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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

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

For the quarterly period ended June 30, 2011

or

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

For transition period from _____ to_____.

Commission File Number: 001-31918

IDERA PHARMACEUTICALS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**04-3072298**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*
167 Sidney Street **Cambridge, Massachusetts** *(Address of principal executive offices)*	**02139** *(zip code)*

(617) 679-5500
(Registrant's telephone number, including area code)

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 registrant was required to submit and post such files). Yes ☑ No ☐

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 Exchange Act). Yes ☐ No ☑

Common Stock, par value $.001 per share	27,631,216
Class	Outstanding as of July 29, 2011

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FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements, other than statements of historical fact, included or incorporated in this report regarding our strategy, future operations, collaborations, intellectual property, financial position, future revenues, projected costs, prospects, plans, and objectives of management are forward-looking statements. The words "believes," "anticipates," "estimates," "plans," "expects," "intends," "may," "could," "should," "potential," "likely," "projects," "continue," "will," and "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We cannot guarantee that we actually will achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. There are a number of important factors that could cause our actual results to differ materially from those indicated or implied by forward-looking statements. These important factors include those set forth below under Part II, Item 1A "Risk Factors." These factors and the other cautionary statements made in this Quarterly Report on Form 10-Q should be read as being applicable to all related forward-looking statements whenever they appear in this Quarterly Report on Form 10-Q. In addition, any forward-looking statements represent our estimates only as of the date that this Quarterly Report on Form 10-Q is filed with the Securities and Exchange Commission and should not be relied upon as representing our estimates as of any subsequent date. We do not assume any obligation to update any forward-looking statements. We disclaim any intention or obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

PART I — FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS.

IDERA PHARMACEUTICALS, INC.

CONDENSED BALANCE SHEETS
(UNAUDITED)

(In thousands, except per share amounts)	June 30, 2011	December 31, 2010
ASSETS		
Current assets:		
Cash and cash equivalents	$ 21,492	$ 17,008
Short-term investments	2,016	17,635
Prepaid expenses and other current assets	837	997
Total current assets	24,345	35,640
Property and equipment, net	697	930
Restricted cash	311	311
Total assets	$ 25,353	$ 36,881
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,139	$ 1,757
Accrued expenses	2,523	1,783
Total current liabilities	3,662	3,540
Other liabilities	217	240
Total liabilities	3,879	3,780
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.01 par value, Authorized — 5,000 shares Series A convertible preferred stock, Designated — 1,500 shares, Issued and outstanding — 1 share	—	—
Common stock, $0.001 par value, Authorized — 70,000 shares Issued and outstanding — 27,626 and 27,596 shares at June 30, 2011 and December 31, 2010, respectively	28	28
Additional paid-in capital	386,215	384,702
Accumulated deficit	(364,769)	(351,642)
Accumulated other comprehensive income	—	13
Total stockholders' equity	21,474	33,101
Total liabilities and stockholders' equity	$ 25,353	$ 36,881

The accompanying notes are an integral part of these financial statements.

IDERA PHARMACEUTICALS, INC.

CONDENSED STATEMENTS OF OPERATIONS
(UNAUDITED)

(In thousands, except per share amounts)	Three Months Ended June 30, 2011	Three Months Ended June 30, 2010	Six Months Ended June 30, 2011	Six Months Ended June 30, 2010
Alliance revenue	$ 33	$ 4,386	$ 41	$ 9,963
Operating expenses:				
Research and development	4,142	6,961	8,695	11,547
General and administrative	2,166	2,784	4,452	5,516
Total operating expenses	6,308	9,745	13,147	17,063
Loss from operations	(6,275)	(5,359)	(13,106)	(7,100)
Other income (expense):				
Investment income, net	5	29	26	55
Foreign currency exchange (loss) gain	(12)	34	(47)	(194)
Net loss	$ (6,282)	$ (5,296)	$(13,127)	$ (7,239)
Basic net loss per common share (Note 12)	$ (0.23)	$ (0.23)	$ (0.48)	$ (0.31)
Diluted net loss per common share (Note 12)	$ (0.23)	$ (0.23)	$ (0.48)	$ (0.31)
Shares used in computing basic net loss per common share	27,619	23,473	27,612	23,467
Shares used in computing diluted net loss per common share	27,619	23,473	27,612	23,467

The accompanying notes are an integral part of these financial statements.

IDERA PHARMACEUTICALS, INC.

CONDENSED STATEMENTS OF CASH FLOWS
(UNAUDITED)

(In thousands)	Six Months Ended June 30, 2011	2010
Cash Flows from Operating Activities:		
Net loss	$ (13,127)	$ (7,239)
Adjustments to reconcile net loss to net cash used in operating activities		
Loss from disposition of assets	1	3
Stock-based compensation	1,439	2,147
Non-employee stock option expense	6	(11)
Depreciation expense	253	287
Amortization of investment premiums	46	119
Issuance of common stock for services rendered	25	1
Changes in operating assets and liabilities:		
Accounts receivable	—	4,410
Prepaid expenses and other current assets	58	(997)
Accounts payable, accrued expenses and other liabilities	107	3,704
Deferred revenue	—	(9,854)
Net cash used in operating activities	(11,192)	(7,430)
Cash Flows from Investing Activities:		
Purchases of available-for-sale securities	(1,025)	(8,309)
Proceeds from maturity of available-for-sale securities	16,585	—
Decrease in restricted cash	102	103
Purchases of property and equipment	(21)	(79)
Net cash provided by (used in) investing activities	15,641	(8,285)
Cash Flows from Financing Activities:		
Proceeds from exercise of common stock options and employee stock purchases	43	71
Payments on capital lease	(8)	(10)
Net cash provided by financing activities	35	61
Net increase (decrease) in cash and cash equivalents	4,484	(15,654)
Cash and cash equivalents, beginning of period	17,008	25,471
Cash and cash equivalents, end of period	$ 21,492	$ 9,817

The accompanying notes are an integral part of these financial statements.

IDERA PHARMACEUTICALS, INC.

NOTES TO CONDENSED FINANCIAL STATEMENTS
June 30, 2011
(UNAUDITED)

(1) Organization

Idera Pharmaceuticals, Inc. ("Idera" or the "Company") is a biotechnology company engaged in the discovery and development of DNA-and RNA-based drug candidates targeted to Toll-Like Receptors, or TLRs, to treat infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants, and gene silencing oligonucleotide, or GSO, technology. Drug candidates are compounds that the Company is developing and that have not been approved for any commercial use. TLRs are specific receptors present in immune system cells that recognize the DNA or RNA of bacteria or viruses and initiate an immune response. Relying on its expertise in DNA and RNA chemistry, the Company has designed and created proprietary TLR agonists and antagonists to modulate immune responses. A TLR agonist is a compound that stimulates an immune response through the targeted TLR. A TLR antagonist is a compound that blocks activation of an immune response through the targeted TLR.

Idera's business strategy is to advance applications of its TLR-targeted drug candidates in multiple disease areas simultaneously as well as to advance its GSO technology. Under this strategy, the Company seeks to advance some of these applications through internal programs, and to advance other applications through collaborative alliances with pharmaceutical companies. Collaborators provide the necessary resources and drug development experience to advance the Company's compounds in their programs. Upfront payments and milestone payments received from collaborations may also help to provide the Company with the financial resources for its internal research and development programs.

The Company's internal programs are focused on developing TLR-targeted drug candidates for the potential treatment of infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants. The Company also is advancing its GSO technology for potential application as research reagents and as therapeutic agents.

In addition to its internal programs, the Company is currently collaborating with two pharmaceutical companies to advance other applications of its TLR-targeted compounds. The Company is collaborating with Merck KGaA for the use of TLR9 agonists in cancer treatment, excluding cancer vaccines. The Company also is collaborating with Merck Sharp & Dohme Corp. formerly Merck & Co., Inc., which is referred to herein as Merck, for the use of TLR7, TLR8, and TLR9 agonists as vaccine adjuvants in the fields of cancer, infectious diseases, and Alzheimer's disease. Merck KGaA and Merck are not related.

At June 30, 2011, the Company had an accumulated deficit of $364.8 million. The Company expects to incur substantial operating losses in future periods. The Company does not expect to generate significant product revenue or royalties until it successfully completes development and obtains marketing approval for drug candidates, either alone or in collaborations with third parties, which it expects will take a number of years. In order to commercialize its drug candidates, the Company needs to complete clinical development and to comply with comprehensive regulatory requirements. In 2011, the Company expects that its research and development expenses will be lower than its research and development expenses in 2010 reflecting the completion of multiple Phase 1 clinical trials in 2010 and delays in the initiation of clinical trials planned for 2011.

The Company had cash, cash equivalents, and investments of $23.5 million at June 30, 2011. The Company believes that its existing cash, cash equivalents, and investments will be sufficient to fund its operations for at least the next twelve months based on our current operating plan. The Company will need to raise additional funds in order to operate its business beyond such time. Additional financing may not be available to the Company when it needs it or may not be available on favorable terms.

The Company is subject to a number of risks and uncertainties similar to those of other companies of the same size within the biotechnology industry, such as uncertainty of success and timeliness of development, including clinical trial outcomes in internal and collaborative programs, uncertainty of funding, and history of operating losses.

(2) New Accounting Pronouncements

The Company adopted Financial Accounting Standards Board, or FASB, Accounting Standard Update No. 2009-13, "Multiple-Element Revenue Arrangements" ("ASU No. 2009-13") on January 1, 2011. ASU No. 2009-13 updates the existing multiple-element revenue arrangements guidance currently included in Accounting Standards Codification No. 605-25 in two ways. The first change relates to the determination of when the individual deliverables included in multiple-element arrangements may be treated as separate units of accounting. This is significant since it may result in the requirement to separate more deliverables within an arrangement, ultimately leading to less revenue deferral. The second change modifies the manner in which the transaction consideration is allocated across the separately identified deliverables. Since the Company is applying ASU No. 2009-13 prospectively to arrangements entered into or materially modified after the adoption date and since there were no new collaborations or material modifications to existing collaborations in the six months ended June 30, 2011, the adoption of ASU No. 2009-13 had no effect on the Company's financial position and results of operations through June 30, 2011. The effect that ASU No. 2009-13 may have on the Company's policy for recognizing revenue under any future collaboration agreements will depend upon the terms of those future collaboration agreements, if any.

The Company adopted FASB Accounting Standard Update No. 2010-17, "Milestone Method of Revenue Recognition" ("ASU No. 2010-17") on January 1, 2011. ASU No. 2010-17 provides guidance on defining a milestone and determining when it may be appropriate to apply the milestone method of revenue recognition for research or development transactions. The Company is applying ASU No. 2010-17 prospectively to arrangements entered into or materially modified after the adoption date. Since the Company did not earn any milestones during the first six months of 2011, the adoption of ASU No. 2010-17 has had no effect on the Company's financial position and results of operations through June 30, 2011. Since the Company used a similar method of recognizing milestone revenue prior to adopting ASU No. 2010-17, the Company does not expect that the adoption of ASU No. 2010-17 will have a significant effect on its policy for recognizing revenue on any milestones that it receives in future periods.

In May 2011, the FASB issued Accounting Standards Update No. 2011-04, "Fair Value Measurement (Topic 820)" ("ASU No. 2011-04"), which updates the existing fair value measurement guidance currently included in the Accounting Standards Codification to achieve common fair value measurement and disclosure requirements in United States Generally Accepted Accounting Principles ("U.S. GAAP") and International Financial Reporting Standards. ASU 2011-04 is effective on a prospective basis to interim and annual periods beginning after December 15, 2011. The Company is currently evaluating the effect that ASU 2011-04 may have on its fair value measurement policy.

In June 2011, the FASB issued Accounting Standard Update No. 2011-05, "Comprehensive Income" ("ASU No. 2011-05"), which will require companies to present the components of net income and other comprehensive income either as one continuous statement or as two consecutive statements. ASU No. 2011-05 eliminates the option to present components of other comprehensive income as part of the statement of changes in stockholders' equity. The update does not change the items which must be reported in other comprehensive income, how such items are measured or when they must be reclassified to net income. ASU No. 2011-05 is effective for interim and annual periods beginning after December 15, 2011. We do not expect ASU No. 2011-05 to have a material impact on our financial statements or results of operations.

(3) Unaudited Interim Financial Statements

The accompanying unaudited financial statements included herein have been prepared by the Company in accordance with U.S. GAAP for interim financial information and pursuant to the rules and regulations of the Securities and Exchange Commission (the "SEC"). Accordingly, certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. GAAP have been condensed or omitted pursuant to such rules and regulations. In the opinion of management, all adjustments, consisting of normal recurring adjustments, and disclosures considered necessary for a fair presentation of interim period results have been included. Interim results for the three and six months ended June 30, 2011 are not necessarily indicative of results that may be expected for the year ended December 31, 2011. For further information, refer to the financial statements and footnotes thereto included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2010, which was filed with the SEC on March 10, 2011.

(4) Cash, Cash Equivalents and Short-Term Investments

The Company considers all highly liquid investments with maturities of 90 days or less when purchased to be cash equivalents. Cash and cash equivalents at June 30, 2011 and December 31, 2010 consisted of cash and money market funds.

Management determines the appropriate classification of marketable securities at the time of purchase. Investments that the Company does not have the positive intent to hold to maturity are classified as "available-for-sale" and reported at fair market value. Unrealized gains and losses associated with available-for-sale investments are recorded in "Accumulated other comprehensive income" on the accompanying balance sheets. The amortization of premiums and accretion of discounts, and any realized gains and losses and declines in value judged to be other-than-temporary, and interest and dividends for all available-for-sale securities are included in "Investment income, net" on the accompanying statements of operations. Investments that the Company intends to hold to maturity are classified as "held-to-maturity" investments. The Company had no "held-to-maturity" investments at either June 30, 2011 or December 31, 2010. The cost of securities sold is based on the specific identification method.

The Company had no realized gains or losses from available-for-sale securities in the three or six months ended June 30, 2011 and 2010. There were no losses or other-than-temporary declines in value included in "Investment income, net" for any securities for the three or six months ended June 30, 2011 and 2010. The Company had no auction rate securities as of June 30, 2011 and December 31, 2010.

The Company's available-for-sale short-term investments consisted of the following at June 30, 2011 and December 31, 2010:

	June 30, 2011			
(In thousands)	Cost	Gross Unrealized (Losses)	Gross Unrealized Gains	Estimated Fair Value
Corporate bonds due in one year or less	$ 2,016	$ —	$ —	$ 2,016
Total	$ 2,016	$ —	$ —	$ 2,016

	December 31, 2010			
(In thousands)	Cost	Gross Unrealized (Losses)	Gross Unrealized Gains	Estimated Fair Value
Agency bonds due in one year or less	$ 3,201	$ —	$ —	$ 3,201
Corporate bonds due in one year or less	3,214	—	4	3,218
U.S. government bonds dues in one year or less	11,207	—	9	11,216
Total	$ 17,622	$ —	$ 13	$ 17,635

(5) Fair Value of Assets and Liabilities

The Company measures fair value at the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date using assumptions that market participants would use in pricing the asset or liability (the "inputs") into a three-tier fair value hierarchy. This fair value hierarchy gives the highest priority (Level 1) to quoted prices in active markets for identical assets or liabilities and the lowest priority (Level 3) to unobservable inputs in which little or no market data exists, requiring companies to develop their own assumptions. Observable inputs that do not meet the criteria of Level 1, and include quoted prices for similar assets or liabilities in active markets or quoted prices for identical assets and liabilities in markets that are not active, are categorized as Level 2. Level 3 inputs are those that reflect the Company's estimates about the assumptions market participants would use in pricing the asset or liability, based on the best information available in the circumstances. Valuation techniques for assets and liabilities measured using Level 3 inputs may include unobservable inputs such as projections, estimates and management's interpretation of current market data. These unobservable Level 3 inputs are only utilized to the extent that observable inputs are not available or cost-effective to obtain.

The table below presents the assets and liabilities measured at fair value on a recurring basis at June 30, 2011 categorized by the level of inputs used in the valuation of each asset and liability.

(In thousands)	Total	Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets				
Money market fund	$ 21,418	$ 21,418	$ —	$ —
Short-term investments	2,016	—	2,016	—
Total	$ 23,434	$ 21,418	$ 2,016	$ —
Liabilities	$ —	$ —	$ —	$ —

The Level 1 assets consist of money market funds, which are actively traded daily. The Level 2 assets consist of corporate bond investments whose fair value is generally determined from quoted market prices received from pricing services based upon quoted prices from active markets and/or other significant observable market transactions at fair value. Since these prices may not represent actual transactions of identical securities, they are classified as Level 2. Since all investments are classified as available-for-sale securities, any unrealized gains or losses are recorded in accumulated other comprehensive income or loss within stockholders' equity on the balance sheet. The Company did not elect to measure any other financial assets or liabilities at fair value. See Note (4).

(6) Property and Equipment

At June 30, 2011 and December 31, 2010, net property and equipment at cost consisted of the following:

(In thousands)	June 30, 2011	December 31, 2010
Leasehold improvements	$ 525	$ 515
Laboratory equipment and other	2,896	2,889
Total property and equipment, at cost	3,421	3,404
Less: accumulated depreciation	(2,724)	(2,474)
Property and equipment, net	$ 697	$ 930

As of June 30, 2011 and December 31, 2010, laboratory equipment and other included approximately $79,000 of office equipment financed under capital leases with accumulated depreciation of approximately $64,000 and $56,000, respectively.

Depreciation expense, which includes amortization of assets recorded under capital leases, was approximately $125,000 and $143,000 in the three months ended June 30, 2011 and 2010, respectively, and approximately $253,000 and $287,000 in the six months ended June 30, 2011 and 2010, respectively.

(7) Restricted Cash

As part of the Company's lease arrangement for its office and laboratory facility, the Company was required to restrict $619,000 of cash for a security deposit. The restricted cash was reduced by a total of approximately $308,000 upon the second, third and fourth anniversaries of the June 2007 lease commencement date. As a result, at June 30, 2011, restricted cash was $311,000. The restricted cash is held in certificates of deposit securing a line of credit for the lessor.

