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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, 2006,

or

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

For transition period from \_\_\_\_\_.

Commission File Number 001-31918

**IDERA PHARMACEUTICALS, INC.**

*(Exact name of registrant as specified in its charter)*

**Delaware**

*(State or other jurisdiction of  
Incorporation or organization)*

**04-3072298**

*(I.R.S. Employer Identification  
Number)*

**345 Vassar Street  
Cambridge, Massachusetts 02139**  
*(Address of principal executive offices)*

**(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 is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer  Accelerated filer  Non-accelerated filer

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date.

**Common Stock, par value \$0.01 per share**

Class

**17,406,951**

Outstanding as of August 2, 2006

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IDERA PHARMACEUTICALS, INC.

FORM 10-Q

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Idera™, Amplivax™, IMOTM and Targeted Immune Therapy™ are our trademarks. IMOXine® and GEM® are our registered trademarks. All other trademarks and service marks appearing in this quarterly report are the property of their respective owners.

**FORWARD-LOOKING STATEMENTS**

This quarterly report 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 facts, included or incorporated in this report regarding our strategy, future operations, 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,” “projects,” “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 should be read as being applicable to all related forward-looking statements whenever they appear in this quarterly report. In addition, any forward-looking statements represent our estimates only as of the date that this quarterly report is filed with the SEC 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 STATEMENTS

## ITEM 1. UNAUDITED FINANCIAL STATEMENTS

## IDERA PHARMACEUTICALS, INC.

## BALANCE SHEETS

(UNAUDITED)

	<u>JUNE 30,</u> <u>2006</u>	<u>PRO FORMA</u> <u>JUNE 30,</u> <u>2006</u> Note 14	<u>DECEMBER 31,</u> <u>2005</u>
<b>Assets</b>			
Current assets:			
Cash and cash equivalents	\$ 2,045,348	\$ 5,545,344	\$ 984,766
Short-term investments	6,702,202	6,702,202	7,390,903
Receivables	146,932	146,932	175,905
Prepaid expenses and other current assets	427,351	427,351	498,347
Total current assets	9,321,833	12,821,829	9,049,921
Property and equipment, net	339,397	339,397	418,684
Deferred financing costs	409,115	409,115	520,692
Total Assets	<u>\$ 10,070,345</u>	<u>\$ 13,570,341</u>	<u>\$ 9,989,297</u>
<b>Liabilities and Stockholders' Equity</b>			
Current liabilities:			
Accounts payable	\$ 717,812	\$ 717,812	\$ 536,371
Accrued expenses	1,690,653	1,690,653	1,338,048
Current portion of capital lease	6,519	6,519	6,519
Current portion of deferred revenue	2,133,787	2,133,787	2,171,287
Total current liabilities	4,548,771	4,548,771	4,052,225
Long term 4% convertible notes payable	5,032,750	5,032,750	5,032,750
Capital lease	7,061	7,061	10,321
Deferred revenue, net of current portion	165,682	165,682	1,229,451
Stockholders' equity:			
Preferred stock, \$0.01 par value			
Authorized — 5,000,000 shares			
Series A convertible preferred stock			
Designated — 1,500,000 shares			
Issued and outstanding — 655 shares	7	7	7
Common stock, \$0.001 par value (Note 14)			
Authorized—40,000,000 shares			
Issued and outstanding — 16,721,124, 17,404,717 and 13,927,631 shares at June 30, 2006 actual, June 30, 2006 pro forma and December 31, 2005 actual, respectively	16,721	17,405	13,928
Additional paid-in capital	321,281,281	324,780,593	312,729,992
Accumulated deficit	(320,977,951)	(320,977,951)	(313,000,200)
Accumulated other comprehensive loss	(3,977)	(3,977)	(11,341)
Deferred compensation	—	—	(67,836)
Total stockholders' equity (deficit)	316,081	3,816,077	(335,450)
Total Liabilities and Stockholders' Equity (Deficit)	<u>\$ 10,070,345</u>	<u>\$ 13,570,341</u>	<u>\$ 9,989,297</u>

