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

FORM 10-K/A

(Amendment No. 1)

(Mark One)

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

For the Fiscal Year Ended December 31, 2008

OR

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

Commission File Number: 001-31918

IDERA PHARMACEUTICALS, INC.

(Exact name of Registrant as specified in its certificate of incorporation)

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

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

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

Title of Class:	**Name of Each Exchange on Which Registered:**
Common Stock, $.001 par value (Including Associated Preferred Stock Purchase Rights)	**NASDAQ Global Market**

Securities registered pursuant to Section 12(g) of the Act: None

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

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

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

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

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

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

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

The approximate aggregate market value of the voting stock held by non-affiliates of the registrant was $321,536,000 based on the last sale price of the registrant's common stock as reported on the NASDAQ Global Market on June 30, 2008. As of February 26, 2009, the registrant had 23,422,525 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Proxy Statement with respect to the Annual Meeting of Stockholders to be held on June 16, 2009 are incorporated by reference into Items 10, 11, 12, 13 and 14 of Part III of this Form 10-K.

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EXPLANATORY NOTE

Idera Pharmaceuticals, Inc. ("the Company") is filing this Amendment No. 1 to its Annual Report on Form 10-K for the year ended December 31, 2008, which was originally filed with the Securities and Exchange Commission on March 11, 2009 (the "Annual Report"), for the sole purpose of revising the portions of an exhibit for which the Company requested confidential treatment. The Exhibit Index is also being amended to add new officer certifications in accordance with Rule 13a-14(a) of the Exchange Act. This Amendment No. 1 continues to speak as of the date of the original filing of the Annual Report, and the Company has not updated the disclosures contained therein to reflect any events that occurred at a later date.

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Exhibit Index

Exhibit Number	Description	Filed with this Form 10-K/A	Incorporated by Reference		
			Form or Schedule	Filing Date with SEC	SEC File Number
3.1	Restated Certificate of Incorporation of Idera Pharmaceuticals, Inc., as amended.		10-Q	August 1, 2008	001-31918
3.2	Amended and Restated Bylaws of Idera Pharmaceuticals, Inc.		S-1	November 6, 1995	33-99024
3.3	Certificate of Ownership and Merger.		8-K	September 15, 2005	001-31918
4.1	Specimen Certificate for shares of Common Stock, $.001 par value, of Idera Pharmaceuticals, Inc.		S-1	December 8, 1995	33-99024
4.2	Rights Agreement dated December 10, 2001 by and between Idera Pharmaceuticals, Inc. and Mellon Investor Services LLC, as rights agent.		S-2	October 10, 2003	333-109630
4.3	Amendment No. 1 to Rights Agreement dated as of August 27, 2003 between the Company and Mellon Investor Services LLC, as rights agent.		8-K	August 29, 2003	000-27352
4.4	Amendment No. 2 to Rights Agreement dated as of March 24, 2006 between the Company and Mellon Investor Services LLC, as rights agent.		8-K	March 29, 2006	001-31918
4.5	Amendment No. 3 to Rights Agreement dated January 16, 2007 between the Company and Mellon Investor Services, LLC, as rights agent.		8-K	January 17, 2007	001-31918
10.1††	2008 Stock Incentive Plan.		8-K	June 10, 2008	001-31918
10.2††	2005 Stock Incentive Plan, as amended		10-Q	August 14, 2006	001-31918
10.3††	1995 Stock Option Plan.		S-1	November 6, 1995	33-99024
10.4††	1995 Director Stock Option Plan.		8-K	June 10, 2008	001-31918
10.5††	1995 Employee Stock Purchase Plan, as amended.		8-K	June 10, 2008	001-31918
10.6††	Employment Agreement dated October 19, 2005 between Idera Pharmaceuticals, Inc. and Dr. Sudhir Agrawal.		10-Q	November 9, 2005	001-31918
10.7††	Amendment, dated December 17, 2008 to Employment Agreement by and between the Idera Pharmaceuticals, Inc. and Dr. Sudhir Agrawal dated October 19, 2005.		8-K	December 18, 2008	001-31918
10.8††	Employment Offer Letter dated November 8, 2007 by and between Idera Pharmaceuticals, Inc. and Louis J. Arcudi, III.		10-K/A	December 24, 2008	001-31918
10.9††	Amendment dated December 17, 2008 to Employment Offer Letter by and between Idera Pharmaceuticals, Inc. and Louis J. Arcudi, III, Dated November 8, 2007.		8-K	December 18, 2008	001-31918
10.10††	Non-Employee Director Compensation Program Effective January 1, 2008.		10-K	March 11, 2008	001-31918
10.11††	Amended and Restated 1997 Stock Incentive Plan.		10-Q	May 15, 2001	000-27352
10.12††	Non-Employee Director Nonstatutory Stock Option Agreement Granted under 1997 Stock Incentive Plan.		10-K	March 25, 2005	001-31918