(8) Comprehensive Loss

The following table includes the components of comprehensive loss for the three and six months ended June 30, 2011 and 2010.

	Three months ended June 30,		Six months ended June 30,	
(In thousands)	**2011**	**2010**	**2011**	**2010**
Net loss	$ (6,282)	$ (5,296)	$ (13,127)	$ (7,239)
Other comprehensive (loss) income	(4)	23	(13)	40
Total comprehensive loss	$ (6,286)	$ (5,273)	$ (13,140)	$ (7,199)

Other comprehensive (loss) income represents the change in the net unrealized gains (losses) on available-for-sale investments during the period.

(9) Revenue Recognition

An important part of the Company's business strategy is to enter into research and development collaborations with biotechnology and pharmaceutical corporations that bring expertise and resources to the potential research and development and commercialization of drugs based on the Company's technology. Under the Company's research and development collaborations, the Company has generally licensed specified portions of its intellectual property and provided research and development services to the collaborator during the period of continued involvement in the early portion of the collaborations. The collaborators have generally been responsible for drug development activities initiated after the collaboration is effective. The collaborators are also generally responsible for any commercialization activities that may be initiated if any of the drug candidates receive marketing approval from the appropriate regulatory authority.

Under the Company's existing collaborative arrangements, the Company has received non-refundable license fees, milestone payments, reimbursements of certain internal and external research and development expenses and patent-related expenses. The Company is also entitled to receive royalties on product sales. The Company classifies all of these amounts as revenue in its statement of operations since it considers licensing intellectual property and providing research and development and patent-related services to be part of its central business operations. In the three and six months ended June 30, 2010, alliance revenue consisted primarily of revenue recognized under the Merck KGaA and Merck collaborations. Since the Company completed the research portions of these collaborations during 2010, all of the upfront license fee payments were fully amortized and recognized by December 2010. Consequently, the Company did not recognize any revenue under the Merck KGaA and Merck collaborations during the three and six months ended June 30, 2011. Alliance revenue for the three and six months ended June 30, 2011 and 2010, including revenue recognized under the Company's collaborative arrangements with Merck KGaA and Merck during the 2010 period, was as follows:

(In thousands)	Three Months Ended June 30, 2011	Three Months Ended June 30, 2010	Six Months Ended June 30, 2011	Six Months Ended June 30, 2010
Collaboration revenue				
Merck KGaA	$ —	$ 3,048	$ —	$ 7,351
Merck	—	1,296	—	2,546
	—	4,344	—	9,897
Other revenue	33	42	41	66
Total alliance revenue	$ 33	$ 4,386	$ 41	$ 9,963

During the three and six months ended June 30, 2010, the Company incurred approximately $1,000 and $16,000, respectively, in third-party expenses in connection with its collaborative arrangements. The Company did not incur any such expenses in the corresponding 2011 periods. These third party expenses are classified as research and development and general and administrative expenses in the Company's statement of operations.

When evaluating multiple element arrangements, the Company considers whether each deliverable of the arrangement represents a separate unit of accounting based on specified criteria such as whether the deliverable has standalone value to the collaborator. Any fixed or determinable payments that the Company expects to receive under the arrangement are allocated among the separate units of accounting and the appropriate revenue recognition criteria are applied to each of these separate units. Any item that does not qualify as a separate unit of accounting is combined with other appropriate items and the combined deliverable is treated as a separate unit of accounting.

The allocation of fixed or determinable payments to the separate units of accounting is based on the relative-selling-price method, which is based on the following hierarchy used in determining the selling price for each unit of accounting: (1) Vendor specific objective evidence, or "VSOE", the price at which the item is regularly sold by the vendor on a standalone basis, is the preferred method. (2) Third-party evidence, or "TPE", of vendors selling similar goods to similarly situated customers on a standalone basis if VSOE of selling price of a product or service is not available. (3) Best estimate of selling price, or "BESP", if neither VSOE nor TPE of selling price of a product or service is available.

The timing of revenue recognition from upfront license fees received under collaboration agreements depends upon the terms of the agreement.

The Company recognizes revenue from reimbursements earned in connection with research and development collaboration agreements as related research and development costs are incurred, and contractual services are performed. The Company includes amounts contractually owed to it under these research and development collaboration agreements, including any earned but unbilled receivables, in receivables in its balance sheets. The Company's principal costs under these agreements are generally for its personnel and related expenses of conducting research and development, as well as for research and development performed by outside contractors or consultants or related research and development materials provided by third parties or for clinical trials it conducts on behalf of a collaborator.

For payments that are contingent upon milestone events or achieving a specific result from the research and development efforts the Company recognizes these milestone payments as revenue in their entirety upon achieving the related milestone provided the milestone meets the criteria specified below. Milestones typically consist of significant events in the development life cycle of the related technology, such as initiating clinical trials, filing for approval with regulatory agencies, and obtaining approvals from regulatory agencies. The Company recognizes revenue from milestone payments received under collaboration agreements in their entirety upon achieving the related milestone, provided that the milestone event is substantive, its achievability was not reasonably assured at

the inception of the agreement, the amount attributed to the milestone is reasonable in relation to the Company's performance and to the amounts attributed to the other deliverables in the arrangement and the Company has no further performance obligations relating to the milestone event. In the event that the agreement provides for payment to be made subsequent to the Company's standard payment terms, the Company recognizes revenue when payment becomes due.

Amounts received prior to satisfying the above revenue recognition criteria are recorded as deferred revenue in the Company's balance sheets. The Company classifies amounts that it expects to recognize in the next twelve months as short-term deferred revenue. The Company classifies amounts that it does not expect to recognize within the next twelve months as long-term deferred revenue.

Although the Company follows detailed guidelines in measuring revenue, certain judgments affect the application of its revenue policy. For example, in connection with its existing collaboration agreements, any deferred revenue the Company has recorded on its balance sheet is classified as short-term or long-term deferred revenue based on its best estimate of when such amounts will be recognized. However, these estimates are based on the Company's collaboration agreements and its then current operating plan and, if either should change, the Company may recognize a different amount of deferred revenue over the subsequent twelve-month period.

The Company's estimate of deferred revenue also reflects management's estimate of the periods of its involvement in its collaborations and the estimated periods over which its performance obligations will be completed. In some instances, the timing of satisfying these obligations can be difficult to estimate. Accordingly, the Company's estimates may change in subsequent periods. Such changes to estimates would result in a change in revenue recognition amounts. If these estimates and judgments change over the course of these agreements, it may affect the timing and amount of revenue that the Company recognizes and records in subsequent periods.

Additional information on the Company's collaborative arrangements is included in Note (10).

(10) Collaboration and License Agreements

(a) Collaboration and License Agreement with Merck KGaA

In December 2007, the Company entered into an exclusive, worldwide license agreement with Merck KGaA to research, develop and commercialize products containing its TLR9 agonists for the treatment of cancer, excluding cancer vaccines, which agreement became effective February 4, 2008. Under the terms of the agreement, the Company granted Merck KGaA worldwide exclusive rights to its lead TLR9 agonists, IMO-2055 and IMO-2125, and to a specified number of novel, follow-on TLR9 agonists to be identified by Merck KGaA and the Company under a research collaboration, for use in the treatment, cure and/or delay of the onset or progression of cancer in humans. Under the terms of the agreement: Merck KGaA paid the Company in February 2008 a $40.0 million upfront license fee in Euros of which $39.7 million was received due to foreign currency exchange rates in effect at that time; Merck KGaA agreed to reimburse future development costs for certain of the Company's IMO-2055 clinical trials for the period in which the Company continued to conduct the trials on behalf of Merck KGaA; Merck KGaA agreed to pay up to €264 million in development, regulatory approval, and commercial success milestone payments if products containing the Company's TLR9 agonist compounds are successfully developed and marketed for treatment, cure and/or delay of the onset or progression of cancer in humans; and Merck KGaA agreed to pay mid single-digit to low double-digit royalties on net sales of products containing the Company's TLR9 agonists that are marketed. Merck KGaA refers to IMO-2055 as EMD 1201081. In February 2009, the agreement was amended so that the Company could initiate and conduct on behalf of Merck KGaA additional clinical trials of EMD 1201081 until such time as Merck KGaA had filed an Investigational New Drug ("IND") application with the U.S. Food and Drug Administration ("FDA") and assumed sponsorship of these trials. Under the amendment, Merck KGaA agreed to reimburse the Company for costs associated with any additional trials that the Company initiated and conducted. Merck KGaA filed an IND and, as of March 2010, Merck KGaA assumed sponsorship of all ongoing clinical trials of EMD 1201081 for the treatment of cancer, and has assumed responsibility for all further clinical development of EMD 1201081 in the treatment of cancer, excluding vaccines.

The Company recognized the $40.0 million upfront payment as revenue over the twenty-eight month term that ended in June 2010, which was the Company's period of continuing involvement under the research collaboration. Through June 30, 2011, the Company has recognized a total of $12.1 million of milestone revenue related to the initiation of clinical trials of EMD 1201081.

(b) Collaboration and License Agreement with Merck Sharp & Dohme Corp.

In December 2006, the Company entered into an exclusive, worldwide license and research collaboration agreement with Merck to research, develop, and commercialize vaccine products containing the Company's TLR7, 8, and 9 agonists in the fields of cancer, infectious diseases, and Alzheimer's disease. Under the terms of the agreement, the Company granted Merck exclusive rights to a number of the Company's TLR7, 8, and 9 agonists for use in combination with Merck's therapeutic and prophylactic vaccines under development in the fields of cancer, infectious diseases, and Alzheimer's disease. The Company also agreed with Merck to engage in a two-year research collaboration to generate novel agonists targeting TLR7 and TLR8 incorporating both Merck and Idera chemistry for use in vaccines in the defined fields, which collaboration was extended by Merck for two additional one-year periods. Under the terms of the agreement: Merck paid the Company a $20.0 million upfront license fee; Merck purchased $10.0 million of the Company's common stock at $5.50 per share; and Merck agreed to fund the research and development collaboration. Merck also agreed to pay the Company milestone payments as follows: up to $165.0 million if vaccines containing the Company's TLR9 agonist compounds are successfully developed and marketed in each of the oncology, infectious disease, and Alzheimer's disease fields; up to $260.0 million if vaccines containing the Company's TLR9 agonist compounds are successfully developed and marketed for follow-on indications in the oncology field and if vaccines containing the Company's TLR7 or TLR8 agonists are successfully developed and marketed in each of the oncology, infectious disease, and Alzheimer's disease fields; and if Merck develops and commercializes additional vaccines using the Company's agonists, the Company would be entitled to receive additional milestone payments. In addition, Merck agreed to pay the Company mid- to upper single-digit royalties on net product sales of vaccines using the Company's TLR agonist technology that are developed and marketed.

The Company recognized the $20.0 million upfront payment as revenue over four years, including the initial two-year research term and the two-year extension period that ended in December 2010, which was the Company's period of continuing involvement under the research collaboration.

In December 2006, in connection with the execution of the license and collaboration agreement, the Company entered into a stock purchase agreement with Merck. Pursuant to such stock purchase agreement, the Company issued and sold to Merck 1,818,182 shares of the Company's common stock for a price of $5.50 per share resulting in aggregate gross proceeds of $10.0 million.

In 2008, the Company recognized $1.0 million of milestone revenue that it received from Merck relating to achieving a preclinical milestone with one of its TLR9 agonists used as an adjuvant in cancer vaccines.

(11) Stock-Based Compensation

The Company recognizes all share-based payments to employees and directors in the financial statements based on their fair values. The Company records compensation expense over an award's requisite service period, or vesting period, based on the award's fair value at the date of grant. The Company's policy is to charge the fair value of stock options as an expense on a straight-line basis over the vesting period, which is generally four years for employees and three years for directors. The Company included charges of $779,000 and $974,000 in its statements of operations for the three months ended June 30, 2011 and 2010, respectively, and $1,439,000 and $2,147,000 in its statements of operations for the six months ended June 30, 2011 and 2010, respectively, representing the stock-based compensation expense attributable to share-based payments made to employees and directors.

The fair value of each option award is estimated on the date of grant using the Black-Scholes option-pricing model and expensed over the requisite service period on a straight-line basis. The following assumptions apply to the options to purchase 160,750 and 131,000 shares of common stock granted to employees and directors during the six months ended June 30, 2011 and 2010, respectively:

	Six Months Ended June 30, 2011	Six Months Ended June 30, 2010
Average risk free interest rate	3.0%	2.5%
Expected dividend yield	—	—
Expected lives (years)	9.7	5.6
Expected volatility	62.0%	66.3%
Weighted average grant date fair value of options granted during the period (per share)	$ 1.55	$ 2.67
Weighted average exercise price of options granted during the period (per share)	$ 2.18	$ 4.48

The Company's adoption of policies with respect to the treatment of stock options in the event of director or employee retirement during 2010 resulted in the modification of stock options by accelerating the vesting of nonvested stock options held by, and by extending the post-retirement period during which stock options may be exercised by, those directors and employees whose retirement qualifies under the terms of the policy. The stock option modifications increased the fair value of those options by $111,000 when modified, of which $2,000 and $21,000 was expensed during the three months ended June 30, 2011 and 2010, respectively, and $4,000 and $79,000 was expensed during the six months ended June 30, 2011 and 2010, respectively.

As a result of the stock option modifications, the Company recognized $2,000 and $292,000 more of stock-based compensation expense during the three and six months ended June 30, 2010, respectively, than it would have recognized if the stock options had not been modified. Of those amounts, $21,000 and $79,000, respectively, was attributable to the increase in fair value of the modified options and $(19,000) and $213,000, respectively, was attributable to the accelerated recognition of the original fair value of options held by directors who were or would become eligible for retirement prior to the completion of the option vesting period, which amounts would otherwise have been expensed over the vesting period on a straight line basis. As a result of the stock option modifications, the Company did not recognize $22,000 and $50,000 of stock-based compensation expense during the three and six months ended June 30, 2011, respectively, that it otherwise would have recognized if the stock options had not been modified, which amounts consisted of $24,000 and $54,000 that resulted from the accelerated recognition of the original fair value of options held by directors who were or will become eligible for retirement prior to the completion of the option vesting period, offset by $2,000 and $4,000 increases in expense attributable to the increase in fair value.

During prior periods, the Company awarded stock options to purchase shares of common stock to persons who were neither employees nor directors. The fair value of the nonvested portion of the non-employee, non-director options is remeasured each quarter. This remeasured fair value is partially expensed each quarter based upon the percentage of the nonvested portion of the option's vesting period that has elapsed to date, less the amount expensed in prior periods. The remeasurement as of June 30, 2010 resulted in a reduction of expense for non-employee, non-director options of $25,000 and $11,000 for the three and six months ended June 30, 2010, respectively. The Company recorded an expense of $6,000 for non-employee, non-director options in the six months ended June 30, 2011. There was no such expense during the three months ended June 30, 2011.

(12) Net Loss per Common Share

Basic and diluted net loss per common share is computed using the weighted average number of shares of common stock outstanding during the period. For the three and six months ended June 30, 2011 and 2010, diluted net loss per share is the same as basic net loss per common share, as the effects of the Company's potential common stock equivalents are antidilutive. Total antidilutive securities were 9,180,339 and 7,006,680 for the six months

ended June 30, 2011 and 2010, respectively, and consist of stock options and warrants. Net loss applicable to common stockholders is the same as net loss for all periods presented.

(13) Stockholders' Equity

During the six months ended June 30, 2011 and 2010, the Company issued 20,364 and 19,436 shares, respectively, of common stock in connection with stock option exercises and employee stock purchases, which resulted in total proceeds to the Company of $43,000 and $71,000, respectively. During the six months ended June 30, 2011, pursuant to its director compensation program, the Company issued 9,225 shares of common stock to a director in lieu of cash fees of approximately $25,000.

(14) Related Party Transactions

The Company paid certain directors consulting fees of approximately $8,000 and $24,000 in the three months ended June 30, 2011 and 2010, respectively, and $18,000 and $32,000 in the six months ended June 30, 2011 and 2010, respectively.

ITEM 2. ***MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.***

GENERAL

We are engaged in the discovery and development of DNA- and RNA-based drug candidates targeted to Toll-Like Receptors, or TLRs, to treat infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants, and gene silencing oligonucleotide, or GSO, technology. Drug candidates are compounds that we are developing and that have not been approved for any commercial use. TLRs are specific receptors present in immune system cells that recognize the DNA or RNA of bacteria or viruses and initiate an immune response. Relying on our expertise in DNA and RNA chemistry, we have designed and created proprietary TLR agonists and antagonists to modulate immune responses. A TLR agonist is a compound that stimulates an immune response through the targeted TLR. A TLR antagonist is a compound that blocks activation of an immune response through the targeted TLR.

Our business strategy is to advance applications of our TLR-targeted drug candidates in multiple disease areas simultaneously, as well as to advance our GSO technology. Under this strategy, we are seeking to advance some of these applications through internal programs, and to advance other applications through collaborative alliances with pharmaceutical companies. Collaborators provide the necessary resources and drug development experience to advance our compounds in their programs. Upfront payments and milestone payments received from collaborations may also help to provide us with the financial resources for our internal research and development programs.

Our internal programs are focused on developing TLR-targeted drug candidates for the potential treatment of infectious diseases, autoimmune and inflammatory diseases, cancer, and respiratory diseases, and for use as vaccine adjuvants. We have completed two Phase 1 clinical trials of IMO-2125, a TLR9 agonist, in patients with chronic hepatitis C virus, or HCV, infection. We have chosen to delay initiation of our planned 12-week Phase 2 randomized clinical trial of IMO-2125 plus ribavirin in treatment-naïve HCV patients based on preliminary observations from a 26-week chronic nonclinical toxicology study of IMO-2125 in rodents. We plan to reassess our strategy with respect to the development of IMO-2125 after full evaluation of the data from the chronic nonclinical toxicology study of IMO-2125 in rodents, as well as from a chronic nonclinical toxicology study of IMO-2125 in nonhuman primates. We expect these data to be available in the second half of 2011.