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

**IDERA PHARMACEUTICALS, INC.**  
**STATEMENTS OF OPERATIONS**  
**(UNAUDITED)**

	THREE MONTHS ENDED		SIX MONTHS ENDED	
	JUNE 30,		JUNE 30,	
	2006	2005	2006	2005
Alliance revenue	\$ 621,661	\$ 311,465	\$ 1,257,379	\$ 482,750
Operating expenses:				
Research and development	3,980,553	3,014,309	7,344,097	5,673,207
General and administrative	996,731	995,683	1,885,996	1,797,549
Total operating expenses	4,977,284	4,009,992	9,230,093	7,470,756
Loss from operations	(4,355,623)	(3,698,527)	(7,972,714)	(6,988,006)
Other income (expense):				
Investment income, net	134,192	83,159	206,696	150,295
Interest expense	(105,978)	(37,717)	(211,405)	(37,717)
Net loss	(4,327,409)	(3,653,085)	(7,977,423)	(6,875,428)
Accretion of preferred stock dividends	(164)	(164)	(328)	(328)
Net loss applicable to common stockholders	\$ (4,327,573)	\$ (3,653,249)	\$ (7,977,751)	\$ (6,875,756)
Basic and diluted net loss per share (Note 4)	\$ (0.26)	\$ (0.26)	\$ (0.52)	\$ (0.50)
Basic and diluted net loss per share applicable to common stockholders (Note 4)	\$ (0.26)	\$ (0.26)	\$ (0.52)	\$ (0.50)
Shares used in computing basic and diluted loss per common share (see Note 3 regarding the reverse stock split)	16,718,428	13,880,609	15,443,377	13,875,771

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

**IDERA PHARMACEUTICALS, INC.**  
**STATEMENTS OF CASH FLOWS**  
**(UNAUDITED)**

	SIX MONTHS ENDED	
	JUNE 30,	
	2006	2005
<b>Cash Flows From Operating Activities:</b>		
Net loss	\$ (7,977,423)	\$(6,875,428)
Adjustments to reconcile net loss to net cash used in operating activities —		
Loss on disposal of property and equipment	—	2,134
Stock-based compensation	484,036	28,038
Depreciation and amortization expense	197,412	102,216
Issuance of common stock for services rendered	10,000	20,295
Non-cash interest expense	33,643	20,407
Changes in operating assets and liabilities —		
Accounts receivable	28,973	(158,142)
Prepaid expenses and other current assets	70,996	(317,212)
Accounts payable and accrued expenses	500,403	(405,878)
Deferred revenue	(1,101,269)	(101,269)
Net cash used in operating activities	<u>(7,753,229)</u>	<u>(7,684,839)</u>
<b>Cash Flows From Investing Activities:</b>		
Purchase of available for sale securities	(13,255,782)	(2,000,000)
Proceeds from sale of available-for-sale securities	3,445,000	—
Proceeds from maturity of available-for-sale securities	10,525,000	4,000,000
Purchase of property and equipment	(24,700)	(10,904)
Net cash provided by investing activities	<u>689,518</u>	<u>1,989,096</u>
<b>Cash Flow From Financing Activities:</b>		
Proceeds from issuance of convertible notes payable	—	5,032,750
Sale of common stock and warrants, net of issuance costs	8,047,821	—
Issuance costs from financing	—	(386,480)
Payments on capital lease	(3,260)	—
Proceeds from exercise of common stock options and warrants	79,732	59,046
Net cash provided by financing activities	<u>8,124,293</u>	<u>4,705,316</u>
Net increase (decrease) in cash and cash equivalents	1,060,582	(990,427)
Cash and cash equivalents, beginning of period	984,766	5,021,860
Cash and cash equivalents, end of period	<u>\$ 2,045,348</u>	<u>\$ 4,031,433</u>
<b>Supplemental disclosure of non-cash financing and investing activities:</b>		
Issuance of warrants for financing	\$ —	\$ 219,385
Deferred compensation relating to issuance of stock options	\$ —	\$ 72,000
Accretion of Series A convertible preferred stock dividends	\$ (328)	\$ (328)
Issuance of stock for services	\$ 10,000	\$ 20,295
Cash paid for interest	\$ 92,106	\$ —