Exhibit Number	Description	Filed with this Form 10-K/A	Incorporated by Reference		
			Form or Schedule	Filing Date with SEC	SEC File Number
10.13††	Form of Incentive Stock Option Agreement Granted Under the 2005 Stock Incentive Plan.		8-K	June 21, 2005	001-31918
10.14††	Form of Nonstatutory Stock Option Agreement Granted Under the 2005 Stock Incentive Plan.		8-K	June 21, 2005	001-31918
10.15††	Form of Restricted Stock Agreement Under the 2005 Stock Incentive Plan.		10-Q	August 1, 2007	001-31918
10.16††	Form of Incentive Stock Option Agreement Granted Under the 2008 Stock Incentive Plan.		8-K	June 10, 2008	001-31918
10.17††	Form of Nonstatutory Stock Option Agreement Granted Under the 2008 Stock Incentive Plan.		8-K	June 10, 2008	001-31918
10.18††	Form of Nonstatutory Stock Option Agreement (Non-Employee Directors) Granted Under the 2008 Stock Incentive Plan.		8-K	June 10, 2008	001-31918
10.19††	Form of Restricted Stock Agreement Under the 2008 Stock Incentive Plan.		8-K	June 10, 2008	001-31918
10.20††	Executive Stock Option Agreement for 1,260,000 Options effective as of July 25, 2001 between Idera Pharmaceuticals, Inc. and Dr. Sudhir Agrawal.		10-Q	October 24, 2002	000-27352
10.21†	Executive Stock Option Agreement for 550,000 Options effective as of July 25, 2001 between Idera Pharmaceuticals, Inc. and Dr. Sudhir Agrawal.		10-Q	October 24, 2002	000-27352
10.22††	Executive Stock Option Agreement for 500,000 Options effective as of July 25, 2001 between Idera Pharmaceuticals, Inc. and Dr. Sudhir Agrawal.		10-Q	October 24, 2002	000-27352
10.23††	License Agreement dated February 21, 1990 and restated as of September 8, 1993 between Idera Pharmaceuticals, Inc. and University of Massachusetts Medical Center.		S-1	November 6, 1995	33-99024
10.24†	Amendment No. 1 to License Agreement, dated as of February 21, 1990 and restated as of September 8, 1993, by and between University of Massachusetts Medical Center and Idera Pharmaceuticals, Inc., dated as of November 26, 1996.		10-Q	August 14, 1997	000-27352
10.25†	Collaboration and License Agreement by and between Isis Pharmaceuticals, Inc., and Idera Pharmaceuticals, Inc., dated May 24, 2001.		10-Q	August 20, 2001	000-27352
10.26	Amendment No. 1 to the Collaboration and License Agreement, dated as of May 24, 2001 by and between Isis Pharmaceuticals, Inc. and Idera Pharmaceuticals, Inc., dated as of August 14, 2002.		10-K	March 31, 2003	000-27352
10.27	Master Agreement relating to the Cross License of Certain Intellectual Property and Collaboration by and between Isis Pharmaceuticals, Inc. and Idera Pharmaceuticals, Inc., dated May 24, 2001.		10-Q	August 20, 2001	000-27352
10.28	Unit Purchase Agreement by and among Idera Pharmaceuticals, Inc. and certain persons and entities listed therein, dated April 1, 1998.		10-K	April 1, 2002	000-27352

