBIT G-1

U.S. TAX COMPLIANCE CERTIFICATE

(For Foreign Purchasers That Are Not Partnerships For U.S. Federal Income Tax Purposes) Reference is hereby made to the Note Purchase Agreement dated as of October 26, 2016 (as amended, supplemented or otherwise modified from time to time, the "Note Purchase Agreement"), among Dynavax Technologies Corporation, as Borrower, Deerfield Partners, L.P., as Collateral Agent, and each Purchaser from time to time party thereto.

Pursuant to the provisions of Section 2.11 of the Note Purchase Agreement, the undersigned hereby certifies that (i) it is the sole record and beneficial owner of the Note(s) in respect of which it is providing this certificate, (ii) it is not a bank within the meaning of Section 881(c)(3)(A) of the Code, (iii) it is not a ten percent shareholder of the Borrower within the meaning of Section 871(h)(3)(B) of the Code and (iv) it is not a controlled foreign corporation related to the Borrower as described in Section 881(c)(3)(C) of the Code.

Unless otherwise defined herein, terms defined in the Note Purchase Agreement and used herein shall have the meanings given to them in the Note Purchase Agreement.

[NAME OF PURCHASER]

By: Name:
Title:
Date: , 20[ ]

EXHIBIT G-2

U.S. TAX COMPLIANCE CERTIFICATE

(For Foreign Purchasers That Are Partnerships or Disregarded Entities For U.S. Federal Income Tax Purposes)

Reference is hereby made to the Note Purchase Agreement dated as of October 26, 2016 (as amended, supplemented or otherwise modified from time to time, the "Note Purchase Agreement"), among Dynavax Technologies Corporation, as Borrower, Deerfield Partners, L.P., as Collateral Agent, and each Purchaser from time to time party thereto.

Pursuant to the provisions of Section 2.11 of the Note Purchase Agreement, the undersigned hereby certifies that (i) it is the sole record owner of the Note(s) in respect of which it is providing this certificate, (ii) with respect to the extension of credit pursuant to this Note Purchase Agreement or any other Credit Document, neither the undersigned nor any of its beneficial owners is a bank extending credit pursuant to a loan agreement entered into in the ordinary course of its trade or business within the meaning of Section 881(c)(3)(A) of the Code,
(iii) none of its beneficial owners is a ten percent shareholder of the Borrower within the meaning of Section 871(h)(3)(B) of the Code and (iv) none of its beneficial owners is a controlled foreign corporation related to the Borrower as described in Section 881(c)(3)(C) of the Code.

Unless otherwise defined herein, terms defined in the Note Purchase Agreement and used herein shall have the meanings given to them in the Note Purchase Agreement.

[NAME OF PURCHASER]

By: Name:
Title:
Date: , 20[ ]

Exhibit 10.29

DEERFIELD PARTNERS, L.P.
c/o Deerfield Management Company, L.P.
780 Third Avenue, 37th Floor
New York, NY 10017

December 20, 2016

Dynavax Technologies Corporation
2929 Seventh Street, Suite 100
Berkeley, CA 94710-2753
Attention: General Counsel

Ladies and Gentlemen:

Reference is hereby made to that certain Note Purchase Agreement, dated as of October 26, 2016 (the "Note Purchase Agreement"), by and between **DYNAVAX TECHNOLOGIES CORPORATION**, a Delaware corporation (the "Borrower"), the purchasers party thereto from time to time, and **DEERFIELD PARTNERS, L.P.**, as collateral agent (the "Collateral Agent"). Capitalized terms used but not defined herein shall have the meanings given to them in the Note Purchase Agreement.

The Borrower has advised the Collateral Agent that it desires to terminate, and desires for it and the other Credit Parties to be discharged and relieved from their obligations to the Collateral Agent and Purchasers under, the Credit Documents, including the Note Purchase Agreement, other than obligations of the Borrower and the other Credit Parties in favor of the Purchasers and the Collateral Agent under the indemnification and expense reimbursement provisions of the Credit Documents (including, without limitation, Sections 9.1 and 9.2 of the Note Purchase Agreement), and other provisions of the Credit Documents which by their express terms survive termination of the Credit Documents pursuant to Section 9.13 of the Note Purchase Agreement or otherwise (collectively, the "Contingent Obligations"), and by its execution hereof, the Borrower and the other Credit Parties hereby acknowledge, confirm and reaffirm such survival.