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

**IDERA PHARMACEUTICALS, INC.**  
**NOTES TO FINANCIAL STATEMENTS**  
**JUNE 30, 2006**  
**(UNAUDITED)**

(1) Organization

Idera Pharmaceuticals, Inc. (“Idera” or the “Company”) (AMEX: IDP) is a biotechnology company engaged in the discovery and development of novel therapeutics that modulate immune responses through Toll-like Receptors (TLRs) for the treatment of multiple diseases. The Company is developing proprietary DNA- and RNA- based compounds that modulate TLRs and are targeted to TLR7, TLR8 or TLR9. The Company believes that these immune modulatory oligonucleotides, or IMO™ compounds, are broadly applicable to large and growing markets where significant unmet medical needs exist, including oncology, asthma and allergies, infectious diseases and autoimmune diseases. The Company’s lead drug candidate is IMO-2055, which is also referred to as HYB2055 or IMOXine®. IMO-2055 is a synthetic DNA-based compound, which acts as an agonist for TLR9 and triggers the activation and modulation of the immune system. IMO-2055 is currently in a Phase 2 clinical trial as a monotherapy for renal cell carcinoma and a Phase 1/2 clinical trial in combination with chemotherapy agents for solid tumors. The Company has selected another TLR9 agonist, IMO-2125, as a lead compound for development for the treatment of infectious diseases. Idera is also collaborating with Novartis International Pharmaceuticals, Ltd., or Novartis, to develop treatments for asthma and allergies using other of the Company’s TLR9 agonist compounds. The Company’s IMO compounds targeted to TLR7, TLR8 and those which act as antagonists to TLR9 are in the discovery stage.

Based on its current operating plan, the Company believes that its existing cash, cash equivalents and short-term investments, together with the \$3.5 million in gross proceeds from the sale in July 2006 of common stock at a price of \$5.12 per share under a purchase commitment entered into by the Company in March 2006 (see Note 12(b) and 14), will be sufficient to fund operations through March 2007. As more fully described in Note 12(b), in March 2006, the Company secured a purchase commitment from an investor to purchase up to a total of \$9.8 million of the Company’s common stock during the period from June 24, 2006 through December 31, 2006 in up to three drawdowns made by the Company, at its discretion, at a minimum price of \$5.12 per share. If the Company elects to sell the remaining \$6.3 million of its common stock in the remaining two drawdowns, the Company expects that the proceeds from such sales would enable the Company to pursue its clinical and preclinical development programs and continue operations through August 2007. The Company’s actual cash requirements will depend on many factors, including particularly the scope and pace of its research and development efforts and its success in entering into strategic alliances. On June 29, 2006, the Company effected a one-for-eight reverse stock split of its issued and outstanding common stock. All share and per share information herein reflects this reverse stock split.

The Company does not expect to generate significant additional funds internally until it successfully completes development and obtains marketing approval for products, either alone or in collaborations with third parties, which the Company expects will take a number of years. In addition, it has no other committed external sources of funds. As a result, in order for the Company to continue to pursue its clinical and preclinical development programs and continue its operations beyond March 2007, or August 2007 if it draws down all of the funds pursuant to the purchase commitment described above, the Company must raise additional funds from debt or equity financings or from collaborative arrangements with biotechnology or pharmaceutical companies. There can be no assurance that the requisite funds will be available in the necessary time frame or on terms acceptable to the Company. If the Company is unable to raise sufficient funds, the Company may be required to delay, scale back or significantly curtail its operating plans and possibly relinquish rights to portions of the Company’s technology or products. In addition, increases in expenses or delays in clinical development may adversely impact the Company’s cash position and require further cost reductions. No assurance can be given that the Company will be able to operate profitably on a consistent basis, or at all, in the future.

(2) Unaudited Interim Financial Statements

The accompanying unaudited consolidated condensed financial statements included herein have been prepared by the Company in accordance with generally accepted accounting principles for interim financial information and pursuant to the rules and regulations of the Securities and Exchange Commission. Accordingly, certain information and footnote disclosures normally included in financial statements prepared in accordance with generally accepted accounting principles have been condensed or omitted pursuant to such

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rules and regulations. In the opinion of management, all adjustments, consisting of normal recurring adjustments, considered necessary for a fair presentation of interim period results have been included. The Company believes that its disclosures are adequate to make the information presented not misleading. Interim results for the three-month and six-month periods ended June 30, 2006 are not necessarily indicative of results that may be expected for the year ended December 31, 2006. 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, 2005, which was filed with the Securities and Exchange Commission on March 31, 2006.

### (3) Reverse Stock Split

At the close of business on June 29, 2006, the Company effected a one-for-eight reverse stock split of its issued and outstanding common stock and fixed the number of authorized shares of its common stock at 40,000,000. As a result of the reverse stock split, each share of common stock outstanding at the close of business on June 29, 2006 automatically converted into one-eighth of one share of common stock. All share and per share information herein reflects this reverse stock split.