Exhibit Number	Description	Filed with this Form 10-K/A	Incorporated by Reference		
			Form or Schedule	Filing Date with SEC	SEC File Number
10.29	Registration Rights Agreement, dated as of August 28, 2003 by and among Idera Pharmaceuticals, Inc., the Purchasers and the Agents.		S-2	October 10, 2003	333-109630
10.30	Form of Common Stock Purchase Warrant issued to purchasers of units in a private placement on August 28, 2003 and August 29, 2003.		S-2	October 10, 2003	333-109630
10.31	Form of Common Stock Purchase Warrant issued to selected dealers and placement agents on August 28, 2003 in connection with a private placement.		S-2	October 10, 2003	333-109630
10.32	Registration Rights Agreement, dated August 27, 2004 by and among Idera Pharmaceuticals, Inc., Pillar Investment Limited and Purchasers.		10-Q	November 12, 2004	001-31918
10.33	Form of Warrants issued to investors and the placement agent in connection with Idera Pharmaceuticals, Inc. August 27, 2004 financing.		10-Q	November 12, 2004	001-31918
10.34†	Research Collaboration and Option Agreement by and between Idera Pharmaceuticals, Inc. and Novartis International Pharmaceutical Ltd.		10-Q	August 9, 2005	001-31918
10.35†	License, Development and Commercialization Agreement by and between Idera Pharmaceuticals, Inc and Novartis International Pharmaceutical Ltd.		10-Q	August 9, 2005	001-31918
10.36	Engagement letter, dated May 20, 2005, by and among Idera Pharmaceuticals, Inc. and Pillar Investment Limited.		10-Q	August 9, 2005	001-31918
10.37	Consulting Agreement dated as of January 1, 2008 between Idera Pharmaceuticals, Inc. and Karr Pharma Consulting, LLC.		10-K	March 11, 2008	001-31918
10.38	Amendment dated December 16, 2008 to Consulting Agreement dated as of January 1, 2008 between Idera Pharmaceuticals, Inc. and Karr Pharma Consulting, LLC.		10-K	March 11, 2009	001-31918
10.39	Registration Rights Agreement dated as of May 20, 2005 by and among Idera Pharmaceuticals, Inc., Purchasers and Pillar Investment Limited.		10-Q	August 9, 2005	001-31918
10.40	Common Stock Purchase Warrant issued to Pillar Investment Limited in connection with the May 20, 2005 Financing.		10-Q	August 9, 2005	001-31918
10.41	Common Stock Purchase Agreement, dated March 24, 2006, by and among the Company and the Investors named therein.		8-K	March 29, 2006	001-31918
10.42	Registration Rights Agreement, dated March 24, 2006, by and among the Company and the Investors named therein.		8-K	March 29, 2006	001-31918
10.43	Amendment No. 1 to the Common Stock Purchase Agreement, dated March 24, 2006, by and among the Company and the Investors named therein.		10-Q	August 14, 2006	001-31918
10.44	Form of Warrant issued to Investors in the Company's March 24, 2006 Private Financing.		8-K	March 29, 2006	001-31918
10.45	Common Stock Purchase Agreement, dated March 24, 2006, by and between the Company and Biotech Shares Ltd.		8-K	March 29, 2006	001-31918

Exhibit Number	Description	Filed with this Form 10-K/A	Incorporated by Reference		
			Form or Schedule	Filing Date with SEC	SEC File Number
10.46	Amendment No. 1 to the Common Stock Purchase Agreement, dated March 24, 2006, by and among the Company and Biotech Shares Ltd.		10-Q	November 13, 2006	001-31918
10.47	Engagement Letter, dated March 24, 2006, between the Company and Youssef El Zein.		8-K	March 29, 2006	001-31918
10.48	Registration Rights Agreement, dated March 24, 2006, by and among the Company, Biotech Shares Ltd. and Youssef El Zein.		8-K	March 29, 2006	001-31918
10.49	Warrant issued to Biotech Shares Ltd. on March 24, 2006.		8-K	March 29, 2006	001-31918
10.50†	Exclusive License and Research Collaboration Agreement by and between Merck & Co., Inc. and Idera Pharmaceuticals, Inc., dated December 8, 2006.		8-K	March 6, 2007	001-31918
10.51	Amendment No. 1 to the Registration Rights Agreement dated March 24, 2006, by and among the Company and Biotech Shares Ltd.		10-Q	August 14, 2006	001-31918
10.52	Promissory Note dated June 12, 2007 made by Idera Pharmaceuticals, Inc. in favor of General Electric Capital Corporation.		10-Q	August 1, 2007	001-31918
10.53	Master Security Agreement dated June 12, 2007 by and between Idera Pharmaceuticals, Inc. and General Electric Capital Corporation.		10-Q	August 1, 2007	001-31918
10.54†	License Agreement by and between Merck KGaA and Idera Pharmaceuticals, Inc., dated December 18, 2007.		10-K	March 11, 2008	001-31918
10.55†	Amendment dated February 12, 2009 to the License Agreement by and between Merck KGaA and Idera Pharmaceuticals, Inc., dated December 18, 2007.	X			
23.1	Consent of Independent Registered Public Accounting Firm.		10-K	March 11, 2009	001-31918
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.		10-K	March 11, 2009	001-31918
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.		10-K	March 11, 2009	001-31918
31.3	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.	X			
31.4	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.	X			
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.		10-K	March 11, 2009	001-31918