We have completed two Phase 1 clinical trials of IMO-3100, an antagonist of TLR7 and TLR9, in healthy subjects. In light of some reversible immune responses that were observed in 13-week nonclinical toxicology studies of IMO-3100 and that were inconsistent with observations in other nonclinical studies of IMO-3100, in the fourth quarter of 2010 we commenced additional nonclinical studies of IMO-3100, which we continued during the first half of 2011. In June 2011, we submitted a Phase 2 protocol to the U.S. Food and Drug Administration, or FDA, to conduct a clinical trial of IMO-3100 in patients with psoriasis under a new Investigational New Drug Application, or IND, for IMO-3100. In July 2011, the FDA notified us that it had placed the proposed Phase 2 clinical trial on a clinical hold. We are reviewing the FDA comments on this protocol and assessing our next steps with respect to evaluating IMO-3100 in patients with psoriasis.

We are also advancing our gene silencing oligonucleotide, or GSO, technology for potential application as research reagents and as therapeutic agents.

In addition to our internal programs, we currently are collaborating with two pharmaceutical companies to advance other applications of our TLR-targeted compounds. We are collaborating with Merck KGaA for the use of TLR9 agonists in cancer treatment, excluding cancer vaccines. Merck KGaA has conducted clinical trials of IMO-2055, which Merck KGaA refers to as EMD 1201081, in combination with other cancer therapy agents in cancer indications including an ongoing Phase 2 clinical trial in squamous cell carcinoma of the head and neck (SCCHN). In July 2011, Merck KGaA informed us that, based on increased incidence of neutropenia and electrolyte imbalances reported in a separate Phase 1 trial of IMO-2055 in combination with cisplatin, 5-fluorouracil, and cetuximab (Erbitux®) in patients with first-line SCCHN as compared to published data from a trial of cisplatin, 5-fluorouracil, and Erbitux® without IMO-2055, Merck KGaA had re-evaluated its clinical development program and

decided that it would not conduct further clinical development of IMO-2055 at this stage. Merck KGaA also informed us that it plans to complete its ongoing Phase 2 trial of IMO-2055 in combination with Erbitux® in second-line patients with recurrent or metastatic SCCHN. There have been no serious safety concerns observed to date in the Phase 2 trial of Erbitux®. Merck KGaA also advised us that they intend to continue evaluating follow-on TLR9 agonists created by Idera under the collaboration.

We also are collaborating with Merck Sharpe & Dohme Corp., or Merck, for the use of TLR7, TLR8, and TLR9 agonists as vaccine adjuvants in the fields of cancer, infectious diseases, and Alzheimer's disease. Merck KGaA and Merck are not related.

As a result of the delayed initiation of our planned 12-week Phase 2 clinical trial of IMO-2125, the clinical hold relating to the planned IMO-3100 Phase 2 clinical trial protocol and the Merck KGaA announcement, we are reassessing, and potentially may adjust, our strategy with respect to the development of IMO-2125, IMO-3100 and our other TLR-targeted drug candidates. Based on such reassessment, we may determine to terminate one or more of our development programs and to devote our resources to a development program that is at an earlier stage of clinical development or is in preclinical development.

At June 30, 2011, we had an accumulated deficit of $364,769,000. We expect to incur substantial operating losses in future periods. We do not expect to generate significant product revenue or royalties until we successfully complete development and obtain marketing approval for drug candidates, either alone or in collaborations with third parties, which we expect will take a number of years. In order to commercialize our drug candidates, we need to complete clinical development and to comply with comprehensive regulatory requirements. In 2011, we expect that our research and development expenses will be lower than our research and development expenses in 2010 reflecting the completion of multiple Phase 1 clinical trials in 2010 and delays in the initiation of clinical trials planned for 2011.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

This management's discussion and analysis of financial condition and results of operations is based on our financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an ongoing basis, management evaluates its estimates and judgments, including those related to revenue recognition and stock-based compensation. Management bases its estimates and judgments on historical experience and on various other factors that are believed 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. Actual results may differ from these estimates under different assumptions or conditions.

We regard an accounting estimate or assumption underlying our financial statements as a "critical accounting estimate" where:

- the nature of the estimate or assumption is material due to the level of subjectivity and judgment necessary to account for highly uncertain matters or the susceptibility of such matters to change; and
- the impact of the estimates and assumptions on financial condition or operating performance is material.

Our significant accounting policies are described in Note 2 of the notes to our financial statements in our Annual Report on Form 10-K for the year ended December 31, 2010. Not all of these significant policies, however, fit the definition of critical accounting policies and estimates. We believe that our accounting policies relating to revenue recognition and stock-based compensation, as described under the caption "Item 7. Management's Discussion and

Analysis of Financial Condition and Results of Operations — Critical Accounting Policies and Estimates" in our Annual Report on Form 10-K for the year ended December 31, 2010, fit the description of critical accounting estimates and judgments. There were no changes to these policies in the six months ended June 30, 2011 other than the adoption of ASU No. 2009-13 and ASU No. 2010-17 that impacted our revenue recognition policy as discussed in Note 2 to the financial statements.

RESULTS OF OPERATIONS

Three and Six Months Ended June 30, 2011 and 2010

Alliance Revenue

Our alliance revenues are comprised primarily of revenue earned under various collaboration and licensing agreements which include license fees, research and development revenues including reimbursement of internal and third-party expenses, milestones and patent-related reimbursements.

The following table is a summary of our alliance revenue earned under our collaboration and licensing agreements:

	Three Months Ended June 30, (in thousands)		Percentage Increase (Decrease)	Six Months Ended June 30, (in thousands)		Percentage Increase (Decrease)
	2011	2010		2011	2010	
License fees	$ —	$ 4,314	(100)%	$ —	$ 9,867	(100)%
Research and development	—	45	(100)%	—	63	(100)%
Other	33	27	22%	41	33	24%
Total alliance revenue	$ 33	$ 4,386	(99)%	$ 41	$ 9,963	(100)%

License Fees. License fees primarily include license fee revenue recognized under our collaborations with Merck KGaA and Merck. License fee revenue during the three and six months ended June 30, 2010 was comprised of amortization of the upfront license fee payments under these collaborations. We recognized license fee revenue ratably over the expected period of our continuing involvement in the collaborations, which has generally represented the estimated research period of the agreement.

We received a $40,000,000 upfront payment from Merck KGaA in Euros in February 2008 of which we received $39,733,000 due to foreign currency exchange rates in effect at the time. We recognized the $40,000,000 upfront payment as revenue over the twenty eight-month research term that ended in June 2010. We received a $20,000,000 upfront payment from Merck in December 2006. We recognized the $20,000,000 upfront payment as revenue over the two-year initial research term and the two-year extension period that ended in December 2010. Since we completed the research portions of these collaborations during 2010, all of the upfront license fee payments were fully amortized by December 2010. Consequently, we did not recognize any license fee revenue under the Merck KGaA and Merck collaborations during the three and six months ended June 30, 2011.

Research and Development Revenue. Research and development revenue was $45,000 and $63,000 in the three and six months ended June 30, 2010 and consisted of research reimbursements by Merck during the second quarter of 2010 and reimbursement by Merck KGaA of costs associated with clinical trials of IMO-2055 during the first quarter of 2010. Merck KGaA assumed sponsorship of these trials by March 2010, and consequently we did not recognize any research and development revenue in the three and six months ended June 30, 2011. We do not expect to have research and development revenue in future periods under our agreements with Merck KGaA and Merck.

Other Revenue. Other revenue consisted of reimbursement by licensees of costs associated with patent maintenance.

Research and Development Expenses

Research and development expenses decreased by $2,819,000, or 40%, from $6,961,000 for the three months ended June 30, 2010, to $4,142,000 for the three months ended June 30, 2011 and decreased by $2,852,000 or 25% from $11,547,000 for the six months ended June 30, 2010 to $8,695,000 for the six months ended June 30, 2011. In the following table, research and development expense is set forth in the following four categories which are discussed beneath the table:

	Three Months Ended June 30, (in thousands)		Percentage Increase (Decrease)	Six Months Ended June 30, (in thousands)		Percentage Increase (Decrease)
	2011	2010		2011	2010	
IMO-2125 External Development Expense	$ 536	$ 2,360	(77)%	$ 1,767	$ 3,241	(45)%
IMO-3100 External Development Expense	826	1,690	(51)%	1,080	2,581	(58)%
Other Drug Development Expense	1,069	955	12%	2,093	1,936	8%
Basic Discovery Expense	1,711	1,956	(13)%	3,755	3,789	(1)%
Total Research and Development Expense	$ 4,142	$ 6,961	(40)%	$ 8,695	$ 11,547	(25)%

IMO-2125 External Development Expenses. These expenses include external expenses that we have incurred in connection with IMO-2125. These external expenses include payments to independent contractors and vendors for drug development activities conducted after the initiation of IMO-2125 clinical development, but exclude internal costs such as payroll and overhead expenses. We commenced clinical development of IMO-2125 in May 2007 and since then we have incurred approximately $16,000,000 in external development expenses through June 30, 2011, including costs associated with our clinical trials, manufacturing and process development activities related to the production of IMO-2125, and additional nonclinical toxicology studies.

The decreases in IMO-2125 expenses in the three and six months ended June 30, 2011 as compared to the corresponding 2010 periods were attributable to decreases in costs associated with the two Phase 1 clinical trials for which we completed all patient activities prior to the end of 2010 and manufacturing costs incurred during the 2010 periods but not in the corresponding 2011 periods. These decreases were partially offset by costs associated with preparation for the Phase 2 clinical trial of IMO-2125 that we planned to initiate in the second quarter of 2011 and conduct of additional nonclinical toxicology studies of IMO-2125.

In May 2007, we submitted an IND for IMO-2125 to the FDA. In September 2007, we initiated a Phase 1 clinical trial of IMO-2125 in patients with genotype 1 chronic HCV infection who had no response to a prior regimen of the current standard of care therapy specified by the protocol as patients who failed to achieve a 2 $\log_{10}$ reduction in HCV viral load after at least 12 weeks of treatment with the current standard of care therapy. HCV viral load refers to the concentration of virus in the blood. A $\log_{10}$ reduction means a decrease in virus concentration to 10% of the original concentration. A 2 $\log_{10}$ reduction means a decrease to 1% of the original concentration. We refer to these patients as null-responder HCV patients. The clinical trial was conducted at eleven sites in the United States with a total of 58 patients. In the trial, we enrolled cohorts of ten patients at escalating IMO-2125 dose levels of 0.04 mg/kg/week, 0.08 mg/kg/week, 0.16 mg/kg/week, 0.32 mg/kg/week, and 0.48 mg/kg/week. Of the ten patients in a cohort, eight were randomized to receive IMO-2125 treatment and two were randomized to receive placebo treatment. Patients received a single dose of IMO-2125 or placebo once per week by subcutaneous injection for four weeks. Based on interim results from these cohorts, we enrolled seven additional patients who received 0.16 mg/kg of IMO-2125 twice weekly for four weeks. The primary objective of the trial was to assess the safety of IMO-2125 at each dose level. We also evaluated the effects of IMO-2125 on HCV RNA levels and on immune system

activation in this trial. We presented results from the Phase 1 clinical trial of IMO-2125 in null-responder HCV patients at scientific meetings in April 2010 and in October 2010.

We also conducted a Phase 1 clinical trial of IMO-2125 in combination with ribavirin, an antiviral medication approved for use in combination with interferon-alpha in the treatment of HCV infection, in treatment-naïve patients with genotype 1 chronic HCV infection. We initiated the trial in October 2009. In this clinical trial, a total of 63 patients received IMO-2125 or a control article by subcutaneous injection once per week for four weeks at escalating dose levels in combination with daily oral administration of standard doses of ribavirin. Fifteen patients were enrolled in the first cohort, with 12 randomized to receive IMO-2125 at 0.08 mg/kg/week and ribavirin and three randomized to receive placebo and ribavirin as the control. Eighteen patients were enrolled in the second cohort, with 12 randomized to receive IMO-2125 at 0.16 mg/kg/week and ribavirin and six randomized to receive pegylated recombinant alfa-2a interferon and ribavirin as the control. The third cohort enrolled 30 patients randomized 12:12:6 to receive IMO-2125 at 0.32 mg/kg/week, IMO-2125 at 0.16 mg/kg twice per week, or pegylated recombinant alfa-2a interferon, respectively, all with ribavirin. The primary objective of the trial was to assess the safety and tolerability of IMO-2125 in combination with ribavirin. In addition, we monitored the effect of treatment on HCV RNA levels. The clinical trial was conducted at sites in France, Russia, and Hungary. In December 2010, we announced preliminary data from the Phase 1 clinical trial of IMO-2125 in treatment-naïve HCV patients, and in April 2011 we presented results at the 46th Annual Meeting of the European Association of the Study of the Liver.

In April 2011, we chose to delay initiation of our planned 12-week Phase 2 randomized clinical trial of IMO-2125 plus ribavirin in treatment-naïve, genotype 1 HCV patients based on preliminary observations in a 26-week chronic nonclinical toxicology study of IMO-2125 in rodents. Preliminary histology analysis from the rodent study showed instances of atypical lymphocytic proliferation. We are completing the 26-week chronic nonclinical toxicology study of IMO-2125 in rodents and a 39-week chronic nonclinical toxicology study of IMO-2125 in non-human primates. We expect data from the non-human primate study and additional histology data from the rodent study during the second half of 2011. We plan to reassess our strategy with respect to the development of IMO-2125 after we have fully evaluated the data from our chronic nonclinical toxicology studies of IMO-2125.

IMO-3100 External Development Expenses. These expenses include external expenses that we have incurred in connection with IMO-3100 since November 2009, when we commenced clinical development of IMO-3100. These external expenses include payments to independent contractors and vendors for drug development activities conducted after the initiation of IMO-3100 clinical development but exclude internal costs such as payroll and overhead expenses. Since November 2009, we have incurred approximately $6,862,000 in external development expenses through June 30, 2011, including costs associated with our clinical trials, manufacturing and process development activities related to the production of IMO-3100, and additional nonclinical toxicology studies.

The decreases in IMO-3100 expenses in the three and six months ended June 30, 2011 as compared to the corresponding 2010 periods were primarily attributable to manufacturing and process development activities that primarily occurred in the second quarter of 2010, higher costs associated with nonclinical toxicology studies conducted during the 2010 periods, and completion of all patient activities of the two Phase 1 clinical trials during 2010. These decreases were partially offset by costs incurred in the 2011 periods associated with the cost of data analysis of the two Phase 1 clinical trials and the preparation for the planned Phase 2 clinical trial in psoriasis.

In November 2009, we submitted to the FDA an IND application for the clinical evaluation of IMO-3100 in autoimmune diseases. In January 2010, we initiated a Phase 1 clinical trial of IMO-3100 in healthy subjects. In this single-dose, dose escalation Phase 1 trial, IMO-3100 was administered by subcutaneous injection at dose levels of 0.04, 0.08, 0.16, 0.32, and 0.64 mg/kg to a total of 36 subjects. At each dose level, six subjects received IMO-3100. An additional six subjects received placebo treatment. The primary objective of the trial was to evaluate the safety and tolerability of IMO-3100. Secondary objectives were to characterize the pharmacokinetic profile of IMO-3100 and to assess the pharmacodynamic mechanism of action of IMO-3100. The pharmacodynamic mechanism of action

is how IMO-3100 engages the immune system in the targeted manner, which we assessed through measurement of the inhibition of TLR7 and TLR9-mediated cytokine induction in peripheral blood mononuclear cells, or PBMCs. The trial was conducted at a single U.S. site. In October 2010 we announced results from the single-dose Phase 1 clinical trial of IMO-3100. IMO-3100 was well tolerated at all dose levels in the trial.

We have also conducted a four-week multiple-dose Phase 1 clinical trial of IMO-3100 in healthy subjects that we initiated in July 2010 and completed in the third quarter of 2010. We presented results of the multi-dose Phase 1 clinical trial at a scientific meeting in April 2011.

During the first half of 2011, we continued to conduct nonclinical studies of IMO-3100, which we commenced in the fourth quarter of 2010 in light of some reversible immune responses that were observed in the 13-week nonclinical toxicology studies and that were inconsistent with observations in our other nonclinical studies of IMO-3100. In June 2011, we submitted a Phase 2 protocol to the FDA to conduct a clinical trial of IMO-3100 in patients with psoriasis under a new IND for IMO-3100. In July 2011, the FDA notified us that it had placed the proposed Phase 2 clinical trial on a clinical hold. We are reviewing the FDA's comments on this protocol and assessing our next steps with respect to the development of IMO-3100 in patients with psoriasis and other indications in conjunction with our ongoing strategic reassessment.

Other Drug Development Expenses. These expenses include external expenses associated with preclinical development of identified compounds in anticipation of advancing these compounds into clinical development. In addition, these expenses include internal costs, such as payroll and overhead expenses, associated with preclinical development and products in clinical development. The external expenses associated with preclinical compounds include payments to contract vendors for manufacturing and the related stability studies, preclinical studies, including animal toxicology and pharmacology studies, and professional fees. Expenses associated with products in clinical development include costs associated with our Hepatitis C Clinical Advisory Board and our Autoimmune Disease Scientific Advisory Board.

The increases in other drug development expenses in the three and six months ended June 30, 2011, as compared to the corresponding 2010 periods, were primarily due to the cost of obtaining nonclinical and clinical trial data from studies conducted by Novartis of IMO-2134, a TLR9 agonist, which we accrued in the second quarter of 2011, higher consulting costs and the cost of nonclinical studies of preclinical compounds, partially offset by lower employee expenses in the 2011 periods.