The reverse stock split reduced the number of outstanding shares of common stock from approximately 133.8 million shares to approximately 16.7 million shares, subject to reduction for fractional shares that were paid for in cash. Additionally, the reverse stock split resulted in proportionate adjustments to (i) the number of shares of common stock issuable upon conversion of the Company's Series A convertible preferred stock, (ii) the number of shares of common stock issuable upon conversion of the Company's 4% convertible subordinated notes due April 30, 2008, (iii) the number of shares of common stock issuable upon the exercise of options and warrants outstanding on June 29, 2006 and the exercise price of such options and warrants, and (iv) the number of shares issuable under the Company's stock incentive plans, including the Company's 2005 Stock Incentive Plan, 1997 Stock Incentive Plan, 1995 Director Stock Option Plan, and 1995 Employee Stock Purchase Plan. The reverse stock split did not alter the par value of the common stock, which is \$0.001 per share, or modify any voting rights or other terms of the common stock.

Pursuant to the Rights Agreement, dated as of December 10, 2001, between the Company and Mellon Investor Services LLC, as Rights Agent, as amended (the "Rights Agreement"), as a result of the reverse stock split, the number of Rights (as defined in the Rights Agreement) associated with each share of common stock was automatically proportionately adjusted so that (i) eight Rights were then associated with each outstanding share of common stock and (ii) so long as the Rights are attached to the common stock, eight Rights (subject to further adjustment pursuant to the provisions of the Rights Agreement) shall be deemed to be delivered for each share of common stock issued or transferred by the Company in the future.

### (4) Net Loss per Common Share

The following table sets forth the computation of basic and diluted loss per share:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2006	2005	2006	2005
Numerator:				
Net loss	\$ (4,327,409)	\$ (3,653,085)	\$ (7,977,423)	\$ (6,875,428)
Accretion of preferred stock dividends	(164)	(164)	(328)	(328)
Numerator for basic and diluted loss per share applicable to common shareholders	<u>\$ (4,327,573)</u>	<u>\$ (3,653,249)</u>	<u>\$ (7,977,751)</u>	<u>\$ (6,875,756)</u>
Denominator for basic and diluted loss per share (Note 3)	<u>16,718,428</u>	<u>13,880,609</u>	<u>15,443,377</u>	<u>13,875,771</u>
Loss per share — basic and diluted:				
Net loss per share	\$ (0.26)	\$ (0.26)	\$ (0.52)	\$ (0.50)
Accretion of preferred stock dividends	—	—	—	—
Net loss per share applicable to common stockholders	<u>\$ (0.26)</u>	<u>\$ (0.26)</u>	<u>\$ (0.52)</u>	<u>\$ (0.50)</u>

Basic 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, 2006 and 2005, diluted net loss per share of common stock is the same as basic net loss per share of common stock, as the effects of the Company's potential common stock equivalents are antidilutive. Total antidilutive securities were 8,028,963 and 4,921,736 at June 30, 2006 and 2005, respectively. These antidilutive securities include stock options, warrants, convertible debt instruments and convertible preferred stock and are not included in the Company's calculation of diluted net loss per common share.

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### (5) Cash Equivalents and 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, 2006 and December 31, 2005 consisted of cash and money market funds.

The Company accounts for investments in accordance with Statement of Financial Accounting Standards (SFAS) No. 115, "Accounting for Certain Investments in Debt and Equity Securities." Management determines the appropriate classification of marketable securities at the time of purchase. In accordance with SFAS No. 115, 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 loss" on the accompanying consolidated balance sheet. 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 are included in "Investment income, net" on the accompanying consolidated statement of operations for all available-for-sale securities. The Company had no "held-to-maturity" investments, as defined by SFAS No. 115, at June 30, 2006 and December 31, 2005. The cost of securities sold is based on the specific identification method. The Company had no realized gains or losses for the three and six months ended June 30, 2006 and 2005. There were no losses or permanent declines in value included in "investment income" for any securities in the three and six months ended June 30, 2006 and 2005.

The Company had no long-term investments as of June 30, 2006 and December 31, 2005. Available-for-sale securities are classified as short-term regardless of their maturity date as if the Company considers them available to fund operations within one year of the balance sheet date. Auction securities are highly liquid securities that have floating interest or dividend rates that reset periodically through an auctioning process that sets rates based on bids. Issuers include municipalities, closed-end bond funds and corporations. These securities can either be debt or preferred shares. The Company's short-term available-for-sale investments at market value consisted of the following at June 30, 2006 and December 31, 2005:

	June 30, 2006	December 31, 2005
Corporate bonds due in one year or less	\$ 401,308	\$ 2,102,432
Government bonds due in one year or less	570,894	2,484,975
Short term notes	—	901,820
Auction securities	5,730,000	1,901,676
Total	<u>\$ 6,702,202</u>	<u>\$ 7,390,903</u>

### (6) Property and Equipment

At June 30, 2006 and December 31, 2005, net property and equipment at cost consisted of the following:

	June 30, 2006	December 31, 2005
Leasehold improvements	\$ 444,186	\$ 424,500
Laboratory equipment and other	1,932,964	1,927,950
Total property and equipment, at cost	2,377,150	2,352,450
Less: Accumulated depreciation and amortization	2,037,753	1,933,766
Property and equipment, net	<u>\$ 339,397</u>	<u>\$ 418,684</u>

Depreciation expense, which includes amortization of assets recorded under capital leases, was approximately \$53,000 and \$35,000 for the three months ended June 30, 2006 and 2005, respectively, and \$104,000 and \$72,000 for the six months ended June 30, 2006 and 2005, respectively. In the first half of 2005, the Company wrote off unused property and equipment that had a cost of approximately \$109,000 resulting in a loss of approximately \$2,000.

### (7) Stock-Based Compensation

The Company adopted SFAS No. 123R, "Share-Based Payment," on January 1, 2006. This statement requires the Company to recognize all share-based payments to employees in the financial statements based on their fair values. Under SFAS No. 123R, the Company is required to record compensation expense over an award's vesting period based on the award's fair value at the date of grant. The Company has elected to adopt SFAS No. 123R on a modified prospective basis; accordingly, the financial statements for periods prior to January 1, 2006, will not include compensation cost calculated under the fair value method. 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.



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Prior to January 1, 2006, the Company applied Accounting Principles Board (“APB”) Opinion No. 25, “Accounting for Stock Issued to Employees,” and therefore, recorded the intrinsic value of stock-based compensation as an expense. The following table illustrates the pro forma effect on net income and earnings per share if the Company had applied the fair value recognition provisions of SFAS No. 123, “Accounting for Stock-Based Compensation,” to stock-based employee compensation for the three and six months ended June 30, 2005.

	<u>Three months ended June 30, 2005</u>	<u>Six months ended June 30, 2005</u>
Net loss applicable to common stockholders, as reported	\$ (3,653,249)	\$ (6,875,756)
Less: stock-based compensation (income) expense included in reported net loss	(55,715)	28,038
Add: stock-based employee compensation expense determined under fair value based method for all awards	(236,672)	(452,744)
Pro forma net loss applicable to common stockholders, as adjusted for the effect of applying SFAS No. 123	<u>\$ (3,945,636)</u>	<u>\$ (7,300,462)</u>
Basic and diluted net loss per share applicable to common stockholders —		
As reported	<u>\$ (0.26)</u>	<u>\$ (0.50)</u>
Pro forma	<u>\$ (0.28)</u>	<u>\$ (0.53)</u>

As explained in Note 8, prior to adopting SFAS 123R on January 1, 2006, the Company recorded changes in the intrinsic value of its repriced options in its Statement of Operations, including the \$55,715 credit for the three months ended June 30, 2005 and the expense of \$28,038 for the six months ended June 30, 2005, which are shown in the above table. In accordance with SFAS 123R, the Company no longer includes changes in the intrinsic value of its repriced options in its Statement of Operations.

During the three and six months ended June 30, 2006, the Company included charges of approximately \$237,000 and \$484,000, respectively, in its Statement of Operations. These charges represent the stock compensation expense computed in accordance with SFAS 123R. There were no corresponding charges included in the Statement of Operations during the three and six months ended June 30, 2005. The adoption of SFAS 123R had no effect on cash flows during the first six months of 2006. The adoption of SFAS 123R decreased basic and diluted earnings per share by \$0.01 and \$0.03, respectively, during the three and six months ended June 30, 2006.

The Company’s stock compensation plans include the 1995 Stock Option Plan, the 1995 Director Stock Option Plan, the 1995 Employee Stock Purchase Plan, the 1997 Stock Incentive Plan and the 2005 Stock Incentive Plan, all of which have been approved by the Company’s stockholders. Pursuant to the terms of the plan, no additional options are being granted under the 1995 Stock Option Plan. Options to purchase a total of 3,037,500 shares of common stock may be granted under the other stockholder approved plans. The Company has also granted options to purchase shares of Common Stock pursuant to agreements that were not approved by stockholders.

Under the Company’s stock option and incentive plans, options may be granted to directors, officers and employees. Stock option grants generally vest ratably over three to four years and expire within ten years after the date of grant. Stock options granted under the 1995 Director Stock Option Plan vest in one year.