In connection with the Borrower's aforementioned desires, the Purchasers and the Collateral Agent are willing to terminate all of the Credit Documents and discharge and relieve the Borrower and the other Credit Parties from their obligations to the Collateral Agent and Purchasers under the Credit Documents other than the Contingent Obligations upon payment by the Borrower of an amount equal to the Grace Fee, calculated in accordance with Section 2.4(b)(iii) of the Note Purchase Agreement (such amount, the "Termination Amount"), and hereby instruct the Borrower to pay or cause to be paid to the Purchasers the Termination Amount, by wire transfer of United States dollars in immediately available funds, in accordance with the following instructions:

Payee: Deerfield Partners, L.P.
Amount of Termination Amount to be Paid to Payee: $657,000.00
Wiring Information: Citibank, N.A. New York
ABA # 021-000-089
A/C Morgan Stanley & Co. NY
A/C # 38890774
Sub A/C **Deerfield Partners, L.P.**
Sub A/C # 038-036208

Payee: Deerfield International Master Fund, L.P.
Amount of Termination Amount to be Paid to Payee: $843,000.00
Wiring Information: Citibank, N.A. New York
ABA # 021-000-089
A/C Morgan Stanley & Co. NY
A/C # 38890774
Sub A/C **Deerfield International Master Fund, L.P.**
Sub A/C # 038-CDFCZ3

In consideration of receipt by the Purchasers of the Termination Amount (the day of such receipt, the "Termination Date"), the Purchasers and the Collateral Agent agree that the Note Purchase Agreement and each other Credit Document shall automatically terminate and be of no further force and effect and each of the parties thereto shall cease to have any rights or obligations thereunder, including any obligation of the Borrower to pay the Grace Fee pursuant to Section 2.4(b)(ii) of the Note Purchase Agreement, and shall be relieved and discharged therefrom; provided, however, that nothing herein is intended or shall be deemed or construed to terminate (x) the Contingent Obligations, all of which shall continue after the Termination Date, and any payment of the Termination Amount or (y) claims that arise because the Collateral Agent or any Purchaser is required by a court or similar body for any reason to disgorge any amounts paid over to it by, or on behalf of, any Credit Party.

This letter agreement may be executed or otherwise authenticated in any number of counterparts and by the different parties hereto in separate counterparts, each of which when so executed or otherwise authenticated and delivered shall be an original, but all of which shall together constitute one and the same instrument. Any such counterpart which may be delivered by facsimile, email or similar electronic transmission shall be deemed the equivalent of an originally signed counterpart and shall be fully admissible in any enforcement proceedings regarding this letter agreement. THIS LETTER AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.

Notwithstanding anything to the contrary herein, if the Purchasers have not received payment of the Termination Amount as contemplated herein on the date hereof, then this letter agreement shall automatically terminate and shall be of no further force or effect.

- Remainder of Page Intentionally Left Blank -
[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have caused this letter agreement to be executed by their duly authorized officers as of the date first above written.

DEERFIELD PARTNERS, L.P., as Collateral Agent and as a Purchaser

By: Deerfield Mgmt, L.P.
General Partner

By: J.E. Flynn Capital, LLC
General Partner

By: /s/ DAVID J. CLARK
Name: David J. Clark
Title: Authorized Signatory

DEERFIELD INTERNATIONAL MASTER FUND, L.P., as a Purchaser

By: Deerfield Mgmt, L.P.
General Partner

By: J.E. Flynn Capital, LLC
General Partner

By: /s/ DAVID J. CLARK
Name: David J. Clark
Title: Authorized Signatory

ACKNOWLEDGED AND AGREED
as of the date first written above:

DYNAVAX TECHNOLOGIES CORPORATION, as the Borrower

By:	/s/ MICHAEL OSTRACH
Name:	Michael Ostrach
Title:	Senior Vice President

Exhibit 12.1

	For the Year Ended December 31,				
	2016	**2015**	**2014**	**2013**	**2012**
	(In thousands)				
Earnings					
Loss from continuing operations before income taxes	$ (112,444)	$ (106,794)	$ (90,722)	$ (66,720)	$ (69,949)
Fixed charges	630	1,108	508	509	2,795
Earnings, as defined	**$ (111,814)**	**$ (105,686)**	**$ (90,214)**	**$ (66,211)**	**$ (67,154)**
Fixed charges:					
Interest expense	$ -	$ 572	$ 35	$ -	$ 2,351
Estimated interest component of rent expenses	630	536	473	509	444
Total fixed charges	$ 630	$ 1,108	$ 508	$ 509	$ 2,795
Preferred stock deemed dividend	-	-	-	8,469	-
Total fixed charges and preferred dividend	**$ 630**	**$ 1,108**	**$ 508**	**$ 8,978**	**$ 2,795**
Deficiency of earnings available to cover fixed charges and preferred stock dividends[1]	$ (112,444)	(106,794)	$ (90,722)	(75,189)	(69,949)