Exhibit Number	Description	Filed with this Form 10-K/A	Incorporated by Reference		
			Form or Schedule	Filing Date with SEC	SEC File Number
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.		10-K	March 11, 2009	001-31918

† Confidential treatment granted as to certain portions, which portions are omitted and filed separately with the Commission.

†† Management contract or compensatory plan or arrangement required to be filed as an Exhibit to the Annual Report on Form 10-K.

SIGNATURE

Pursuant to the requirements of Section 13 or 15(d) 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, on this 9th day of October 2009.

IDERA PHARMACEUTICALS, INC.

By: /s/ Sudhir Agrawal
Sudhir Agrawal
President, Chief Executive Officer
and Chief Scientific Officer

Exhibit 10.55

Execution Version

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

Amendment To The License Agreement

This Amendment, effective the 12th day of February, 2009, ("**Amendment Date**") is by and between Idera Pharmaceuticals, Inc., having a place of business located at 167 Sidney Street, Cambridge, Massachusetts 02139 ("**Idera**") and Merck KGaA, a general partnership limited by shares organized under German law having a place of business at Frankfurter Strasse 250, 64293 Darmstadt, Germany ("**Merck**"). Idera and Merck may be referred to collectively as "Parties."

Background

The Parties entered into a License Agreement dated 18 December 2007 ("**License Agreement**"), which sets forth certain terms and conditions for the Parties to research, develop and commercialize immune modulatory oligonucleotides in the field of cancer.

The Parties now desire to amend the License Agreement to allow Idera to continue to act as the sponsor (as such term is defined in 21 CFR § 312.3(b), hereinafter "**Sponsor**") of certain clinical trials until such time as Merck has filed an Investigational New Drug application with the US Food and Drug Administration and assumes the Sponsor role under the Merck IND.

Now, Therefore, the Parties hereby agree as follows:

1. Section 1.17, definition of "Development Costs" is hereby amended and restated in its entirety as follows:

"**Development Costs**" means those Out-of-Pocket Expenses incurred by Licensor after the Effective Date that are directly and solely attributable to the achievement of work or activities performed by or on behalf of Licensor after the Effective Date toward the completion of the On-Going Trials or the Future Trials.

2. Section 3.4, of the License Agreement, Licensor Support in the Development, is hereby amended and restated in its entirety as follows:

3.4(a). **Licensor Support in the Development.** For a period of [**] starting from Effective Date, Licensor shall make its employees that are knowledgeable on the Compound or Follow-On Compound, its properties and functions, reasonably available to Merck, at Licensor's facilities, for scientific and technical explanations, advice and support, that may reasonably be required by Merck, relating to the Development and registration of the Compound, Follow-On Compound and the Licensed Products (the **"Development Support"**). The Development Support shall be provided by Licensor [**] during such first [**] following the Effective Date. Thereafter, during the remaining [**] period, Merck shall reimburse Licensor for Licensor's reasonable Out-of-Pocket Expenses incurred in providing the Development Support should Merck require any of such Development Support, subject however to Licensor providing Merck with documented evidence of such Out-of-Pocket Expenses having been incurred.

3.4(b). **Licensor Sponsorship and Conduct of Clinical Trials.** Notwithstanding Section 2.3 and 3.4(a), during the Interim Period Licensor agrees to remain the Sponsor for the On-Going Trials and for additional Clinical Trials that the Parties agree to conduct during the Interim Period, including the study in [**] ("**Future Trials**" and together with the On-Going Trials, collectively, the "TLR9 Agonist Trials"). For purposes of this Agreement, the "Interim Period" means that period of time commencing on the Effective Date and ending on the date that is the earlier of (i) the date on which the FDA has approved the IND submitted by Merck for conducting clinical trials with Licensor's TLR9 agonists (the "**Merck TLR9 Agonists IND**") and Merck has assumed the role of Sponsor for all on-going TLR9 Agonist Trials or (b) the date that is twenty-four (24) months from the Effective Date. The following provisions shall apply during the Interim Period in connection with the conduct of the TLR9 Agonist Trials:

(1) Such trials shall be conducted under Licensor's IND Application Number[**] or IND Application Number [**].