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 granted for the six months ended June 30, 2006 and 2005:

	<u>June 30,</u>	
	<u>2006</u>	<u>2005</u>
Weighted average expected term (years)	6.0	6.0
Weighted average expected volatility	89.7%	75.0%
Weighted average dividend per share	—	—
Weighted average risk free interest rate	4.4%	3.8%
Weighted average fair value of options granted per share	\$3.65	\$3.36

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Effective January 1, 2006, the Company modified the assumptions used to determine the fair value of options granted in accordance with SFAS No. 123R and SEC Staff Accounting Bulletin (SAB) No. 107. The assumptions used to determine the fair values of options granted after January 1, 2006 are based on the following:

- (i) The expected term represents the period of time that the options are expected to be outstanding. Where appropriate in accordance with SAB 107, the Company utilized the midpoint between the vesting date and the contractual term in determining the expected term of options that met the criteria for using this method under SAB 107. The expected term of options that do not meet the SAB 107 criteria is based on historical experience with exercise and post-vesting employment termination behavior.
- (ii) The expected volatility is based on the historical volatility of the Company's closing stock price on the last trading day of each calendar month for a period equal to the expected term of the option.
- (iii) The risk-free interest rate is based on the U.S. Treasury rate with a maturity date that corresponds with the expected term of the option.

Stock option activity for the six months ended June 30, 2006 is summarized as follows:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Life in Years	Aggregate Intrinsic Value
Outstanding, December 31, 2005	2,548,180	\$ 5.71		
Granted	70,250	4.83		
Exercised	(13,878)	4.00		
Terminated	(71,220)	4.92		
Outstanding, June 30, 2006	<u>2,533,332</u>	5.72	6.01	\$ 15,646
Exercisable, June 30, 2006	<u>1,853,006</u>	6.07	5.03	15,646

As of June 30, 2006, there was \$1.9 million of total unrecognized compensation cost related to unvested stock-based compensation arrangements. That cost is expected to be recognized over a weighted-average period of 2.7 years.

Additional information on option activity for the six months ended June 30, 2006 is as follows:

	Six Months ended June 30, 2006
Total fair value of shares vested	\$ 496,723
Total intrinsic value of options exercised	11,989

(8) Stock-Based Compensation Related to Repriced Options

In September 1999, the Company's Board of Directors authorized the repricing of options to purchase 656,478 shares of common stock to \$4.00 per share, which represented the market value of the common stock on the date of the repricing. Prior to the adoption of SFAS 123R, these options were subject to variable plan accounting which required the Company to re-measure the intrinsic value of the repriced options, through the earlier of the date of exercise, cancellation or expiration, at each reporting date. For the three months ended June 30, 2005, the Company recognized a credit of \$55,715 as stock compensation from repriced options as a result of a decrease in the intrinsic value of these options between March 31, 2005 and June 30, 2005. For the six months ended June 30, 2005, the Company recognized \$28,038 as stock compensation expense from repriced options as a result of an increase in the intrinsic value of these options between December 31, 2004 and June 30, 2005.

(9) Related Party Transactions

During the six months ended June 30, 2006 and in connection with the purchase commitment discussed in Note 12, the Company paid one of its directors a commission of \$487,500 which represented 5% of the amount available to the Company under the purchase commitment.

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In the three and six months ended June 30, 2005, the Company paid Pillar Investment Limited, which is controlled by a director of the Company, approximately \$264,000 in cash and issued warrants to purchase 70,684 shares of common stock at an exercise price of \$7.12 per share as fees in connection with Pillar Investment Limited acting as the placement agent for the sale of the 4% convertible subordinated notes in May 2005 discussed in Note 11. The warrants have a Black-Scholes value of approximately \$219,000.

### (10) Comprehensive Income

The following table includes the components of comprehensive income for the three and six months ended June 30, 2006 and 2005.

	Three months ended June 30,		Six months ended June 30,	
	2006	2005	2006	2005
Net loss	\$ (4,327,409)	\$ (3,653,085)	\$ (7,977,423)	\$ (6,875,428)
Other comprehensive income (loss)	(3,147)	7,540	7,364	12,809
Total comprehensive loss	<u>\$ (4,330,556)</u>	<u>\$ (3,645,545)</u>	<u>\$ (7,970,059)</u>	<u>\$ (6,862,619)</u>

Other comprehensive income (loss) represents the net unrealized gains and losses on available-for-sale investments.