Basic Discovery Expenses. These expenses include our internal and external expenses relating to the discovery of our TLR-targeted programs, including agonists and antagonists of TLRs 3, 7, 8 and 9, TLR antisense, and GSOs. These expenses reflect payments for laboratory supplies, external research, and professional fees, as well as payroll and overhead expenses. The decrease in basic discovery expenses in the three months ended June 30, 2011, as compared to the corresponding 2010 period, was primarily due to decreases in employee expenses and the cost of laboratory supplies. The decrease in basic discovery expenses in the six months ended June 30, 2011, as compared to the corresponding 2010 period, was primarily attributable to decreases in employee expenses partially offset by an increase in the cost of laboratory supplies.

We do not know if we will be successful in developing any drug candidate from our research and development programs. At this time, without knowing the results of our ongoing clinical trials and without an established plan for future clinical tests of drug candidates, we cannot reasonably estimate or know the nature, timing, and costs of the efforts that will be necessary to complete the remainder of the development of, or the period, if any, in which material net cash inflows may commence from, any drug candidate from our research and development programs. Moreover, the clinical development of any drug candidate from our research and development programs is subject to numerous risks and uncertainties associated with the duration and cost of clinical trials, which vary significantly over the life of a project as a result of unanticipated events arising during clinical development.

General and Administrative Expenses

General and administrative expenses decreased by $618,000, or 22%, from $2,784,000 in the three months ended June 30, 2010, to $2,166,000 in the three months ended June 30, 2011 and decreased by $1,064,000, or 19%, from $5,516,000 in the six months ended June 30, 2010, to $4,452,000 in the six months ended June 30, 2011. General and administrative expenses consist primarily of salary expense, stock compensation expense, consulting fees and professional legal fees associated with our patent applications and maintenance, our corporate regulatory filing requirements, our corporate legal matters, and our business development initiatives.

The decreases in general and administrative expenses in the three and six months ended June 30, 2011, as compared to the corresponding 2010 periods, were primarily due to a decrease in stock based compensation, mainly due to higher recognized expense in 2010 associated with the modification of non-employee director stock options, lower employee cash compensation expenses and lower consulting fees associated with business and strategic initiatives in the 2011 periods. The decreases in general and administrative expenses were partially offset by increases in legal costs associated with patent matters in the 2011 periods.

Investment Income, net

Investment income, net, decreased by approximately $24,000, or 83%, from $29,000 in the three months ended June 30, 2010 to $5,000 in the three months ended June 30, 2011 and decreased by approximately $29,000, or 53%, from $55,000 in the six months ended June 30, 2010 to $26,000 in the six months ended June 30, 2011. These decreases were primarily due to lower average investment balances and lower interest rates in both the three and six months ended June 30, 2011.

Foreign Currency Exchange Loss

Our foreign currency exchange loss was $12,000 in the three months ended June 30, 2011 compared to a gain of $34,000 in the three months ended June 30, 2010. This loss and gain reflect the impact that fluctuations in U.S. Dollar/Euro currency exchange rates have on payments under our clinical trial agreements that are denominated in Euros.

Our foreign currency exchange loss was $47,000 in the six months ended June 30, 2011 compared to $194,000 in the six months ended June 30, 2010. The decrease in the foreign currency exchange loss during the six months ended June 30, 2011 is primarily due to the impact that fluctuations in U.S. Dollar/Euro currency exchange rates had on the receipt of a milestone payment in the first quarter of 2010. In 2009, we earned a milestone under our Merck KGaA collaboration, for which we had a $4,300,000 receivable at December 31, 2009. Merck KGaA paid us for this milestone in February 2010 and we received $4,074,000 based on foreign exchange rates in effect at the time of payment as a result of the strengthening value of the U.S. dollar. Consequently, we incurred a foreign currency exchange loss of $226,000 on the milestone payment during the first quarter of 2010. The foreign currency exchange losses during the six months ended June 30, 2011 and 2010 also reflect the impact that fluctuations in U.S. Dollar/Euro currency exchange rates have on payments under our clinical trial agreements that are denominated in Euros.

Net Loss

As a result of the factors discussed above, our net loss was $6,282,000 for the three months ended June 30, 2011, compared to $5,296,000 for the three months ended June 30, 2010 and our net loss was $13,127,000 for the six months ended June 30, 2011, compared to $7,239,000 for the six months ended June 30, 2010. Since January 1, 2001, we have primarily been involved in the development of our TLR pipeline. From January 1, 2001 through June 30, 2011, we incurred losses of $104,576,000. We also incurred net losses of $260,193,000 prior to December 31, 2000 during which time we were primarily involved in the development of non-TLR targeted antisense technology.

Since our inception, we had an accumulated deficit of $364,769,000 through June 30, 2011. We expect to continue to incur substantial operating losses in the future.

LIQUIDITY AND CAPITAL RESOURCES

Sources of Liquidity

We require cash to fund our operating expenses and to make capital expenditures. Historically, we have funded our cash requirements primarily through the following:

- equity and debt financing;
- license fees, research funding and milestone payments under collaborative and license agreements;
- interest income; and
- lease financings.

In August 2010, we raised $15,103,000 in gross proceeds from a registered direct offering of our common stock to institutional investors. In the offering, we sold 4,071,005 shares of common stock and warrants to purchase 1,628,402 shares of common stock. The common stock and the warrants were sold in units at a price of $3.71 per unit, with each unit consisting of one share of common stock and warrants to purchase 0.40 shares of common stock. The warrants to purchase common stock have an exercise price of $3.71 per share, are exercisable immediately, and will expire if not exercised on or prior to August 5, 2015. The net proceeds to us from the offering, excluding the proceeds of any future exercise of the warrants, were approximately $14,089,000.

In addition to the warrants mentioned above, as of June 30, 2011, warrants to purchase 1,704,545 shares of our common stock at an exercise price of $5.20 per share and warrants to purchase 761,718 shares of our common stock at an exercise price of $5.92 per share were outstanding. These warrants were issued in March 2006 and expire on September 24, 2011.

Under the terms of our collaboration with Merck KGaA, in February 2008 Merck KGaA paid us a $40,000,000 upfront license fee in Euros of which we received $39,733,000 due to foreign currency exchange rates. Since entering this agreement, we have received approximately $12,110,000 in milestone payments and have been reimbursed $4,542,000 for expenses related to the development of EMD 1201081.

In December 2006, we entered into an exclusive license and research collaboration agreement with Merck to research, develop and commercialize vaccine products containing our TLR7, 8 and 9 agonists in the fields of cancer, infectious diseases and Alzheimer's disease. Under the terms of the agreement, Merck paid us a $20,000,000 license fee in December 2006. In addition, in connection with the execution of the license and collaboration agreement, we issued and sold to Merck 1,818,182 shares of our common stock for a price of $5.50 per share resulting in an aggregate purchase price of $10,000,000. Since entering this agreement, we have received $1,000,000 in milestone payments and $3,408,000 in research and development payments.

Cash Flows

As of June 30, 2011, we had approximately $23,508,000 in cash and cash equivalents and investments, a net decrease of approximately $11,135,000 from December 31, 2010. Net cash used in operating activities totaled $11,192,000 during the six months ended June 30, 2011, reflecting our $13,127,000 net loss for the period, as adjusted for non-cash expenses, including stock-based compensation, depreciation and amortization. It also reflects changes in our prepaid expenses and accounts payable, accrued expenses and other liabilities.

The net cash provided by investing activities during the six months ended June 30, 2011 of $15,641,000 reflects the maturity of $16,585,000 in available-for-sale securities and a $102,000 decrease in restricted cash offset by the purchase of approximately $1,025,000 of securities and $21,000 of laboratory equipment and leasehold improvements during the period.

The $35,000 net cash provided by financing activities during the six months ended June 30, 2011 reflects the proceeds of $43,000 received from employee stock purchases, offset, in part, by payments on our capital leases.

As of June 30, 2010, we had approximately $32,783,000 in cash and cash equivalents and investments, a net decrease of approximately $7,424,000 from December 31, 2009. Net cash used in operating activities totaled $7,430,000 during the six months ended June 30 2010, reflecting our $7,239,000 net loss for the period, as adjusted for non-cash revenue and expenses, including the reduction in deferred revenue associated with the recognition of deferred revenue under our collaboration agreements, stock-based compensation, depreciation and amortization. It also reflects changes in our accounts receivable, prepaid expenses and accounts payable, accrued expenses and other liabilities.

The net cash used in investing activities during the six months ended June 30, 2010 of $8,285,000 reflects our purchase of $8,309,000 in available-for-sale securities in the six months ended June 30, 2010 and our purchase of $79,000 of laboratory, office and computer equipment offset by a $103,000 decrease in restricted cash in the six-month period.

The net cash provided by financing activities during the six months ended June 30, 2010 of $61,000 reflects proceeds of $71,000 received from the exercise of common stock options and employee stock purchases during the six-month period offset, in part, by payments on our capital leases.

Funding Requirements

We have incurred operating losses in all fiscal years except 2002, 2008, and 2009, and we had an accumulated deficit of $364,769,000 at June 30, 2011. We expect to incur substantial operating losses in future periods. These losses, among other things, have had and will continue to have an adverse effect on our stockholders' equity, total assets and working capital.

We have received no revenues from the sale of drugs. To date, almost all of our revenues have been from collaboration and license agreements. We have devoted substantially all of our efforts to research and development, including clinical trials, and we have not completed development of any drugs. Because of the numerous risks and uncertainties associated with developing drugs, we are unable to predict the extent of any future losses, whether or when any of our products will become commercially available or when we will become profitable, if at all.

We do not expect to generate significant additional funds internally until we successfully complete development and obtain marketing approval for products, either alone or in collaboration with third parties, which we expect will take a number of years. In addition, we have no committed external sources of funds.

We had cash, cash equivalents, and investments of $23,508,000 at June 30, 2011. We believe that our existing cash, cash equivalents, and investments will be sufficient to fund our operations for at least the next twelve months based on our current operating plan. We will need to raise additional funds to operate our business beyond such time. In light of recent developments affecting our programs, we are currently reassessing and potentially may adjust, our strategy with respect to the development of IMO-2125, IMO-3100 and other TLR-targeted drug candidates. Based on such reassessment, we may determine to terminate one or more of our development programs and to devote our resources to a development program that is at an earlier stage of clinical development or is in preclinical development. If we proceed with the clinical development with any of our compounds, we expect that the period of time that our current resources will be able to fund our operations could be significantly reduced and we would need to seek additional funding through collaborations, the sale or license of assets or financings of equity or debt securities. We expect that our strategic review will determine the expenditures that will be required with respect to such programs. As a result, the timing and amount of any funding that will be required will depend in

large part on the outcome of the strategic review. We believe that the key factors that will affect our ability to obtain additional funding are:

- the results of our clinical and preclinical development programs;
- developments relating to our existing strategic collaborations with Merck KGaA and Merck;
- the cost, timing, and outcome of regulatory reviews;
- competitive and potentially competitive products and technologies and investors' receptivity to our drug candidates and the technology underlying them in light of competitive products and technologies;
- the receptivity of the capital markets to financings by biotechnology companies generally and companies with drug candidates and technologies such as ours specifically; and
- our ability to enter into new strategic collaborations with biotechnology and pharmaceutical companies and the success of such collaborations.

In addition, increases in expenses or delays in clinical development may adversely impact our cash position and require additional funds or further cost reductions. Additional financing may not be available to us when we need it or may not be available to us on favorable terms. We could be required to seek funds through collaborative alliances or others that may require us to relinquish rights to some of our technologies, drug candidates or drugs that we would otherwise pursue on our own. In addition, if we raise additional funds by issuing equity securities, our then existing stockholders will experience dilution. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, and are likely to include rights that are senior to the holders of our common stock. Any additional debt financing or equity that we raise may contain terms, such as liquidation and other preferences, or liens or other restrictions on our assets, which are not favorable to us or our stockholders. The terms of any financing may adversely affect the holdings or the rights of existing stockholders. If we are unable to obtain adequate funding on a timely basis or at all, we may be required to significantly curtail one or more of our discovery or development programs and possibly relinquish rights to portions of our technology or products.

Contractual Obligations

During the six months ended June 30, 2011, there were no material changes outside the ordinary course of our business to our contractual obligations as disclosed in our Annual Report of Form 10-K for the year ended December 31, 2010.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Foreign currency exchange gains and losses may result from amounts received under our Merck KGaA collaboration agreement and payments under our clinical trial agreements that are denominated in Euros. As of June 30, 2011, we had net accrued obligations of €0.3 million, or $0.4 million. All other assets and liabilities are in U.S. dollars, which is our functional currency.

We maintain investments in accordance with our investment policy. The primary objectives of our investment activities are to preserve principal, maintain proper liquidity to meet operating needs and maximize yields. Although our investments are subject to credit risk, our investment policy specifies credit quality standards for our investments and limits the amount of credit exposure from any single issue, issuer or type of investment. We regularly review our investment holdings in light of the then current economic environment. We do not own auction rate securities or derivative financial investment instruments in our investment portfolio.

Based on a hypothetical ten percent adverse movement in interest rates, the potential losses in future earnings, fair value of risk sensitive financial instruments, and cash flows are immaterial, although the actual effects may differ materially from the hypothetical analysis.

ITEM 4. CONTROLS AND PROCEDURES.

(a) *Evaluation of Disclosure Controls and Procedures.* Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of the period covered by this report. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized, and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of June 30, 2011, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

(b) *Changes in Internal Controls*. No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act) occurred during the fiscal quarter ended June 30, 2011 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II — OTHER INFORMATION

Item 1A. RISK FACTORS.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks and uncertainties described below in addition to the other information included or incorporated by reference in this Quarterly Report on Form 10-Q before purchasing our common stock. If any of the following risks actually occurs, our business, financial condition or results of operations would likely suffer, possibly materially. In that case, the trading price of our common stock could fall, and you may lose all or part of the money you paid to buy our common stock.

Risks Relating to Our Financial Results and Need for Financing

We have incurred substantial losses and expect to continue to incur losses. We will not be successful unless we reverse this trend.

We have incurred losses in every year since our inception, except for 2002, 2008, and 2009 when our recognition of revenues under license and collaboration agreements resulted in our reporting net income for those years. As of June 30, 2011, we had an accumulated deficit of $364.8 million. Since January 1, 2001, we have primarily been involved in the development of our TLR pipeline. From January 1, 2001 through June 30, 2011, we incurred losses of $104.6 million. We incurred losses of $260.2 million prior to December 31, 2000 during which time we were primarily involved in the development of non-TLR targeted antisense technology. These losses, among other things, have had and will continue to have an adverse effect on our stockholders' equity, total assets, and working capital.

We have never had any products of our own available for commercial sale and have received no revenues from the sale of drugs. To date, almost all of our revenues have been from collaborative and license agreements. We have devoted substantially all of our efforts to research and development, including clinical trials, and we have not completed development of any drug candidates. Because of the numerous risks and uncertainties associated with developing drugs, we are unable to predict the extent of any future losses, whether or when any of our drug candidates will become commercially available, or when we will become profitable, if at all. We expect to incur substantial operating losses in future periods.

We will need additional financing, which may be difficult to obtain. Our failure to obtain necessary financing or doing so on unattractive terms could adversely affect our research and development programs and other operations.

We will require substantial funds to conduct research and development, including preclinical testing and clinical trials of our drug candidates. We will also require substantial funds to conduct regulatory activities and to establish commercial manufacturing, marketing, and sales capabilities. We had cash, cash equivalents, and investments of $23.5 million at June 30, 2011. We believe that our existing cash, cash equivalents, and investments will be sufficient to fund our operations for at least the next twelve months based on our current operating plan. We will need to raise additional funds in order to operate our business beyond such time.

In light of recent developments affecting our programs, we are currently reassessing and potentially may adjust, our strategy with respect to the development of IMO-2125, IMO-3100 and other TLR-targeted drug candidates. Based on such reassessment, we may determine to terminate one or more of our development programs and to devote our resources to a development program that is at an earlier stage of clinical development or is in preclinical development. If we proceed with the clinical development with any of our compounds, we expect that the period of

time that our current resources will be able to fund our operations could be significantly reduced and we would need to seek additional funding through collaborations, the sale or license of assets or financings of equity or debt securities. We expect that our strategic review will determine the expenditures that will be required with respect to such programs. As a result, the timing and amount of any funding that will be required will depend in large part on the outcome of the strategic review. We believe that the key factors that will affect our ability to obtain additional funding are:

- the results of our clinical and preclinical development programs;
- developments related to our existing strategic collaborations with Merck KGaA and Merck;
- the cost, timing, and outcome of regulatory reviews;
- competitive and potentially competitive products and technologies and investors' receptivity to our drug candidates and the technology underlying them in light of competitive products and technologies;
- the receptivity of the capital markets to financings by biotechnology companies generally and companies with drug candidates and technologies such as ours specifically; and
- our ability to enter into additional strategic collaborations with biotechnology and pharmaceutical companies and the success of such collaborations.

Additional financing may not be available to us when we need it or may not be available to us on favorable terms. We could be required to seek funds through collaborative alliances or through other means that may require us to relinquish rights to some of our technologies, drug candidates or drugs that we would otherwise pursue on our own. In addition, if we raise additional funds by issuing equity securities, our then existing stockholders will experience dilution. The terms of any financing may adversely affect the holdings or the rights of existing stockholders. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, and are likely to include rights that are senior to the holders of our common stock. Any additional debt financing or equity that we raise may contain terms, such as liquidation and other preferences, or liens or other restrictions on our assets, which are not favorable to us or our stockholders. If we are unable to obtain adequate funding on a timely basis or at all, we may be required to terminate, modify or delay preclinical or clinical trials of one or more of our drug candidates, fail to establish or delay the establishment of manufacturing, sale or marketing capabilities, curtail research and development programs for new drug candidates and/or possibly relinquish rights to portions of our technology, drug candidates and/or products. For example, we significantly curtailed expenditures on our research and development programs during 1999 and 2000 because we did not have sufficient funds available to advance these programs at planned levels.