(2) Licensor's acts shall be in compliance with Section 3.2.

(3) The Parties shall establish an agreement for each TLR9 Agonist Trial that sets forth each Party's responsibilities (the "**Charter Agreements**").

(4) The Charter Agreements shall, at a minimum, identify a process for developing and executing the protocol for each TLR9 Agonist Trial and set forth a trial budget to be paid by Merck, which shall include after [**] the reimbursement by Merck of Licensor's internal costs, up to an agreed upon limit and at an agreed upon rate to be set forth in the budget attached to the respective Charter Agreement and pre-approved Development Costs in conducting such trial (each a "**Trial Budget**").

(5) Merck shall have responsibility for determining if any Future Trial is to be conducted and for defining objectives of any Future Trial.

(6) Merck shall seek Licensor's input on each Future Trial.

(7) If requested by Merck during the Interim Period, Licensor agrees to initiate and conduct the [**] Trial during the Interim Period, subject to the terms of a mutually agreed Charter Agreement, unless Licensor, in its reasonable discretion, determines that it is unable to conduct such trial, wherein such determination takes into account [**] under the relevant Charter Agreement.

(8) For each Future Trial [**] that Merck desires to initiate during the Interim Period, Licensor agrees to initiate and conduct such Future Trial during the Interim Period, subject to the terms of a mutually agreed Charter Agreement, unless Licensor, in its sole discretion, determines that it is unable to conduct such trial. Such inability determination shall take into [**] under the relevant Charter Agreement.

(9) Licensor shall have the right to take, at its sole discretion after appropriate discussions with Merck under the Charter Agreements, any actions it reasonably deems necessary or desirable to fulfill the regulatory requirements appropriate to the role of Sponsor for any or all TLR9 Agonist Trials.

(10) For the avoidance of doubt, if the Initiation of a Future Trial by Idera would qualify as a milestone payment triggering event as set forth in Section 5.2 if

such Initiation had been undertaken by Merck, such milestone shall be considered achieved as if Merck achieved such milestone and all payments resulting therefrom shall be due and payable by Merck to Idera according to the Agreement.

(11) Notwithstanding Section 3.4(b)(10), the Parties agree that the Initiation of the [**] Trial shall in no event be considered [**].

(12) Licensor's acts pursuant to the provisions of this Section 3.4(b) shall not be considered a breach of Section 2.6 or Section 3.1.

(13) Merck's acts pursuant to the provisions of this Section 3.4(b), as well as the fact that Merck [**], shall not be considered a breach of Section 3.2 or Section 3.9.

(14) Licensor has entered into a contract with [**] pursuant to which [**] is to perform certain labeling, storage, packing and distribution activities related to [**] on behalf of Licensor. During the Interim Period and in accordance with Merck's direction, Licensor shall manage the labeling, packing and distribution of [**] vials of [**] via [**] for purposes of (i) completion of transfer of the manufacturing technology as provided for under this License Agreement, (ii) the On-Going Trials and (iii) any Future Trials. Licensor shall not be responsible for manufacturing any amounts of [**] in addition to the [**] vials referenced in this clause (14). To the extent that Licensor follows the direction given by Merck pursuant to this clause (14), Merck shall be accountable for the allocation of such vials to the transfer of the manufacturing technology activities, the On-Going Trials and any Future Trials

(15) With respect to each TLR9 Agonist Trial, Licensor shall own the corresponding clinical data generated by that Trial (the "Clinical Data") until such time as Merck shall [**]. Merck shall have a fully paid, royalty free, exclusive license to use, disclose and copy the Clinical Data related to such Trial to bring about the purposes of this License Agreement, the Charter Agreements and the filing of the Merck TLR9 Agonists IND. Licensor shall retain the right to use, disclose and copy (i) any and all Clinical Data during the Interim Period as necessary to comply with applicable laws, rules and regulations and to publish in accordance with Section 7.2 of the License Agreement, (ii) any safety data in connection with contractual pharmacovigilance obligations to third parties and (iii) the final study report for [**] to the extent necessary to comply with [**]. In connection with the foregoing and to the fullest extent permitted by law, Licensor shall authorize any contract research organization, data management company or central laboratory providing services in respect of a TLR9 Agonist Trial to concurrently disclose the related Clinical Data to Merck or Merck's designee. In respect of Clinical Data for a TLR9 Agonist Trial generated by a Third-Party vendor other than a contracts research organization, data management company or central laboratory, Licensor shall promptly and timely disclose Clinical Data to Merck after receipt thereof from such Third-Party vendor. Without additional action or payment of an additional fee, ownership of the Clinical Data will transfer from