### (11) Notes Payable

On May 24, 2005, the Company sold approximately \$5.0 million in principal amount of 4% convertible subordinated notes due April 30, 2008 (the 4% Notes). Interest on the 4% Notes is payable semi-annually in arrears on April 30 and October 30 and at maturity or conversion. The Company has the option to pay interest on the 4% Notes in cash or in shares of the Company's common stock at the then current market value of the Company's common stock. Holders of the 4% Notes may convert, at any time prior to maturity, the principal amount of the 4% Notes (or any portion thereof) into shares of the Company's common stock at a conversion price of \$7.12 per share. The Company may cause the principal amount of the 4% Notes to be converted into shares of the Company's common stock at the then current conversion price if the volume weighted average of the closing sales prices of the Company's common stock for 10 consecutive trading days is equal to at least \$8.96 per share. If the Company conducts a financing resulting in greater than \$10.0 million in gross proceeds, the Company may elect to convert the 4% Notes into shares of the Company's common stock at the then current conversion price if the purchase price paid by the new investors in the financing (on a common stock equivalent basis) is greater than the then current conversion price of the 4% Notes. Holders of the 4% Notes may demand that the Company redeem the 4% Notes upon a change in control, a merger with an independent company, or a change in the Company's listing status.

The Company capitalized its financing costs associated with the sale of the 4% Notes and is amortizing them over the term of the notes. These costs include the Black-Scholes value of the warrants, legal expenses and miscellaneous costs attributable to the placement of the notes.

### (12) Private Financing

#### (a) Private Financing

On March 24, 2006, the Company raised approximately \$9.8 million in gross proceeds from a private placement to institutional investors. In the private placement, the Company sold for a purchase price of \$3.52 per share 2,769,886 shares of common stock and warrants to purchase 2,077,414 shares of common stock. The warrants to purchase common stock have an exercise price of \$5.20 per share and will expire if not exercised on or prior to September 24, 2011. The warrants may be exercised by cash payment only and are exercisable any time on or after September 24, 2006. After March 24, 2010, the Company may redeem the warrants for \$0.08 per warrant share following notice to the warrant holders if the volume weighted average of the closing sales price of the common stock exceeds 300% of the warrant exercise price for the 15-day period preceding the notice. The Company may exercise its right to redeem the warrants by providing 20 days prior written notice to the holders of the warrants. The net proceeds to the Company from the offering, excluding the proceeds of any future exercise of the warrants, total approximately \$8.9 million. The Company has filed a registration statement covering the resale of the common stock and the common stock issuable upon exercise of the warrants, which has been declared effective.

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### *(b) Financing Commitment*

On March 24, 2006, the Company secured a purchase commitment from an investor to purchase from the Company up to \$9.8 million of the Company's common stock during the period from June 24, 2006 through December 31, 2006 in up to three drawdowns made by the Company at the Company's discretion. In July 2006, the Company accessed \$3.5 million of this purchase commitment and sold 683,593 shares of common stock at a price of \$5.12 per share. If the Company elects to draw down any of the remaining \$6.3 million in exchange for newly-issued shares of the Company's common stock, the price at which such shares shall be issued will be equal to the greater of (a) 80% of the volume weighted average closing price during a five-day pricing period preceding the date that the Company notifies the investor of the sale and (b) a floor price of \$5.12 per share. The Company's ability to make additional drawdowns is conditioned upon the effectiveness of a registration statement covering the resale of the shares to be issued under the purchase commitment. No drawdown may occur within 45 days of any other drawdown, and no single drawdown may exceed \$4.0 million. Based on the floor price, a maximum of 1,220,703 additional shares of common stock could be issued under the purchase commitment. The Company is not obligated to sell any of the remaining \$6.3 million of common stock available under the purchase commitment and there are no minimum commitments or minimum use penalties. The purchase commitment does not contain any restrictions on the Company's operating activities, automatic pricing resets or minimum market volume restrictions. The agent fees and other costs directly related to securing the commitment amounted to approximately \$0.9 million. If the Company sells the entire \$9.8 million of its common stock pursuant to the purchase commitment, the net proceeds to the Company, excluding the proceeds of any future exercise of the warrants, will be approximately \$8.9 million. As part of the arrangement, the Company issued warrants to the investor to purchase 761,718 shares of common stock at an exercise price of \$5.92 per share. The warrants are exercisable by cash payment only. The warrants are exercisable beginning September 24, 2006. The warrants expire if not exercised by September 24, 2011. On or after March 24, 2010, Idera may redeem the warrants for \$0.08 per warrant share following notice to the warrant holders if the closing sales price of the common stock exceeds 250% of the warrant exercise price for 15 consecutive trading days prior to the notice. The Company may exercise its right to redeem the warrants by providing at least 30 days prior written notice to the holders of the warrants.