Risks Relating to Our Business, Strategy and Industry

We have been depending heavily on the development of IMO-2125, IMO-3100, and on our collaborative alliances. If we or our collaborators decide to terminate the development of any of our drug candidates, are unable to successfully develop and commercialize our drug candidates, or experience significant delays in doing so, our business will be materially harmed.

We have invested a significant portion of our time and financial resources in the development of our clinical stage lead drug candidates for infectious diseases, IMO-2125, and for autoimmune and inflammatory diseases, IMO-3100. We anticipate that our ability to generate product revenues will depend heavily on the successful development and commercialization of IMO-2125, IMO-3100, and the other drug candidates being developed by our collaborators, including IMO-2055, which we have licensed to Merck KGaA for use in the treatment, cure and/or delay of the onset or progression of cancer in humans. Our efforts, and the efforts of our collaborators, to develop and

commercialize these compounds are at an early stage and are subject to many challenges. Recently, we have experienced setbacks with respect to our programs for IMO-2125, IMO-3100, and our collaboration with respect to IMO-2055, including:

- In April 2011, we chose to delay initiation of our planned 12-week Phase 2 randomized clinical trial of IMO-2125 plus ribavirin in treatment-naïve, genotype 1 HCV patients based on preliminary observations in an ongoing 26-week chronic nonclinical toxicology study of IMO-2125 in rodents. Preliminary histology analysis from the rodent study showed instances of atypical lymphocytic proliferation.
- During the first half of 2011, we continued to conduct nonclinical studies of IMO-3100, which we commenced in the fourth quarter of 2010, in light of some reversible immune responses that were observed in the 13-week nonclinical toxicology studies and that were inconsistent with observations in our other nonclinical studies of IMO-3100.
- In June 2011, we submitted a Phase 2 protocol to the FDA to conduct a clinical trial of IMO-3100 in patients with psoriasis. In July 2011, the FDA notified us that it has placed the proposed Phase 2 clinical trial on a clinical hold.
- In July 2011, Merck KGaA informed us that, based on increased incidence of neutropenia and electrolyte imbalances reported in its Phase 1 trial of IMO-2055 in combination with cisplatin/5-FU and cetuximab (Erbitux(R)) in patients with first-line SCCHN and subsequent re-evaluation of its clinical development program, Merck KGaA determined that it will not conduct further clinical development of IMO-2055 at this stage.

As a result of these setbacks, we are reassessing, and potentially may adjust, our strategy with respect to the development of IMO-2125, IMO-3100 and our other TLR-based drug candidates. Based on such reassessment, we may determine to terminate one or more of our development programs and to devote our resources to a development program that is at an earlier stage of clinical development or is in preclinical development. The data from the chronic nonclinical toxicology studies of IMO-2125 we are conducting, which we expect during the second half of 2011, could negatively impact our ability or willingness to proceed with the development on IMO-2125. We are assessing the next steps with respect to IMO-3100 and may have additional discussions with the FDA, which could negatively impact our ability or willingness to proceed with the further development and commercialization of IMO-3100. Additionally, our collaboration with Merck KGaA may be adversely affected by the increased incidence of neutropenia and electrolyte imbalances, and we cannot be certain that Merck KGaA's continued evaluation of follow-on TLR9 agonists will result in the development and commercialization of any TLR9 agonists under the collaboration.

Even if we decide to proceed with the development of these drug candidates and are able to overcome these recent challenges, our ability to successfully develop and commercialize these drug candidates, or other potential candidates, will depend on several factors, including the following:

- the drug candidates demonstrating an acceptable safety profile in nonclinical toxicology studies and during clinical trials;
- timely enrollment in clinical trials of IMO-2125, IMO-3100, and other drug candidates, which may be slower than anticipated, potentially resulting in significant delays;
- satisfying conditions imposed on us and/or our collaborators by the FDA or equivalent foreign regulatory authorities regarding the scope or design of clinical trials;

- the ability to demonstrate to the satisfaction of the FDA, or equivalent foreign regulatory authorities, the safety and efficacy of the drug candidates through current and future clinical trials;
- the ability to combine our drug candidates and the drug candidates being developed by our collaborators safely and successfully with other therapeutic agents;
- timely receipt of necessary marketing approvals from the FDA and equivalent foreign regulatory authorities;
- achieving and maintaining compliance with all regulatory requirements applicable to the products;
- establishment of commercial manufacturing arrangements with third-party manufacturers;
- the successful commercial launch of the drug candidates, assuming FDA approval is obtained, whether alone or in combination with other products;
- acceptance of the products as safe and effective by patients, the medical community, and third-party payors;
- competition from other companies and their therapies;
- changes in treatment regimes;
- successful protection of our intellectual property rights from competing products in the United States and abroad; and
- a continued acceptable safety and efficacy profile of the drug candidates following marketing approval.

If our clinical trials are unsuccessful, or if they are delayed or terminated, we may not be able to develop and commercialize our products.

In order to obtain regulatory approvals for the commercial sale of our products, we are required to complete extensive clinical trials in humans to demonstrate the safety and efficacy of our drug candidates. Clinical trials are lengthy, complex, and expensive processes with uncertain results. We may not be able to complete any clinical trial of a potential product within any specified time period. Moreover, clinical trials may not show our potential products to be both safe and efficacious. The FDA or other equivalent foreign regulatory agencies may not allow us to complete these trials or commence and complete any other clinical trials. For example, in July 2011, in response to the submission by us to the FDA of a protocol for a proposed Phase 2 clinical trial of IMO-3100 in patients with psoriasis, the FDA notified us that it had placed a clinical hold on the proposed Phase 2 clinical trial.

The results from preclinical testing of a drug candidate that is under development may not be predictive of results that will be obtained in human clinical trials. In addition, the results of early human clinical trials may not be predictive of results that will be obtained in larger scale, advanced stage clinical trials. Furthermore, interim results of a clinical trial do not necessarily predict final results, and failure of any of our clinical trials can occur at any stage of testing. Companies in the biotechnology and pharmaceutical industries, including companies with greater experience in preclinical testing and clinical trials than we have, have suffered significant setbacks in clinical trials, even after demonstrating promising results in earlier trials. Moreover, effects seen in nonclinical studies, even if not observed in clinical trials, may result in limitations or restrictions on clinical trials. Numerous unforeseen events may occur during, or as a result of, preclinical testing, nonclinical testing or the clinical trial process that could delay or inhibit the ability to receive regulatory approval or to commercialize drug products.

In addition to the recent setbacks that we have experienced with respect to the clinical development of our TLR-targeted drug candidates, other companies developing drugs targeted to TLRs have experienced setbacks in clinical trials. For example in 2007, Coley Pharmaceutical Group, which since has been acquired by Pfizer, Inc.,

discontinued four clinical trials for PF-3512676, its investigational TLR9 agonist compound, in combination with cytotoxic chemotherapy in cancer, and suspended its development of a TLR9 agonist, Actilon®, for HCV infection. In July 2007, Anadys Pharmaceuticals, Inc. and its partner Novartis announced that they had decided to discontinue the development of ANA975, the investigational TLR7 agonist compound for HCV infection. Dynavax Technologies Corporation announced in May 2008 discontinuation of the clinical development program for TOLAMBA®, which comprises a TLR9 agonist covalently attached to a ragweed antigen. These setbacks with respect to TLR-targeted drug candidates may result in enhanced scrutiny by regulators or IRBs of clinical trials of TLR-targeted drug candidates, including our TLR-targeted drug candidates, which could result in regulators or IRBs prohibiting the commencement of clinical trials, requiring additional nonclinical studies as a precondition to commencing clinical trials or imposing restrictions on the design or scope of clinical trials that could slow enrollment of trials, increase the costs of trials or limit the significance of the results of trials. Such setbacks could also adversely impact the desire of investigators to enroll patients in, and the desire of patients to enroll in, clinical trials of TLR-targeted drug candidates.

Other events that could delay or inhibit conduct of our clinical trials include:

- regulators or IRBs may not authorize us to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- nonclinical or clinical data may not be readily interpreted, which may lead to delays and/or misinterpretation;
- our nonclinical tests, including toxicology studies, or clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional nonclinical testing or clinical trials or we may abandon projects that we expect may not be promising;
- the rate of enrollment or retention of patients in our clinical trials may be lower than we expect;
- we might have to suspend or terminate our clinical trials if the participating subjects experience serious adverse events or undesirable side effects or are exposed to unacceptable health risks;
- regulators or IRBs may hold, suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements, issues identified through inspections of manufacturing or clinical trial operations or clinical trial sites, or if, in their opinion, the participating subjects are being exposed to unacceptable health risks;
- regulators may hold or suspend our clinical trials while collecting supplemental information on, or clarification of, our clinical trials or other clinical trials, including trials conducted in other countries or trials conducted by other companies;
- we, along with our collaborators and subcontractors, may not employ, in any capacity, persons who have been debarred under the FDA's Application Integrity Policy, or similar policy under foreign regulatory authorities. Employment of such debarred persons, even if inadvertent, may result in delays in the FDA's or foreign equivalent's review or approval of our products, or the rejection of data developed with the involvement of such person(s);
- the cost of our clinical trials may be greater than we currently anticipate; and
- our products may not cause the desired effects or may cause undesirable side effects or our products may have other unexpected characteristics.

The rate of completion of clinical trials is dependent in part upon the rate of enrollment of patients. For example, in our Phase 1 clinical trial of IMO-2125 in patients with chronic HCV infection who had not responded to the

current standard of care therapy, completion of each cohort took longer than anticipated due to enrollment procedures. Patient accrual is a function of many factors, including:

- the size of the patient population;
- the proximity of patients to clinical sites;
- the eligibility criteria for the study;
- the nature of the study, including the pattern of patient enrollment;
- the existence of competitive clinical trials; and
- the availability of alternative treatments.

We do not know whether clinical trials will begin as planned, will need to be restructured or will be completed on schedule, if at all. Significant clinical trial delays also could allow our competitors to bring products to market before we do and impair our ability to commercialize our products.

Delays in commencing clinical trials of potential products could increase our costs, delay any potential revenues, and reduce the probability that a potential product will receive regulatory approval.

Our drug candidates and our collaborators' drug candidates will require preclinical and other nonclinical testing and extensive clinical trials prior to submission of any regulatory application for commercial sales. In conducting clinical trials, we cannot be certain that any planned clinical trial will begin on time, if at all. Delays in commencing clinical trials of potential products could increase our product development costs, delay any potential revenues, and reduce the probability that a potential product will receive regulatory approval.

Commencing clinical trials may be delayed for a number of reasons, including delays in:

- manufacturing sufficient quantities of drug candidate that satisfy the required quality standards for use in clinical trials;
- demonstrating sufficient safety to obtain regulatory approval for conducting a clinical trial;
- reaching an agreement with any collaborators on all aspects of the clinical trial;
- reaching agreement with contract research organizations, if any, and clinical trial sites on all aspects of the clinical trial;
- resolving any objections from the FDA or any regulatory authority on an IND application or proposed clinical trial design;
- obtaining IRB approval for conducting a clinical trial at a prospective site; and
- enrolling patients in order to commence the clinical trial.

The technologies on which we rely are unproven and may not result in any approved and marketable products.

Our technologies or therapeutic approaches are relatively new and unproven. We have focused our efforts on the research and development of RNA- and DNA-based compounds targeted to TLRs and on GSOs. Neither we nor any

other company have obtained regulatory approval to market such compounds as therapeutic drugs, and no such products currently are being marketed. It is unknown whether the results of preclinical studies with TLR-targeted compounds will be indicative of results that may be obtained in clinical trials, and results we have obtained in the initial small-scale clinical trials we have conducted to date may not be predictive of results in subsequent large-scale clinical trials. Further, the chemical and pharmacological properties of RNA- and DNA-based compounds targeted to TLRs or of GSOs may not be fully recognized in preclinical studies and small-scale clinical trials, and such compounds may interact with human biological systems in unforeseen, ineffective or harmful ways that we have not yet identified.

As a result of these factors, we may never succeed in obtaining regulatory approval to market any product. Furthermore, the commercial success of any of our products for which we may obtain marketing approval from the FDA or other regulatory authorities will depend upon their acceptance by patients, the medical community, and third-party payors as clinically useful, safe, and cost-effective. In addition, if products being developed by our competitors have negative clinical trial results or otherwise are viewed negatively, the perception of our technologies and market acceptance of our products could be impacted negatively.

Our recent setbacks with respect to our TLR-targeted compounds, together with the setbacks experienced by other companies developing TLR-targeted compounds, may result in a negative perception of our technology and our TLR-targeted compounds, impact our ability to obtain marketing approval of these drug candidates and adversely affect acceptance of our technology and our TLR-targeted compounds by patients, the medical community and third-party payors.

Our efforts to educate the medical community on our potentially unique approaches may require greater resources than would be typically required for products based on conventional technologies or therapeutic approaches. The safety, efficacy, convenience, and cost-effectiveness of our products as compared to competitive products will also affect market acceptance.

We face substantial competition, which may result in others discovering, developing or commercializing drugs before or more successfully than us.

We are developing our TLR-targeted drug candidates for use in the treatment of infectious diseases, autoimmune and inflammatory diseases, respiratory diseases, and cancer, and as vaccine adjuvants. We are also advancing our gene silencing oligonucleotide, or GSO, technology for potential application as research reagents and as therapeutic agents. For all of the disease areas in which we are developing potential therapies, there are many other companies, public and private, that are actively engaged in discovering, developing, and commercializing products and technologies that may compete with our technologies and drug candidates and technology, including TLR targeted compounds as well as non-TLR targeted therapies.

We are developing IMO-2125 for use as an alternative to recombinant interferon in the treatment of HCV. The current standard of care in the treatment of HCV consists of a single recombinant interferon-alpha protein plus ribavarin and a direct acting antiviral. If we are able to commercialize IMO-2125 for chronic HCV infection, we will face competition from the interferons currently marketed today and advanced forms of recombinant interferons being developed, including those being developed by Bristol-Myers Squibb Company and Biolex Therapeutics, Inc. In addition, to the extent that a therapy is developed as an alternative to the current standard of care that does not include recombinant interferon or any alternative to recombinant interferon, we may face competition from those therapies as well, such as protease and polymerase inhibitors being developed by Merck, Vertex Pharmaceuticals, Inc. and Pharmasset, Inc. We are also aware of numerous other compounds in clinical trials that target chronic HCV infection through a number of different mechanisms of action, and we believe that there are many additional potential HCV treatments in research or early development. There are also a number of companies developing TLR-targeted compounds for chronic HCV infection, including Dynavax Technologies Corporation, Anadys Pharmaceuticals, Inc., and Gilead Sciences, Inc.

Our principal competitors developing TLR-targeted compounds for autoimmune and inflammatory diseases include Dynavax Technologies Corporation, with its collaborator, GlaxoSmithKline plc and for respiratory diseases include AstraZeneca Pharmaceuticals plc, Pfizer, Inc., in collaboration with Sanofi-Aventis Groupe, Cytos Biotechnology AG, Dynavax Technologies Corporation in collaboration with AstraZeneca Pharmaceuticals plc, and VentiRx Pharmaceuticals. For our partnered programs, our principal competitors developing TLR-targeted compounds for cancer treatment include Pfizer, Inc., Anadys Pharmaceuticals, Inc. and VentiRx Pharmaceuticals. Merck's vaccines using our TLR7, 8 or 9 agonists as adjuvants may compete with vaccines being developed or marketed by GlaxoSmithKline plc, Novartis, Dynavax Technologies Corporation, VaxInnate, Inc., Intercell AG, Cytos Biotechnology AG, and Celldex Therapeutics, Inc.

Some of these potentially competitive products have been in development or commercialized for years, in some cases by large, well established pharmaceutical companies. Many of the marketed products have been accepted by the medical community, patients, and third-party payors. Our ability to compete may be affected by the previous adoption of such products by the medical community, patients, and third-party payors. Additionally, in some instances, insurers and other third-party payors seek to encourage the use of generic products, which makes branded products, such as our drug candidates, potentially less attractive, from a cost perspective, to buyers.

We recognize that other companies, including large pharmaceutical companies, may be developing or have plans to develop products and technologies that may compete with ours. Many of our competitors have substantially greater financial, technical, and human resources than we have. In addition, many of our competitors have significantly greater experience than we have in undertaking preclinical studies and human clinical trials of new pharmaceutical products, obtaining FDA and other regulatory approvals of products for use in health care and manufacturing, and marketing and selling approved products. Our competitors may discover, develop or commercialize products or other novel technologies that are more effective, safer or less costly than any that we are developing. Our competitors may also obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours.

We anticipate that the competition with our products and technologies will be based on a number of factors including product efficacy, safety, availability, and price. The timing of market introduction of our products and competitive products will also affect competition among products. We expect the relative speed with which we can develop products, complete the clinical trials, and approval processes and supply commercial quantities of the products to the market to be important competitive factors. Our competitive position will also depend upon our ability to attract and retain qualified personnel, to obtain patent protection or otherwise develop proprietary products or processes, and protect our intellectual property, and to secure sufficient capital resources for the period between technological conception and commercial sales.

Competition for technical and management personnel is intense in our industry, and we may not be able to sustain our operations or grow if we are unable to attract and retain key personnel.

Our success is highly dependent on the retention of principal members of our technical and management staff, including Dr. Sudhir Agrawal. Dr. Agrawal serves as our Chairman of the Board of Directors, President and Chief Executive Officer. Dr. Agrawal has made significant contributions to the field of oligonucleotide-based drug candidates, and has led the discovery and development of our compounds targeted to TLRs. He is named as an inventor on over 400 patents and patent applications worldwide. Dr. Agrawal provides us with leadership for our management team and research and development activities. The loss of Dr. Agrawal's services would be detrimental to our ongoing scientific progress and the execution of our business plan.