Licensor to Merck at the end of the Interim Period; provided, that Licensor shall have a fully paid, royalty free, non-exclusive license to use and disclose (i) the Clinical Data for purposes of any required regulatory filings in connection with a TLR9 Agonist Trial or to respond to any regulatory inquiries related to the period when Licensor was Sponsor of such Trial and (ii) any safety data that are generated from a TLR9 Agonist Trial for Licensor's and its collaborators' and their affiliates' regulatory purposes.

(16) Licensor agrees that during such time that Licensor is owner of any Clinical Data, such ownership rights shall be subject to and to the extent applicable, limited by, the terms of this License Agreement, including Section 7.2(c).

(17) Strategic Development Committee.

(i) The Parties shall establish a committee for the purpose of reviewing and exchanging information regarding the general direction and progress of the TLR9 Agonist Trials during the Interim Period (the "Strategic Development Committee" or "SDC"). Each Party shall designate two (2) individuals to be its authorized representatives on the Strategic Development Committee (each a "SDC Representative"). Merck shall also appoint one of the SDC Representatives it has designated as the chair of the Strategic Development Committee (the "SDC Chair"). The initial SDC Representatives and chairperson are set forth on Schedule 3.4(b). Each Party may change its SDC Representatives, or Merck may change its designee for the SDC Chair, as the case may be, from time to time, effective upon notice to the other Party of such change. Additional representatives or consultants may from time to time, by mutual consent of the Parties, be invited to attend SDC meetings. Except as expressly set forth in clauses (ii) and (iii) below, the SDC shall function solely as a forum for reviewing and exchanging information regarding the progress and overall direction of the TLR9 Agonist Trials and not as a decision-making body. The SDC shall meet in accordance with a schedule established by the SDC Chair (taking in consideration the availability of the SDC Representatives), but no less frequently than once a month during the Interim Period and as needed to address an Unresolved Issue as provided under clauses (ii) and (iii) below. Such meetings will occur via teleconference, videoconference or in-person, as determined by the SDC Chair. For an in-person SDC meeting held more than fifty (50) miles outside of Boston, Massachusetts, Merck will reimburse Licensor, in accordance with and subject to its corporate travel and expense policies, for the reasonable travel expenses incurred by Licensor's SDC Representatives in connection with their attendance of such meeting outside of Boston. The SDC Chair shall ensure that relevant results of such SDC meetings are recorded and approved by all SDC Representatives.

(ii) A specific study team comprised of representatives designated by both Licensor and Merck will be formed in respect of each TLR9 Agonist Trial (each a "Study Team"). With respect to each TLR9 Agonist Trial, the applicable Study Team will be charged with certain decision-making responsibilities related to that Trial as set forth in the Trial's Charter Agreement. Each Charter Agreement will set out the procedures pursuant to which an unresolved issue, requiring the unanimous consent of the Study Team members, may be brought before the Strategic Development Committee (each an "Unresolved Issue"). In the event that the SDC Representatives receive written notice of an Unresolved Issue together with a summary thereof and the action to be decided upon (an "Issue Summary"), the SDC Representatives shall discuss the Unresolved Issue and shall meet with respect thereto if one or more of them believes a meeting or meetings to be useful. If the SDC Representatives do not resolve the matter within thirty (30) days following receipt by them of the Issue Summary (or such lesser or longer period as they may agree is appropriate for their discussions), then the SDC Chair shall, after due and reasonable consideration and subject to clause (iii) below, make the final decision regarding the Unresolved Issue unless such issue is a Safety Issue as defined below. In that case, Licensor's SDC Representatives shall, after due and reasonable consideration, including consultation with the safety team representatives assigned to the relevant Study, make the final decision regarding such Safety Issue. Licensor's SDC Representatives shall promptly inform the SDC Chair in writing of any final decisions regarding Safety Issues reached in accordance with this clause (ii). For purposes of this clause (ii), a Safety Issue is (A) any strategy decision regarding a TLR9 Agonist Trial (including a decision to terminate any such Trial) or material change to a TLR9 Agonist Trial protocol that is under consideration which arises from safety findings or other safety matters related to a Compound or (B) any change to a TLR9 Agonist Trial protocol that could reasonably be expected to significantly alter the foreseeable risks or discomforts to a TLR9 Agonist Trial subject. The SDC Chair shall provide the applicable Study Team written notice, with a copy to all other SDC Representatives, of any final decision regarding an Unresolved Issue reached by the Strategic Development Committee pursuant to this clause (ii).