(1): Adjusted earnings, as described above, were insufficient to cover fixed charges in each year.

Exhibit 21.1

List of Subsidiaries

Dynavax GmbH

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-3ASR No. 333-207966) and Post-Effective Amendment No. 1 to Registration Statement (Form S-3 POSASR No. 333-207966) of Dynavax Technologies Corporation and in the related Prospectuses,

(2) Registration Statements (Form S-3 Nos. 333-191610 and 333-200083) of Dynavax Technologies Corporation and in the related Prospectuses,

(3) Amendment No. 1 to Registration Statement (Form S-3/A No. 333-191610) of Dynavax Technologies Corporation and in the related Prospectus, and

(4) Registration Statements (Form S-8 Nos. 333-113220, 333-136345, 333-145094, 333-152819, 333-157741, 333-164255, 333-171552, 333-190313, 333-197838, 333-204506 and 333-211747) pertaining to the 1997 Equity Incentive Plan, the 2004 Stock Incentive Plan, the 2004 Employee Stock Purchase Plan, the 2010 Employment Inducement Award Plan, and/or the 2011 Equity Incentive Plan of Dynavax Technologies Corporation; of our reports dated March 13, 2017, with respect to the consolidated financial statements of Dynavax Technologies Corporation and the effectiveness of internal control over financial reporting of Dynavax Technologies Corporation included in this Annual Report (Form 10-K) of Dynavax Technologies Corporation for the year ended December 31, 2016.

/s/ Ernst & Young LLP

Redwood City, California
March 13, 2017

Exhibit 31.1

Rule 13a-14(a) Certification of Chief Executive Officer

CERTIFICATIONS

I, Eddie Gray, certify that:

1. I have reviewed this annual report on Form 10-K of Dynavax Technologies Corporation (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

By: /s/ EDDIE GRAY

Eddie Gray
Chief Executive Officer
(Principal Executive Officer)

Date: March 13, 2017

Exhibit 31.2

Rule 13a-14(a) Certification of Principal Financial Officer

CERTIFICATIONS

I, Michael Ostrach, certify that:

1. I have reviewed this annual report on Form 10-K of Dynavax Technologies Corporation (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

By: /s/ MICHAEL OSTRACH

Michael Ostrach
Chief Financial Officer
(Principal Financial Officer)

Date: March 13, 2017

Exhibit 32.1

Certification Pursuant to Section 1350 of Chapter 63
of Title 18 of the United States Code

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), I, Eddie Gray, Chief Executive Officer of Dynavax Technologies Corporation (the "Company"), hereby certify that, to the best of my knowledge:

(i) The Company's Annual Report on Form 10-K for the period ended December 31, 2016 (the "Annual Report"), to which this Certificate is attached as Exhibit 32.1, fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

(ii) The information contained in the Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned has set his hand hereto as of the 13th day of March, 2017.

By: /s/ EDDIE GRAY

Eddie Gray
Chief Executive Officer
(Principal Executive Officer)

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Dynavax Technologies Corporation under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.

Exhibit 32.2

Certification Pursuant to Section 1350 of Chapter 63
of Title 18 of the United States Code

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), I, Michael Ostrach, Chief Financial Officer of Dynavax Technologies Corporation (the "Company"), hereby certify that, to the best of my knowledge:

(i) The Company's Annual Report on Form 10-K for the period ended December 31, 2016 (the "Annual Report"), to which this Certificate is attached as Exhibit 32.2, fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

(ii) The information contained in the Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

In Witness Whereof, the undersigned has set his hand hereto as of the 13th day of March, 2017.

By: /s/ MICHAEL OSTRACH

Michael Ostrach
Chief Financial Officer
(Principal Financial Officer)

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of Dynavax Technologies Corporation under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.