We are a party to an employment agreement with Dr. Agrawal that expires on October 19, 2013, but automatically extends annually for an additional year. This agreement may be terminated by us or Dr. Agrawal for any reason or no reason at any time upon notice to the other party. We do not carry key man life insurance for Dr. Agrawal.

Furthermore, our future growth will require hiring a number of qualified technical and management personnel. Accordingly, recruiting and retaining such personnel in the future will be critical to our success. There is intense competition from other companies and research and academic institutions for qualified personnel in the areas of our activities. If we are not able to continue to attract and retain, on acceptable terms, the qualified personnel necessary for the continued development of our business, we may not be able to sustain our operations or growth.

Regulatory Risks

We may not be able to obtain marketing approval for products resulting from our development efforts.

All of the drug candidates that we are developing, or may develop in the future, will require additional research and development, extensive preclinical studies, nonclinical testing, clinical trials, and regulatory approval prior to any commercial sales. This process is lengthy, often taking a number of years, is uncertain, and is expensive. Since our inception, we have conducted clinical trials of a number of compounds. Currently, we have two candidates, IMO-2125 and IMO-3100, in clinical development. The FDA and other regulatory authorities may not approve any of our potential products for any indication.

We may need to address a number of technological challenges in order to complete development of our products. Moreover, these products may not be effective in treating any disease or may prove to have undesirable or unintended side effects, unintended alteration of the immune system over time, toxicities or other characteristics that may preclude our obtaining regulatory approval or prevent or limit commercial use. If we do not obtain necessary regulatory approvals, our business will be adversely affected.

We are subject to comprehensive regulatory requirements, which are costly and time consuming to comply with; if we fail to comply with these requirements, we could be subject to adverse consequences and penalties.

The testing, manufacturing, labeling, advertising, promotion, export, and marketing of our products are subject to extensive regulation by governmental authorities in Europe, the United States, and elsewhere throughout the world.

In general, submission of materials requesting permission to conduct clinical trials may not result in authorization by the FDA or any equivalent foreign regulatory agency to commence clinical trials. Further, permission to continue ongoing trials may be withdrawn by the FDA or other regulatory agencies at any time after initiation, based on new information available after the initial authorization to commence clinical trials or for other reasons. In addition, submission of an application for marketing approval to the relevant regulatory agency following completion of clinical trials may not result in the regulatory agency approving the application if applicable regulatory criteria are not satisfied, and may result in the regulatory agency requiring additional testing or information.

Even if we obtain regulatory approval for any of our product candidates, we will be subject to ongoing FDA obligations and regulatory oversight. Any regulatory approval of a product may contain limitations on the approved indicated uses for which the product may be marketed or requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. Any product for which we obtain marketing approval, along with the facilities at which the product is manufactured, any post-approval clinical data, and any advertising and promotional activities for the product will be subject to continual review and periodic inspections by the FDA and other regulatory agencies.

Both before and after approval is obtained, failure to comply with regulatory requirements, or discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, may result in:

- the regulatory agency's delay in approving, or refusal to approve, an application for marketing of a product or a supplement to an approved application;
- restrictions on our products or the marketing or manufacturing of our products;
- withdrawal of our products from the market;
- warning letters;
- voluntary or mandatory product recalls;
- fines;
- suspension or withdrawal of regulatory approvals;
- product seizure or detention;
- refusal to permit the import or export of our products;
- injunctions or the imposition of civil penalties; and
- criminal penalties.

We have only limited experience in regulatory affairs and our products are based on new technologies; these factors may affect our ability or the time we require to obtain necessary regulatory approvals.

We have only limited experience in filing the applications necessary to obtain regulatory approvals. Moreover, the products that result from our research and development programs will likely be based on new technologies and new therapeutic approaches that have not been extensively tested in humans. The regulatory requirements governing these types of products may be more rigorous than for conventional drugs. As a result, we may experience a longer regulatory process in connection with obtaining regulatory approvals of any product that we develop.

Failure to obtain regulatory approval in jurisdictions outside the United States will prevent us from marketing our products abroad.

We intend to market our products, if approved, in markets outside the United States, which will require separate regulatory approvals and compliance with numerous and varying regulatory requirements. The approval procedures vary among such markets and may involve requirements for additional testing, and the time required to obtain approval may differ from that required to obtain FDA approval. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or by the FDA. The foreign regulatory approval process may include all of the risks associated with obtaining FDA approval. We may not obtain foreign regulatory approvals on a timely basis, if at all.

Risks Relating to Collaborators

If we are unable to establish additional collaborative alliances, our business may be materially harmed.

We seek to advance some of our products through collaborative alliances with pharmaceutical companies. Collaborators provide the necessary resources and drug development experience to advance our compounds in their programs. Upfront payments and milestone payments received from collaborations help to provide us with the financial resources for our internal research and development programs. Our internal programs are focused on developing TLR-targeted drug candidates for the potential treatment of infectious diseases, autoimmune and

inflammatory diseases, cancer, and respiratory diseases. We are also advancing our GSO technology for potential

application as research reagents and as therapeutic agents. We believe that additional resources will be required to advance compounds in all of these areas. If we do not reach agreements with additional collaborators in the future, we may not be able to obtain the expertise and resources necessary to achieve our business objectives, our ability to advance our compounds will be jeopardized and we may fail to meet our business objectives.

We may have difficulty establishing additional collaboration alliances, particularly with respect to our TLR-targeted drug candidates and technology. Potential partners may note that one of our TLR collaborations, with Novartis, was terminated by Novartis, and that Merck KGaA has informed us that it has determined not to conduct further clinical development of IMO-2055 at this stage. Potential partners may also be reluctant to establish collaborations with respect to IMO-2125, IMO-3100 and our other TLR-targeted drug candidates, given our recent setbacks with respect to IMO-2125 and IMO-3100. We also face, and will continue to face, significant competition in seeking appropriate collaborators.

Even if a potential partner were willing to enter into a collaborative alliance with respect to our TLR-targeted compounds or technology, the terms of such a collaborative alliance may not be on terms that are favorable to us. Moreover, collaborations are complex and time consuming to negotiate, document, and implement. We may not be successful in our efforts to establish and implement collaborations on a timely basis.

Our existing collaborations and any collaborations we enter into in the future may not be successful.

An important element of our business strategy includes entering into collaborative alliances with corporate collaborators, primarily large pharmaceutical companies, for the development, commercialization, marketing, and distribution of some of our drug candidates. In December 2007, we entered into an exclusive, worldwide license agreement with Merck KGaA to research, develop, and commercialize products containing our TLR9 agonists for treatment of cancer, excluding cancer vaccines. In December 2006, we entered into an exclusive license and research collaboration with Merck to research, develop, and commercialize vaccine products containing our TLR7, 8, and 9 agonists in the fields of cancer, infectious diseases, and Alzheimer's disease.

Any collaboration that we enter into may not be successful. For instance, Merck KGaA has informed us that it has determined not to conduct further clinical development of IMO-2055 at this stage. The success of our collaborative alliances, if any, will depend heavily on the efforts and activities of our collaborators. Our existing collaborations and any potential future collaborations have risks, including the following:

- our collaborators may control the development of the drug candidates being developed with our technologies and compounds including the timing of development;
- our collaborators may control the public release of information regarding the developments, and we may not be able to make announcements or data presentations on a schedule favorable to us;
- disputes may arise in the future with respect to the ownership of rights to technology developed with our collaborators;
- disagreements with our collaborators could delay or terminate the research, development or commercialization of products, or result in litigation or arbitration;
- we may have difficulty enforcing the contracts if any of our collaborators fail to perform;
- our collaborators may terminate their collaborations with us, which could make it difficult for us to attract new collaborators or adversely affect the perception of us in the business or financial communities;

- our collaboration agreements are likely to be for fixed terms and subject to termination by our collaborators in the event of a material breach or lack of scientific progress by us;
- our collaborators may have the first right to maintain or defend our intellectual property rights and, although we would likely have the right to assume the maintenance and defense of our intellectual property rights if our collaborators do not, our ability to do so may be compromised by our collaborators' acts or omissions;
- our collaborators may challenge our intellectual property rights or utilize our intellectual property rights in such a way as to invite litigation that could jeopardize or invalidate our intellectual property rights or expose us to potential liability;
- our collaborators may not comply with all applicable regulatory requirements, or may fail to report safety data in accordance with all applicable regulatory requirements;
- our collaborators may change the focus of their development and commercialization efforts. Pharmaceutical and biotechnology companies historically have re-evaluated their priorities following mergers and consolidations, which have been common in recent years in these industries. For example, we have a strategic partnership with Merck, which merged with Schering-Plough, which has been involved with certain TLR-targeted research and development programs. Although the merger has not affected our partnership with Merck to date, management of the combined company could determine to reduce the efforts and resources that the combined company will apply to its strategic partnership with us or terminate the strategic partnership. The ability of our products to reach their potential could be limited if our collaborators decrease or fail to increase spending relating to such products;
- our collaborators may under fund or not commit sufficient resources to the testing, marketing, distribution or development of our products; and
- our collaborators may develop alternative products either on their own or in collaboration with others, or encounter conflicts of interest or changes in business strategy or other business issues, which could adversely affect their willingness or ability to fulfill their obligations to us.

Given these risks, it is possible that any collaborative alliance into which we enter may not be successful. Collaborations with pharmaceutical companies and other third parties often are terminated or allowed to expire by the other party. For example, effective as of February 2010, Novartis International Pharmaceutical, Ltd. terminated the research collaboration and option agreement that we entered into with it in May 2005. Merck may terminate its license and research collaboration agreement by giving us 90 days advance notice. Merck KGaA may terminate its license agreement with us at its convenience by giving us 90 days advance notice. The termination or expiration of either of these agreements or any other collaboration agreement that we enter into in the future may adversely affect us financially and could harm our business reputation.

Risks Relating to Intellectual Property

If we are unable to obtain patent protection for our discoveries, the value of our technology and products will be adversely affected.

Our patent positions, and those of other drug discovery companies, are generally uncertain and involve complex legal, scientific, and factual questions. Our ability to develop and commercialize drugs depends in significant part on our ability to:

- obtain patents;
- obtain licenses to the proprietary rights of others on commercially reasonable terms;
- operate without infringing upon the proprietary rights of others;

- prevent others from infringing on our proprietary rights; and
- protect our trade secrets.

We do not know whether any of our patent applications or those patent applications that we license will result in the issuance of any patents. Our issued patents and those that may be issued in the future, or those licensed to us, may be challenged, invalidated or circumvented, and the rights granted thereunder may not provide us proprietary protection or competitive advantages against competitors with similar technology. Moreover, intellectual property laws may change and negatively impact our ability to obtain issued patents covering our technologies or to enforce any patents that issue. Because of the extensive time required for development, testing, and regulatory review of a potential product, it is possible that, before any of our products can be commercialized, any related patent may expire or remain in force for only a short period following commercialization, thus reducing any advantage provided by the patent.

Because patent applications in the United States and many foreign jurisdictions are typically not published until 18 months after filing, or in some cases not at all, and because publications of discoveries in the scientific literature often lag behind actual discoveries, neither we nor our licensors can be certain that we or they were the first to make the inventions claimed in issued patents or pending patent applications, or that we or they were the first to file for protection of the inventions set forth in these patent applications.

As of July 15, 2011, we owned 76 U.S. patents and U.S. patent applications and 241 corresponding patents and patent applications throughout the rest of the world for our TLR-targeted immune modulation technologies. These patents and patent applications include novel chemical compositions of matter and methods of use of our IMO compounds, including IMO-2125, IMO-3100 and IMO-2055. With respect to IMO-2125, we have issued patents that cover the chemical composition of matter of IMO-2125 and methods of its use, with the earliest composition claims expiring in 2026. With respect to IMO-3100, we have patent applications that cover the chemical composition of matter of IMO-3100 and methods of its use that, if issued, would expire at the earliest in 2026. With respect to IMO-2055, we have issued patents that cover the chemical composition of matter of IMO-2055 and methods of its use, including in combination with marketed cancer products, with the earliest composition claims expiring in 2023. With respect to IMO-4200, we have patent applications that cover the chemical composition of matter of IMO-4200 and methods of its use that, if issued, would expire at the earliest in 2027.

As of July 15, 2011, we owned four U.S. patent applications and one worldwide patent application for our GSO compounds and methods of their use. Patents issuing from these patent applications, if any, would expire at the earliest in 2030.

In addition to our TLR-targeted and GSO patent portfolios, we are the owner or hold licenses of patents and patent applications related to antisense technology. As of July 15, 2011, our antisense patent portfolio included 101 U.S. patents and patent applications and 176 patents and patent applications throughout the rest of the world. These antisense patents and patent applications include novel compositions of matter, the use of these compositions for various genes, sequences and therapeutic targets, and oral and other routes of administration. Some of the patents and patent applications in our antisense portfolio were in-licensed. These in-licensed patents expire at various dates ranging from 2014 to 2022.

Third parties may own or control patents or patent applications and require us to seek licenses, which could increase our development and commercialization costs, or prevent us from developing or marketing products.

Although we have many issued patents and pending patent applications in the United States and other countries, we may not have rights under certain third party patents or patent applications related to our products. Third parties may own or control these patents and patent applications in the United States and abroad. In particular, we are aware of third party United States patents that contain broad claims related to the use of certain oligonucleotides for stimulating an immune response, although we do not believe that these claims are valid. In addition, there may be

other patents and patent applications related to our products of which we are not aware. Therefore, in some cases, in order to develop, manufacture, sell or import some of our products, we or our collaborators may choose to seek, or be required to seek, licenses under third-party patents issued in the United States and abroad or under third party patents that might issue from United States and foreign patent applications. In such an event, we would be required to pay license fees or royalties or both to the licensor. If licenses are not available to us on acceptable terms, we or our collaborators may not be able to develop, manufacture, sell or import these products.

We may lose our rights to patents, patent applications or technologies of third parties if our licenses from these third parties are terminated. In such an event, we might not be able to develop or commercialize products covered by the licenses.

Currently, we have not in-licensed any patents or patent applications related to our TLR-targeted drug candidate programs or our GSO compounds and methods of their use. However, we are party to seven royalty-bearing license agreements under which we have acquired rights to patents, patent applications, and technology of third parties in the field of antisense technology, which may be applicable to our TLR antisense. Under these licenses we are obligated to pay royalties on net sales by us of products or processes covered by a valid claim of a patent or patent application licensed to us. We also are required in some cases to pay a specified percentage of any sublicense income that we may receive. These licenses impose various commercialization, sublicensing, insurance, and other obligations on us.

Our failure to comply with these requirements could result in termination of the licenses. These licenses generally will otherwise remain in effect until the expiration of all valid claims of the patents covered by such licenses or upon earlier termination by the parties. The issued patents covered by these licenses expire at various dates ranging from 2014 to 2022. If one or more of these licenses is terminated, we may be delayed in our efforts, or be unable, to develop and market the products that are covered by the applicable license or licenses.

We may become involved in expensive patent litigation or other proceedings, which could result in our incurring substantial costs and expenses or substantial liability for damages or require us to stop our development and commercialization efforts.

There has been substantial litigation and other proceedings regarding patent and other intellectual property rights in the biotechnology industry. We may become a party to various types of patent litigation or other proceedings regarding intellectual property rights from time to time even under circumstances where we are not practicing and do not intend to practice any of the intellectual property involved in the proceedings. For instance, in 2002, 2003, and 2005, we became involved in interference proceedings declared by the United States Patent and Trademark Office for some of our antisense and ribozyme patents. All of these interferences have since been resolved. We are neither practicing nor intending to practice the intellectual property that is associated with any of these interference proceedings.

The cost to us of any patent litigation or other proceeding even if resolved in our favor, could be substantial. Some of our competitors may be able to sustain the cost of such litigation or proceedings more effectively than we can because of their substantially greater financial resources. If any patent litigation or other proceeding is resolved against us, we or our collaborators may be enjoined from developing, manufacturing, selling or importing our drugs without a license from the other party and we may be held liable for significant damages. We may not be able to obtain any required license on commercially acceptable terms or at all.

Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace. Patent litigation and other proceedings may also absorb significant management time.

Risks Relating to Product Manufacturing, Marketing and Sales, and Reliance on Third Parties

Because we have limited manufacturing experience, and no manufacturing facilities or infrastructure, we are dependent on third-party manufacturers to manufacture drug candidates for us. If we cannot rely on third-party manufacturers, we will be required to incur significant costs and devote significant efforts to establish our own manufacturing facilities and capabilities.

We have limited manufacturing experience and no manufacturing facilities, infrastructure or clinical or commercial scale manufacturing capabilities. In order to continue to develop our drug candidates, apply for regulatory approvals, and ultimately commercialize products, we need to develop, contract for or otherwise arrange for the necessary manufacturing capabilities.

We currently rely upon third parties to produce material for nonclinical and clinical testing purposes and expect to continue to do so in the future. We also expect to rely upon third parties to produce materials that may be required for the commercial production of our products. Our current and anticipated future dependence upon others for the manufacture of our drug candidates may adversely affect our future profit margins and our ability to develop drug candidates and commercialize any drug candidates on a timely and competitive basis. We currently do not have any long term supply contracts.

There are a limited number of manufacturers that operate under the FDA's current Good Manufacturing Practices, or cGMP, regulations capable of manufacturing our drug candidates. As a result, we may have difficulty finding manufacturers for our products with adequate capacity for our needs. If we are unable to arrange for third-party manufacturing of our drug candidates on a timely basis, or to do so on commercially reasonable terms, we may not be able to complete development of our drug candidates or market them.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured drug candidates ourselves, including:

- reliance on the third party for regulatory compliance and quality assurance;
- the possibility of breach of the manufacturing agreement by the third party because of factors beyond our control;
- the possibility of termination or nonrenewal of the agreement by the third party, based on its own business priorities, at a time that is costly or inconvenient for us;
- the potential that third-party manufacturers will develop know-how owned by such third party in connection with the production of our drug candidates that becomes necessary for the manufacture of our drug candidates; and
- reliance upon third-party manufacturers to assist us in preventing inadvertent disclosure or theft of our proprietary knowledge.