(iii) Notwithstanding any of the foregoing, the SDC Chair shall not make a final determination regarding an Unresolved Issue the implementation of which could reasonably be expected to have a material adverse effect on Licensor due to any liabilities or obligations under laws, rules or regulations applicable to Licensor as Sponsor of the relevant TLR9 Agonist Trial (a "Sponsor

MAE"). For purposes of the foregoing, (A) during the course of Strategic Development Committee discussions regarding an Unresolved Issue, each of the Parties should endeavor to discuss specific proposals to resolve the relevant issue and Licensor shall endeavor in good faith to identify any aspect of a proposal the implementation of which could reasonably be expected to result in a Sponsor MAE and (B) the Merck SDC Representatives shall provide Licensor written notice of any proposed final determination ("Proposed Final Determination") to be made hereunder ("Final Determination Notice") before its implementation. A Licensor's SDC Representative shall notify the Merck SDC Representatives in writing within five (5) Business Days of receipt of a Final Determination Notice if in Licensor's reasonable opinion, a Proposed Final Determination could result in a Sponsor MAE. In the absence of any such notice within such five Business Day period, the Proposed Final Determination shall become final and shall be implemented by written notification to the applicable Study Team. In the event a Licensor's SDC Representative delivers such notice with respect to a Proposed Final Determination, Merck shall not take any steps to implement the Proposed Final Determination and may submit to Licensor SDC Representatives another Proposed Final Determination that will be subject to this clause (iii).

3. Section 9.1, Indemnification by Merck, shall be amended and restated in its entirety as follows:

9.1 **Indemnification by Merck**. Merck shall indemnify, defend and hold Licensor and its Affiliates and each of the respective employees, officers, directors and agents (the "**Licensor Indemnitees**") harmless from and against any and all liability, damage, loss, cost or expense (including reasonable attorneys' fees) to the extent arising out of Third Party claims or suits related to (a) Merck's acts or omissions, during the Interim Period, in connection with the On-Going Trials or the Future Trials, (b) the Development, manufacture, use or Commercialization of a Compound, Follow-On Compound or Licensed Product by or on behalf of Merck, its Affiliates or Sublicensees, (c) the use, handling or storage of any Licensor Materials by or on behalf of Merck, its Affiliates or Sublicensees, (d) Merck's performance of its obligations under this Agreement, (e) breach by Merck of its representations, warranties or covenants set forth in this Agreement; provided, however, that Merck's obligations pursuant to this Section 9.1 shall not apply to the extent such claims or suits (i) result from the negligence or willful misconduct of any of the Licensor Indemnitees or (ii) arise out of a breach by Licensor of its representations, warranties or covenants set forth in this Agreement.

4. Section 9.2, Indemnification by Licensor, shall be amended and restated in its entirety as follows:

9.2. **Indemnification by Licensor**. Licensor shall indemnify, defend and hold Merck and its Affiliates and each of their respective agents, employees, officers and directors (the "**Merck Indemnitees**") harmless from and against any and all liability, damage, loss, cost or expense (including reasonable attorney's fees) to the extent arising out of Third Party claims or suits related to (a) Licensor's acts or omissions, subject to the delegation of responsibilities to Merck or its Affiliates under any applicable Charter Agreement, in conducting the On-Going Trials or the Future Trials prior to and during the Interim Period**,** (b) the Development, manufacture, use or Commercialization of Compounds or Follow-On Compounds by or on behalf of Licensor, its Affiliates or licensees, (c) Licensor's performance of its obligations under this Agreement, (d) breach by Licensor of its representations, warranties or covenants set forth in this Agreement, or (e) the matters set forth in paragraph 1 of the letter from Licensor to Merck dated December 17, 2007; provided, however, that Licensor's obligations pursuant to this Section 9.2 shall not apply to the extent such claims or suits (i) result from the negligence or willful misconduct of any of the Merck Indemnitees or (ii) arise out of a breach by Merck of its representations, warranties or covenants set forth in this Agreement.