Any contract manufacturers with which we enter into manufacturing arrangements will be subject to ongoing periodic, unannounced inspections by the FDA, or foreign equivalent, and corresponding state and foreign agencies or their designees to ensure compliance with cGMP requirements and other governmental regulations and corresponding foreign standards. One of our contract manufacturers notified us that it had received a GMP warning letter from the FDA in February 2011. Any failure by our third-party manufacturers to comply with such requirements, regulations or standards could lead to a delay in the conduct of our clinical trials, or a delay in, or failure to obtain, regulatory approval of any of our drug candidates. Such failure could also result in sanctions being imposed, including fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, product seizures or recalls, imposition of operating restrictions, total or partial suspension of production or distribution, or criminal prosecution.

Additionally, contract manufacturers may not be able to manufacture our drug candidates at a cost or in quantities necessary to make them commercially viable. To date, our third-party manufacturers have met our manufacturing requirements, but we cannot be assured that they will continue to do so. Furthermore, changes in the manufacturing process or procedure, including a change in the location where the drug substance or drug product is manufactured or a change of a third-party manufacturer, may require prior FDA review and approval in accordance with the FDA's cGMP and NDA/BLA regulations. Contract manufacturers may also be subject to comparable foreign requirements. This review may be costly and time-consuming and could delay or prevent the launch of a drug candidate. The FDA or similar foreign regulatory agencies at any time may also implement new standards, or change their interpretation and enforcement of existing standards for manufacture, packaging or testing of products. If we or our contract manufacturers are unable to comply, we or they may be subject to regulatory action, civil actions or penalties.

We have no experience selling, marketing or distributing products and no internal capability to do so.

If we receive regulatory approval to commence commercial sales of any of our drug candidates, we will face competition with respect to commercial sales, marketing, and distribution. These are areas in which we have no experience. To market any of our drug candidates directly, we would need to develop a marketing and sales force with technical expertise and with supporting distribution capability. In particular, we would need to recruit a large number of experienced marketing and sales personnel. Alternatively, we could engage a pharmaceutical or other healthcare company with an existing distribution system and direct sales force to assist us. However, to the extent we entered into such arrangements, we would be dependent on the efforts of third parties. If we are unable to establish sales and distribution capabilities, whether internally or in reliance on third parties, our business would suffer materially.

If third parties on whom we rely for clinical trials do not perform as contractually required or as we expect, we may not be able to obtain regulatory approval for or commercialize our products and our business may suffer.

We do not have the ability to independently conduct the clinical trials required to obtain regulatory approval for our drug candidates. We depend on independent clinical investigators, contract research organizations, and other third-party service providers in the conduct of the clinical trials of our drug candidates and expect to continue to do so. We contracted with contract research organizations to manage our recently completed Phase 1 clinical trials of IMO-2125 in patients with chronic HCV infection and our Phase 1 clinical trials of IMO-3100 in healthy subjects and expect to contract with such organizations for future clinical trials. We rely heavily on these parties for successful execution of our clinical trials, but do not control many aspects of their activities. We are responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA and foreign regulatory agencies require us to comply with certain standards, commonly referred to as good clinical practices, and applicable regulatory requirements, for conducting, recording, and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity, and confidentiality of clinical trial participants are protected. Our reliance on third parties that we do not control does not relieve us of these responsibilities and requirements. Third parties may not complete activities on schedule, or at all, or may not conduct our clinical trials in accordance with regulatory requirements or our stated protocols. The failure of these third parties to carry out their obligations could delay or prevent the development, approval, and commercialization of our drug candidates. If we seek to conduct any of these activities ourselves in the future, we will need to recruit appropriately trained personnel and add to our infrastructure.

The commercial success of any drug candidates that we may develop will depend upon the degree of market acceptance by physicians, patients, third-party payors, and others in the medical community.

Any products that we ultimately bring to the market, if they receive marketing approval, may not gain market acceptance by physicians, patients, third-party payors or others in the medical community. If these products do not achieve an adequate level of acceptance, we may not generate significant product revenue and we may not become

profitable. The degree of market acceptance of our drug candidates, if approved for commercial sale, will depend on a number of factors, including:

- the prevalence and severity of any side effects, including any limitations or warnings contained in the product's approved labeling;
- the efficacy and potential advantages over alternative treatments;
- the ability to offer our drug candidates for sale at competitive prices;
- relative convenience and ease of administration;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support and the timing of market introduction of competitive products; and
- publicity concerning our products or competing products and treatments.

Even if a potential product displays a favorable efficacy and safety profile, market acceptance of the product will not be known until after it is launched. Our efforts to educate patients, the medical community, and third-party payors on the benefits of our drug candidates may require significant resources and may never be successful. Such efforts to educate the marketplace may require more resources than are required by conventional technologies marketed by our competitors.

If we are unable to obtain adequate reimbursement from third-party payors for any products that we may develop or acceptable prices for those products, our revenues and prospects for profitability will suffer.

Most patients rely on Medicare, Medicaid, private health insurers, and other third-party payors to pay for their medical needs, including any drugs we may market. If third-party payors do not provide adequate coverage or reimbursement for any products that we may develop, our revenues and prospects for profitability will suffer. Congress enacted a limited prescription drug benefit for Medicare recipients in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003. While the program established by this statute may increase demand for our products if we were to participate in this program, our prices will be negotiated with drug procurement organizations for Medicare beneficiaries and are likely to be lower than we might otherwise obtain. Non-Medicare third-party drug procurement organizations may also base the price they are willing to pay on the rate paid by drug procurement organizations for Medicare beneficiaries.

A primary trend in the United States healthcare industry is toward cost containment. In addition, in some foreign countries, particularly the countries of the European Union, the pricing of prescription pharmaceuticals is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take six months or longer after the receipt of regulatory marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost effectiveness of our drug candidates or products to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in commercialization of our products. These further clinical trials would require additional time, resources and expenses. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, our prospects for generating revenue, if any, could be adversely affected and our business may suffer.

In March 2010, the Patient Protection and Affordable Care Act and the Health Care and Education Reconciliation Act became law. These health care reform laws are intended to broaden access to health insurance; reduce or constrain the growth of health care spending, especially Medicare spending; enhance remedies against fraud and

abuse; add new transparency requirements for health care and health insurance industries; impose new taxes and fees on certain sectors of the health industry; and impose additional health policy reforms. Among the new fees is an annual assessment beginning in 2011 on makers of branded pharmaceuticals and biologics, under which a company's assessment is based primarily on its share of branded drug sales to federal health care programs. Such fees could affect our future profitability. Although it is too early to determine the effect of the new health care legislation on our future profitability and financial condition, the new law appears likely to continue the pressure on pharmaceutical pricing, especially under the Medicare program, and may also increase our regulatory burdens and operating costs.

Third-party payors are challenging the prices charged for medical products and services, and many third-party payors limit reimbursement for newly-approved health care products. These third-party payors may base their coverage and reimbursement on the coverage and reimbursement rate paid by carriers for Medicare beneficiaries. Furthermore, many such payors are investigating or implementing methods for reducing health care costs, such as the establishment of capitated or prospective payment systems. Cost containment pressures have led to an increased emphasis on the use of cost-effective products by health care providers. In particular, third-party payors may limit the indications for which they will reimburse patients who use any products that we may develop. Cost control initiatives could decrease the price we might establish for products that we or our current or future collaborators may develop or sell, which would result in lower product revenues or royalties payable to us.

We face a risk of product liability claims and may not be able to obtain insurance.

Our business exposes us to the risk of product liability claims that is inherent in the manufacturing, testing, and marketing of human therapeutic drugs. We face an inherent risk of product liability exposure related to the testing of our drug candidates in human clinical trials and will face an even greater risk if we commercially sell any products. Regardless of merit or eventual outcome, liability claims and product recalls may result in:

- decreased demand for our drug candidates and products;
- damage to our reputation;
- regulatory investigations that could require costly recalls or product modifications;
- withdrawal of clinical trial participants;
- costs to defend related litigation;
- substantial monetary awards to clinical trial participants or patients, including awards that substantially exceed our product liability insurance, which we would then have to pay using other sources, if available, and would damage our ability to obtain liability insurance at reasonable costs, or at all, in the future;
- loss of revenue;
- the diversion of management's attention away from managing our business; and
- the inability to commercialize any products that we may develop.

Although we have product liability and clinical trial liability insurance that we believe is adequate, this insurance is subject to deductibles and coverage limitations. We may not be able to obtain or maintain adequate protection against potential liabilities. If we are unable to obtain insurance at acceptable cost or otherwise protect against potential product liability claims, we will be exposed to significant liabilities, which may materially and adversely affect our business and financial position. These liabilities could prevent or interfere with our commercialization efforts.

Risks Relating to an Investment in Our Common Stock

Our corporate governance structure, including provisions in our certificate of incorporation and by-laws, our stockholder rights plan and Delaware law, may prevent a change in control or management that stockholders may consider desirable.

Section 203 of the Delaware General Corporation Law and our certificate of incorporation, by-laws, and stockholder rights plan contain provisions that might enable our management to resist a takeover of our company or discourage a third party from attempting to take over our company. These provisions include:

- a classified board of directors;
- limitations on the removal of directors;
- limitations on stockholder proposals at meetings of stockholders;
- the inability of stockholders to act by written consent or to call special meetings; and
- the ability of our board of directors to designate the terms of and issue new series of preferred stock without stockholder approval.

In addition, Section 203 of the Delaware General Corporation Law imposes restrictions on our ability to engage in business combinations and other specified transactions with significant stockholders. These provisions could have the effect of delaying, deferring or preventing a change in control of us or a change in our management that stockholders may consider favorable or beneficial. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors and take other corporate actions. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock.

Our stock price has been and may in the future be extremely volatile. In addition, because an active trading market for our common stock has not developed, our investors' ability to trade our common stock may be limited. As a result, investors may lose all or a significant portion of their investment.

Our stock price has been volatile. During the period from January 1, 2010 to July 29, 2011, the closing sales price of our common stock ranged from a high of $6.94 per share to a low of $1.80 per share. The stock market has also experienced significant price and volume fluctuations, particularly within the past three years, and the market prices of biotechnology companies in particular have been highly volatile, often for reasons that have been unrelated to the operating performance of particular companies. The market price for our common stock may be influenced by many factors, including:

- timing and results of nonclinical studies and clinical trials of our drug candidates or those of our competitors;
- the regulatory status of our drug candidates;
- failure of any of our drug candidates, if approved, to achieve commercial success;
- the success of competitive products or technologies;
- regulatory developments in the United States and foreign countries;
- our success in entering into collaborative agreements;
- developments or disputes concerning patents or other proprietary rights;
- the departure of key personnel;

- variations in our financial results or those of companies that are perceived to be similar to us;
- our cash resources;
- the terms of any financing conducted by us;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors and issuance of new or changed securities analysts' reports or recommendations; and
- general economic, industry, and market conditions.

In addition, our common stock has historically been traded at low volume levels and may continue to trade at low volume levels. As a result, any large purchase or sale of our common stock could have a significant impact on the price of our common stock and it may be difficult for investors to sell our common stock in the market without depressing the market price for the common stock or at all.

As a result of the foregoing, investors may not be able to resell their shares at or above the price they paid for such shares. Investors in our common stock must be willing to bear the risk of fluctuations in the price of our common stock and the risk that the value of their investment in our stock could decline.

ITEM 5. OTHER INFORMATION.

On August 1, 2011, the Company and Louis J. Arcudi, the Company's Senior Vice President, Operations and Chief Financial Officer, entered into an employment letter agreement, which amends and restates the previous employment letter agreement between the Company and Mr. Arcudi dated November 8, 2007. Under the terms of the new employment letter agreement, Mr. Arcudi is entitled to receive:

- an annual base salary of $315,000 per year, effective as of May 1, 2011, and
- an annual bonus based on the achievement of both individual and Company performance objectives as developed and determined by the Company and subject to the approval of the Board of Directors of the Company.

If the Company terminates Mr. Arcudi's employment without cause, Mr. Arcudi will be entitled to three months severance and benefits continuation. If the Company terminates Mr. Arcudi's employment without cause or Mr. Arcudi resigns from employment with the Company for good reason upon a change in control or within the twelve (12) month period following the change in control, then Mr. Arcudi will be entitled to nine months severance and benefits continuation. The Company's obligations to make severance payments and provide benefits to Mr. Arcudi are contingent upon Mr. Arcudi's execution of a separation and release agreement. "Cause," "good reason" and "change in control" are defined in the employment letter agreement.

The foregoing summary of Mr. Arcudi's employment agreement with the Company is qualified in its entirety by reference to the employment letter agreement, which is filed as Exhibit 10.5 hereto and is incorporated herein by reference.

ITEM 6. EXHIBITS.

The list of Exhibits filed as part of this Quarterly Report on Form 10-Q is set forth on the Exhibit Index immediately preceding such Exhibits and is incorporated herein by this reference.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

IDERA PHARMACEUTICALS, INC.

Date: August 5, 2011

/s/ Sudhir Agrawal
Sudhir Agrawal
Chairman, President and Chief Executive Officer (Principal Executive Officer)

Date: August 5, 2011

/s/ Louis J. Arcudi, III
Louis J. Arcudi, III
Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit Index

Exhibit No.	
10.1†	Letter Agreement dated June 2, 2010 to the License Agreement by and between Merck KGaA and Idera Pharmaceuticals, Inc., dated December 18, 2007.
10.2†	Letter Agreement dated May 27, 2011 to the License Agreement by and between Merck KGaA and Idera Pharmaceuticals, Inc., dated December 18, 2007.
10.3	2008 Stock Incentive Plan, as amended (previously filed as Exhibit 99.2 to the Company's Current Report on Form 8-K, filed with the SEC on June 17, 2011, and incorporated herein by reference) (1).
10.4	1995 Employee Stock Purchase Plan, as amended (previously filed as Exhibit 99.4 to the Company's Current Report on Form 8-K, filed with the SEC on June 17, 2011, and incorporated herein by reference) (1).
10.5	Employment Letter Agreement by and between Idera Pharmaceuticals, Inc. and Louis J. Arcudi, III, Dated August 1, 2011(1).
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14 and 15d-14, as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14 and 15d-14, as adopted pursuant to Section 302 of Sarbanes-Oxley Act of 2002.
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS*	XBRL Instance Document
101.SCH*	XBRL Taxonomy Extension Schema
101.CAL*	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF*	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB*	XBRL Taxonomy Extension Labels Linkbase Document
101.PRE*	XBRL Taxonomy Extension Presentation Linkbase Document

† Confidential treatment requested as to portions of the exhibit. Confidential materials omitted and filed separately with the Securities and Exchange Commission.

* Pursuant to Rule 406T of Regulation S-T, the Interactive Data Files on Exhibit 101 hereto are deemed not filed or part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purposes of Section 18 of the Securities and Exchange Act of 1934, as amended, and otherwise are not subject to liability under those sections.

(1) Management contract or compensatory plan or arrangement.

Exhibit 10.1

Confidential Materials omitted and filed separately with the
Securities and Exchange Commission. Asterisks denote omissions.

Merck KGaA . Germany . Frankfurter Str. 250 . 64293 Darmstadt

VIA COURIER

Idera Pharmaceuticals, Inc.	Date	June 2, 2010
Steven J. Ritter, Ph.D., J.D.	Division/Dept.	Corporate Legal — CL-M
Vice President — Intellectual Property and Contracts	Care of	Jens Eckhardt — ns
167 Sidney Street	Phone	+49 — 61 51 — 72 23 98
Cambridge, MA 02139	Fax	+49 — 61 51 — 72 23 73
USA	E-Mail	jens.eckhardt@merck.de

Our license agreement dated December 18, 2007, effective February 4 2008 (the "Agreement")

Dear Steve,

It is recognized that Idera has met its obligations of delivering [**] Follow-on Compounds in accordance with Section 3.6 of the Agreement. Merck is actively characterizing these Follow-on Compounds toward a goal of selecting [**] for possible development. As this characterization is currently ongoing, Merck requests that Idera allow Merck to extend the period of time for selecting the Follow-on Compounds such that Merck's right to make a selection pursuant to Section 3.6 of the Agreement would expire on [**]. This addition time will enable Merck to further characterize the Follow-on Compounds and make a more informed decision in the selection process. During this additional time period, Idera's role in Merck's selection process is expected to be passive and no additional resources are expected to be provided by Idera under the terms of the Agreement.

If you are in agreement with the above please indicate so by returning the attached duplicate of this letter duly signed.

Very truly yours,

Merck KGaA		**Agreed:**
i.V.	i.V.	Idera Pharmaceuticals, Inc.
/s/ Astrid Perschl	/s/ Jens Eckhardt	/s/ Louis J. Arcudi
Dr. Astrid Perschl	Jens Eckhardt	Louis J. Arcudi, III

Exhibit 10.2

Confidential Materials omitted and filed separately with the
Securities and Exchange Commission. Asterisks denote omissions.

Merck KGaA . Germany . Frankfurter Str. 250 . 64293 Darmstadt

Idera Pharmaceuticals, Inc.	Date	19.05.2011
Steven J. Ritter, Ph.D., J.D.	Division/Dept.	Corp. Legal & Intel. Property / CL-S
Vice President — Intellectual Property and Contracts	Care of	Dr. Simone Heitz
167 Sidney Street	Phone	+49 61 51 72-2160
Cambridge, MA 02139	Fax	+49 61 51 72-2373
USA	E-Mail	simone.heitz@merck.de

Our license agreement dated December 18, 2007, effective February 4, 2008 (the "Agreement")

Dear Steve,

It is recognized that Idera has met its obligations of delivering [**] Follow-on Compounds in accordance with Section 3.6 of the Agreement. Merck is actively characterizing these Follow-on Compounds toward a goal of selecting [**] for possible development. As this characterization is currently ongoing, Merck requests that Idera allow Merck to extend the period of time for selecting the Follow-on Compounds such that Merck's right to make a selection pursuant to Section 3.6 of the Agreement would expire on [**]. This addition time will enable Merck to further characterize the Follow-on Compounds and make a more informed decision in the selection process based on additional preclinical experiments. During this additional time period, Idera's role in Merck's selection process is expected to be passive and no additional resources are expected to be provided by Idera under the terms of the Agreement.