5. Section 9.5, Insurance, shall be amended and restated in its entirety as follows:

9.5 **Insurance**. During the Interim Period and with respect to each TLR9 Agonist Trial, Licensor shall obtain and maintain, occurrence-form, product liability insurance with a clinical trials endorsement, or clinical trials insurance, in an amount that is agreed by Licensor and Merck as reasonable and customary in the United States pharmaceutical and biotechnology industries for companies engaged in comparable activities. Merck agrees to reimburse Licensor for the cost incurred by Licensor in obtaining such insurance, up to the amount set forth as insurance expense payable or reimbursable by Merck set forth in the applicable Trial Budget. After the Interim Period, until expiration or termination of the Term, each Party shall bear its own costs of obtaining and maintaining occurrence-form, product liability insurance with a clinical trials endorsement, or clinical trials insurance (including self-insured arrangements), in amounts that are reasonable and customary in the United States pharmaceutical and biotechnology industry for companies engaged in comparable activities. It is understood and agreed that this insurance shall not be construed to limit either Party's liability with respect to its indemnification obligations hereunder. Each Party will, except to the extent self insured as permitted under this Section 9.5, provide to the other Party upon request a certificate evidencing the insurance such Party is required to obtain and keep in force under this Section 9.5. To the extent possible under each Party's respective insurance plans, each Party will notify the other Party at least thirty (30) days prior to the expiration or cancellation of such insurance, or any reduction in coverage thereunder.

6. The Schedules to the License Agreement are hereby amended with the addition of Schedule 3.4(b) attached hereto.

7. All other terms and conditions of the License Agreement shall remain in full force and effect.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the Parties have executed this Amendment as of the Amendment Date.

Idera Pharmaceuticals, Inc.

By: /s/ Louis Arcudi, III
Name: Louis Arcudi, III
Title: Chief Financial Officer
Date: 11 Feb 2009

Merck KGaA

By: /s/ Dr. Claudia [illegible]
Name: Dr. Claudia [illegible]
Title:
Date: 13 Feb 2009

By: /s/ Jens Eckhardt
Name: Jens Eckhardt
Title: Legal Counsel
Date: 13 Feb 2009

Schedule 3.4(b)
Strategic Development Committee Members

Idera SDC Representatives: [**]
Merck SDC Representative: [**]
Merck SDC Representative/SDC Chair: [**]

17 December 2007 **CONFIDENTIAL**

Jens Eckhardt
Associate General Counsel
Merck Serono Legal Department
MERCK KGaA
Frankfurter Str. 250
D-64293 Darmstadt Germany

Dear Jens:

This letter is provided for the purpose of formally disclosing certain matters to Merck KGaA ("Merck") in connection with a License Agreement dated December 18, 2007 (the "Agreement") by and between Idera Pharmaceuticals, Inc. ("Idera") and Merck. This letter constitutes Confidential Information of Idera under the Agreement.

1. Idera's U.S. Patent Application Serial No. 10/846,167 ('167 application), filed 14 May 2004, names only Idera Pharmaceuticals employees as inventors. Idera's outside patent counsel performed an inventorship determination at the time of filing the '167 application. Idera has reviewed this inventorship determination in light of recent communications from the University [**] that suggested one of [**] employees may be an inventor on the '167 application. Based upon these communications, no change has been made to the inventorship of the '167 application. Idera will use Commercially Reasonable Efforts to contest all claims raised by [**] or the said employee of [**] to the '167 application and/or any patent rights corresponding thereto (such as PCT/US2004/015313, published as WO 2004/103301, and all patent rights derived therefrom) and bear all costs related thereto.

[**]

Sincerely,

Steven Ritter, Ph.D., J.D.
Intellectual Property Counsel

Exhibit 31.3

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, Chief Executive Officer of Idera Pharmaceuticals, Inc., certify that:

1. I have reviewed this Amendment No. 1 on Form 10-K/A of Idera Pharmaceuticals, Inc.; and

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.

Dated: October 9, 2009

/s/ Sudhir Agrawal
Sudhir Agrawal
Chief Executive Officer

Exhibit 31.4

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, Chief Financial Officer of Idera Pharmaceuticals, Inc., certify that:

1. I have reviewed this Amendment No. 1 on Form 10-K/A of Idera Pharmaceuticals, Inc.; and

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.

Date: October 9, 2009

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