If you are in agreement with the above please indicate so by returning the attached duplicate of this letter duly signed.

Very truly yours,

Merck KGaA		**Agreed:**
i.V.	i.V.	Idera Pharmaceuticals, Inc.
/s/ Astrid Perschl	/s/ Simone Heitz	/s/ Louis J. Arcudi
Dr. Astrid Perschl	Dr. Simone Heitz	Louis J. Arcudi, III

August 1, 2011

Louis J. Arcudi, III
4 Whitney Road
Hopedale, MA 01747

Dear Lou:

It is my pleasure to inform you that, effective as of the date of this Agreement (the "Effective Date") you shall have the additional position of Senior Vice President, Operations. In connection with your additional position, Idera Pharmaceuticals, Inc. (the "Company") desires to amend and restate the employment letter dated November 8, 2007 between you and the Company, as amended (the "Prior Agreement"), and to provide that, effective upon the Effective Date, your continued employment with the Company shall be on the terms set forth in this Agreement and the Prior Agreement shall be terminated and of no further force or effect.

1. **Employment.** You will be employed to serve on a full time basis as Chief Financial Officer and Senior Vice President, Operations of the Company, reporting solely to the Chief Executive Officer and performing such duties as are customarily assigned to a chief financial officer or senior vice president, operations, plus such other duties as may from time to time be assigned to you by the Chief Executive Officer. You agree to devote your full business time, best efforts, skill, knowledge, attention and energies to the advancement of the Company's business and interests and to the performance of your duties and responsibilities as an employee of the Company.

2. **Base Salary and Bonus.** Your annual base salary will be $315,000 per year, effective May 1, 2011, and shall be payable to you at periodic intervals in accordance with the Company's payroll practices for salaried employees. Such base salary may be adjusted from time to time in accordance with normal business practices and in the sole discretion of the Company. You shall also be eligible to receive, for each fiscal year of the Company ending during your employment with the Company, an annual bonus, whether pursuant to a formal bonus or incentive plan or program of the Company or otherwise. Such bonus, if any, will be approved by the Board of Directors or the Compensation Committee of the Board of Directors (together, the "Board") in its sole discretion and will be based on both individual and Company performance objectives as developed and determined by the Company in its sole discretion. Any bonus earned by you and approved by the Board under this Section 2 shall be paid to you no later than March 15th of the calendar year following the calendar year in which such bonus is earned and approved by the Board under this Section 2. All salary, bonus and other compensation payable to you pursuant to this Agreement shall be subject to applicable withholding taxes.

3. **Benefit Programs.** You may participate in any and all benefit programs that the Company may establish and make available to its employees from time to time, provided you are eligible under (and subject to all provisions of) the plan documents governing those programs. Such benefits may include medical, dental and retirement plans. Any benefits made available by the Company, and the rules, terms and conditions for participation in such benefit plans, may be changed by the Company at any time and from time to time without advance notice.

4. **Reimbursement of Expenses.** The Company shall reimburse you, in accordance with the Company's expense reimbursement policy, for all reasonable travel, entertainment and other expenses incurred or paid by you in connection with, or related to, the performance of your duties, responsibilities or services under this Agreement, upon presentation by you of appropriate documentation, expense statements, vouchers and/or such other supporting information as the Company may request and in accordance with Section 10(e) below.

5. **Termination of Employment Period.** Your employment by the Company pursuant to this Agreement shall terminate upon the occurrence of any of the following:

   (a) At the election of the Company, for Cause (as defined below), immediately upon written notice by the Company to you, which notice shall identify the Cause upon which the termination is based.

   (b) Upon your death or disability. As used in this Agreement, the term "disability" shall mean inability by you, due to a physical or mental disability, for a period of 90 days, whether or not consecutive, during any 360-day period to perform the services contemplated under this Agreement, with or without reasonable accommodation as that term is defined under state or federal law. A determination of disability shall be made by a physician satisfactory to both you and the Company, provided that if you and the Company do not agree on a physician, you and the Company shall each select a physician and these two together shall select a third physician, whose determination as to disability shall be binding on all parties;

   (c) At the election of either party, upon not less than fifteen days' prior written notice of termination.

6. **Effect of Termination.**

   (a) In the event your employment is terminated pursuant to Section 5(a), Section 5(b) or Section 5(c), the Company shall pay to you the compensation and benefits otherwise payable you under Section 2 through the last day of your actual employment by the Company.

   (b) In the event that the Company terminates your employment with the Company at any time without Cause pursuant to Section 5(c), then, subject to Section 6(e), the Company shall continue to pay you your then current base

salary for a period of three (3) months, payable in accordance with and at the times contemplated by the Company's then current payroll practices.

(c) Notwithstanding Section 6(b) above, and in lieu of any payment owed under Section 6(b), if any, in the event that the Company terminates you without Cause or you resign from employment with the Company for Good Reason upon a Change in Control (as defined below) or within the twelve (12) month period following the Change in Control, then, subject to Section 6(e), the Company shall continue to pay you your then current base salary for a nine-month period, payable in accordance with and at the times contemplated by the Company's then current payroll practices.

(d) Following a termination of your employment entitling you to severance payments under Section 6(b) or Section 6(c), and subject to Section 6(e), if you are eligible for and elect to continue receiving group medical and/or dental insurance under the continuation coverage rules known as COBRA, the Company will pay the share of the premium for such coverage that it pays for active and similarly-situated employees who receive the same type of coverage (single, family, or other) until the earlier of (i) the end of the period for which the Company is paying you your then current base salary pursuant to Section 6(b) or Section 6(c) above (as applicable, the "Severance Period") or (ii) the date your COBRA continuation coverage expires.

(e) Notwithstanding anything in this Section 6 to the contrary, the Company's obligations to make severance payments and provide benefits to you pursuant to this Section 6 shall be contingent upon your execution of a separation and release agreement (the "Release Agreement") in a form reasonably acceptable to the Company which Release Agreement must become irrevocable within 60 days (or such earlier date as the Release Agreement provides) following the date of your termination of employment. Such payments and benefits shall begin to be paid or provided in the first regular payroll period beginning after the Release Agreement becomes binding on you; provided, however, that if the 60th day after termination occurs in the calendar year following the year of your date of termination, the severance payments and benefits shall be paid or provided no earlier than January 1 of such subsequent calendar year (whether or not the Release Agreement is executed prior to such date. You must continue to comply with the covenants referenced in Section 7 to continue to receive severance benefits. The severance payments and benefits shall constitute your sole remedy in connection with the termination of your employment in the event of a termination of your employment by the Company without Cause or by you for Good Reason.

(f) For purposes of this Agreement, Cause shall mean (i) a material breach of any material term of this Agreement, (ii) a plea of guilty or nolo contendere to, or conviction of, a felony offense, (iii) repeated unexplained or unjustified absence, or refusals to carry out the lawful directions of the Board or (iv)

material breach of a fiduciary duty owed to the Company under this Agreement, provided that any action or inaction described by (i), (iii) or (iv), above, shall not be the basis of a termination of your employment with the Company for "Cause" unless the Company provided you with at least 20 days advance written notice specifying in reasonable detail the conduct in need of being cured and such conduct was not cured within the notice period or prior to termination.

(g) For purposes of this Agreement, a Change of Control shall mean the occurrence of any of the following events: (i) a change in the composition of the Board over a period of thirty-six consecutive months or less such that a majority of the members of the Board ceases to be comprised of individuals who are Continuing Members; for such purpose, a "Continuing Member" shall mean an individual who is a member of the Board on the date of this Agreement and any successor of a Continuing Member who is elected to the Board or nominated for election by action of a majority of Continuing Members then serving on the Board; (ii) any merger or consolidation that results in the voting securities of the Company outstanding immediately prior thereto representing (either by remaining outstanding or by being converted into voting securities of the surviving or acquiring entity) less than 60% of the combined voting power of the voting securities of the Company or such surviving or acquiring entity outstanding immediately after such merger or consolidation; (iii) any sale of all or substantially all of the assets of the Company; (iv) the complete liquidation or dissolution of the Company; or (v) the acquisition of "beneficial ownership" (as defined in Rule 13d-3 under the Exchange Act) of securities of the Company representing 50% or more of the combined voting power of the Company's then outstanding securities (other than through a merger or consolidation or an acquisition of securities directly from the Company) by any "person," as such term is used in Sections 13(d) and 14(d) of the Exchange Act, other than the Company, any trustee or other fiduciary holding securities under an employee benefit plan of the Company or any corporation owned directly or indirectly by the stockholders of the Company in substantially the same proportion as their ownership of stock of the Company; provided however that, where applied to compensation subject to Section 409A of the Internal Revenue Code and the guidance issued thereunder ("Section 409A"), any acceleration of or change in payment shall only apply (if required by Section 409A) if the Change of Control is also a change in control event described in Treasury Regulation 1.409A-3(i)(5).

(h) For purposes of this Agreement, Good Reason shall mean any action on the part of the Company not consented to by you in writing having the following effect or effects: (i) a material reduction in your base salary; (ii) a material diminution in your duties, responsibilities or authority as set forth in Section 1 of this Agreement or (iii) the Company's requiring you to perform your ongoing and regular services at a location more than 50 miles from the location you are then performing your ongoing and regular services. You must (A) give notice to the Company of your intention to resign for Good

Reason within 90 days after the occurrence of the event (or series of events) that you assert entitle you to resign for Good Reason, (B) state in that notice the condition that you consider to provide you with Good Reason to resign, (C) provide the Company with at least 30 days after you deliver your notice to cure the condition and (D) if the condition is not cured, resign for Good Reason on or prior to the 60th day after you deliver your notice.

7. **Invention, Non-Disclosure and Non-Competition Agreement.** You have previously executed an Invention, Non-Disclosure and Non-Competition Agreement with the Company and hereby ratify and confirm your ongoing obligations under such agreement.

8. **Company Policies and Procedures.** As an employee of the Company, you will be required to comply with all Company policies and procedures. Violations of the Company's policies may lead to immediate termination of your employment. Further, the Company's premises, including all workspaces, furniture, documents and other tangible materials, and all information technology resources of the Company (including computers, data and other electronic files, and all internet and e-mail) are subject to oversight and inspection by the Company at any time. Company employees should have no expectation of privacy with regard to any Company premises, materials, resources or information.

9. **Other Agreements and Governing Law.** You represent that you are not bound by any employment contract, restrictive covenant or other restriction preventing you from continuing in employment with or carrying out your responsibilities for the Company, or which is in any way inconsistent with the terms of this Agreement. Please note that this Agreement supersedes any and all prior or contemporaneous agreements, discussions and/or understandings, whether written or oral, relating to the subject matter of this Agreement or your employment with the Company, including without limitation the Prior Agreement which shall terminate as of the Effective Date. The resolution of any disputes under this Agreement will be governed by Massachusetts law.

10. **Compliance with Section 409A.** Subject to the provisions in this Section 10, any severance payments or benefits under this Agreement (including under Section 6 hereof) shall begin only upon the date of your "separation from service" (determined as set forth below) which occurs on or after the date of termination of your employment. The following rules shall apply with respect to distribution of the payments and benefits, if any, to be provided to you under this Agreement:

    (a) It is intended that each installment of the severance payments and benefits provided under this Agreement shall be treated as a separate "payment" for purposes of Section 409A. Neither the Company nor you shall have the right to accelerate or defer the delivery of any such payments or benefits except to the extent specifically permitted or required by Section 409A.

    (b) If, as of the date of your "separation from service" from the Company, you are not a "specified employee" (within the meaning of Section 409A),

then each installment of the severance payments and benefits shall be made on the dates and terms set forth in this Agreement.

(c) If, as of the date of your "separation from service" from the Company, you are a "specified employee" (within the meaning of Section 409A), then:

(i) Each installment of the severance payments and benefits due under this Agreement that, in accordance with the dates and terms set forth herein, will in all circumstances, regardless of when the separation from service occurs, be paid within the Short-Term Deferral Period (as hereinafter defined) shall be treated as a short-term deferral within the meaning of Treasury Regulation Section 1.409A-1(b)(4) to the maximum extent permissible under Section 409A. For purposes of this Agreement, the "Short-Term Deferral Period" means the period ending on the later of the fifteenth day of the third month following the end of your tax year in which the separation from service occurs and the fifteenth day of the third month following the end of the Company's tax year in which the separation from service occurs; and

(ii) Each installment of the severance payments and benefits due under this Agreement that is not described in Section 10(c)(i) above and that would, absent this subsection, be paid within the six-month period following your "separation from service" from the Company shall not be paid until the date that is six months and one day after such separation from service (or, if earlier, your death), with any such installments that are required to be delayed being accumulated during the six-month period and paid in a lump sum on the date that is six months and one day following your separation from service and any subsequent installments, if any, being paid in accordance with the dates and terms set forth herein; provided, however, that the preceding provisions of this sentence shall not apply to any installment of severance payments and benefits if and to the maximum extent that such installment is deemed to be paid under a separation pay plan that does not provide for a deferral of compensation by reason of the application of Treasury Regulation 1.409A-1(b)(9)(iii) (relating to separation pay upon an involuntary separation from service). Any installments that qualify for the exception under Treasury Regulation Section 1.409A-1(b)(9)(iii) must be paid no later than the last day of your second taxable year following your taxable year in which the separation from service occurs.

(d) The determination of whether and when your separation from service from the Company has occurred shall be made in a manner consistent with, and based on the presumptions set forth in, Treasury Regulation Section 1.409A-1(h). Solely for purposes of this Section 10(d), "Company" shall include all persons with whom the Company would be considered a single employer under Section 414(b) and 414(c) of the Code.

(e) All reimbursements and in-kind benefits provided under this Agreement shall be made or provided in accordance with the requirements of Section 409A to the extent that such reimbursements or in-kind benefits are subject to Section 409A, including, where applicable, the requirements that (i) any reimbursement is for expenses incurred during your lifetime (or during a shorter period of time specified in this Agreement), (ii) the amount of expenses eligible for reimbursement during a calendar year may not affect the expenses eligible for reimbursement in any other calendar year, (iii) the reimbursement of an eligible expense will be made on or before the last day of the calendar year following the year in which the expense is incurred and (iv) the right to reimbursement is not subject to set off or liquidation or exchange for any other benefit.

(f) Notwithstanding anything herein to the contrary, the Company shall have no liability to you or to any other person if the payments and benefits provided hereunder that are intended to be exempt from or compliant with Section 409A are not so exempt or compliant.

11. **Successors and Assigns.** This Agreement shall be binding upon and inure to the benefit of both parties and their respective successors and assigns, including any corporation with which or into which the Company may be merged or which may succeed to its assets or business; provided, however, that your obligations to the Company are personal and shall not be assigned by you.

12. **Acknowledgment.** You state and represent that you have had an opportunity to fully discuss and review the terms of this Agreement with an attorney. You further state and represent that you have carefully read this Agreement, understand the contents herein, freely and voluntarily assent to all of the terms and conditions hereof, and sign your name of your own free act.

13. **Miscellaneous.**

(a) No delay or omission by the Company in exercising any right under this Agreement shall operate as a waiver of that or any other right. A waiver or consent given by the Company on any one occasion shall be effective only in that instance and shall not be construed as a bar to or waiver of any right on any other occasion.

(b) The captions of the sections of this Agreement are for convenience of reference only and in no way define, limit or affect the scope or substance of any section of this Agreement.

(c) In case any provision of this Agreement shall be invalid, illegal or otherwise unenforceable, the validity, legality and enforceability of the remaining provisions shall in no way be affected or impaired thereby.

If you are in agreement with, and agree to, the terms under which you will continue to be employed by the Company, please sign the enclosed duplicate of this Agreement in the space provided below and return it to me.

Very truly yours,

By: /s/ Sudhir Agrawal
Name: Sudhir Agrawal
Title: Chief Executive Officer

The foregoing correctly sets forth the terms of my employment with Idera Pharmaceuticals, Inc. I am not relying on any representations other than as set forth above.

/s/ Louis J. Arcudi Date: 8-1-11
Louis J. Arcudi

EXHIBIT 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO EXCHANGE ACT RULES 13a-14 AND 15d-14, AS ADOPTED PURSUANT TO SECTION 302 OF SARBANES-OXLEY ACT OF 2002

I, Sudhir Agrawal, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Idera Pharmaceuticals, Inc.;

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.

Dated: August 5, 2011

/s/ SUDHIR AGRAWAL
Sudhir Agrawal
Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO EXCHANGE ACT RULES 13a-14 AND 15d-14, AS ADOPTED PURSUANT TO SECTION 302 OF SARBANES-OXLEY ACT OF 2002

I, Louis J. Arcudi, III certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Idera Pharmaceuticals, Inc.;

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.

Dated: August 5, 2011

/s/ LOUIS J. ARCUDI, III
Louis J. Arcudi, III
Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED
PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Idera Pharmaceuticals, Inc. (the "Company") for the period ended June 30, 2011 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Sudhir Agrawal, Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

A signed original of this written statement has been provided to Idera Pharmaceuticals, Inc. and will be retained by Idera Pharmaceuticals, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Dated: August 5, 2011

/s/ SUDHIR AGRAWAL
Sudhir Agrawal
Chief Executive Officer

EXHIBIT 32.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED
PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Idera Pharmaceuticals, Inc. (the "Company") for the period ended June 30, 2011 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Louis J. Arcudi, III, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

A signed original of this written statement has been provided to Idera Pharmaceuticals, Inc. and will be retained by Idera Pharmaceuticals, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Dated: August 5, 2011

/s/ LOUIS J. ARCUDI, III
Louis J. Arcudi, III
Chief Financial Officer