### *(c) Amendment to Rights Agreement*

On March 24, 2006, in connection with the private financing described above, the Company entered into an amendment ("Amendment No. 2") to the Rights Agreement, dated as of December 10, 2001, as amended (the "Rights Agreement"), between the Company and Mellon Investor Services LLC, as Rights Agent. Amendment No. 2 modifies the definition of "Exempted Persons" that are excluded from the definition of "Acquiring Person" under the Rights Agreement to provide that Baker Brothers Investments, together with its affiliates and associates (the "Baker Entities"), will be an Exempted Person under the Rights Agreement until such time as the Baker Entities beneficially own more than 4,375,000 shares of the Company's common stock (subject to adjustment) or less than 14% of the common stock then outstanding.

### (13) Novartis Collaboration

On May 31, 2005, the Company entered into a research collaboration and option agreement and a license, development and commercialization agreement with Novartis International Pharmaceutical Ltd. to discover, develop and potentially commercialize immune-modulatory oligonucleotides that are TLR9 agonists and that are identified as potential treatments for asthma and allergies. Under the terms of the agreements, Novartis paid the Company a \$4.0 million license fee in July 2005. In addition to the \$4.0 million upfront payment, Novartis agreed to fund substantially all research activities and make milestone payments to Idera upon the achievement of clinical development, regulatory approval and cumulative net sales milestones. If Novartis elects to exercise its option to develop and commercialize licensed IMOs in the initial collaboration disease areas, Novartis is potentially obligated to pay the Company up to \$132.0 million in milestone payments. Novartis is also obligated to pay the Company a royalty on net sales of all products, if any, commercialized by Novartis, its affiliates and sublicensees. The Company is recognizing the \$4.0 million upfront payment as revenue over the two-year term of the research collaboration. If specific conditions are met, Novartis may choose to expand the collaboration to use identified immune modulatory oligonucleotides for additional human diseases, other than oncology and infectious diseases, which will be subject to agreed upon milestone payments.

### (14) Pro Forma Balance Sheet

In July 2006, the Company drew down \$3.5 million of the purchase commitment through the sale of 683,593 shares of common stock at a price of \$5.12 per share (see Note 12(b)). The unaudited pro forma balance sheet as of June 30, 2006 reflects the receipt on July 24, 2006 of approximately \$3.5 million of gross proceeds from the first drawdown under the commitment.

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

### **GENERAL**

We are engaged in the discovery and development of novel therapeutics that modulate immune responses through Toll-like Receptors, or TLRs, for the treatment of multiple diseases. We are developing proprietary DNA- and RNA-based compounds that modulate TLRs and are targeted to TLR7, TLR8 or TLR9. We believe that these immune modulatory oligonucleotide, or IMO™, compounds are broadly applicable to large and growing markets where significant unmet medical needs exist, including oncology, asthma and allergies, infectious diseases and autoimmune diseases. IMO-2055, our lead drug candidate, is a synthetic DNA-based compound, which acts as an agonist for TLR9 and triggers the activation and modulation of the immune system. IMO-2055 is currently in a Phase 2 clinical trial as a monotherapy for renal cell carcinoma and a Phase 1/2 clinical trial in combination with chemotherapy agents for solid tumors. We have selected another TLR9 agonist, IMO-2125, as a lead compound for development for the treatment of infectious diseases. We are also collaborating with Novartis to develop treatments for asthma and allergies using other of our TLR9 agonist compounds. Our IMO compounds targeted to TLR7, TLR8 and those which act as antagonists to TLR9 are in the discovery stage.

Since 2003, we have devoted substantially all of our research and development efforts to our IMO technology and products and expect to continue that focus in future years. These IMO research and development efforts have resulted in over 140 patents and patent applications world wide. Although we are no longer developing our antisense technologies in-house, we have maintained 377 key patents and patent applications in this area and will continue to seek additional collaborators to develop our antisense technologies. In order to commercialize our therapeutic products, we need to address a number of technological challenges and to comply with comprehensive regulatory requirements.

### **APPLICATION OF CRITICAL ACCOUNTING POLICIES**

This management's discussion and analysis of financial condition and results of operations is based on our consolidated 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. 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 (i) 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 (ii) 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 Consolidated Financial Statements in our Annual Report on Form 10-K for the year ended December 31, 2005. Not all of these significant accounting policies, however, fit the definition of "critical accounting estimates." We believe that our accounting policies relating to revenue recognition, as described under the caption "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations — Critical Accounting Policies" in our Annual Report on Form 10-K for the year ended December 31, 2005, fit the definition of "critical accounting estimates and judgments."

### **STOCK BASED COMPENSATION**

On January 1, 2006, we adopted Statement of Financial Accounting Standards (SFAS) No. 123R, "*Share-Based Payment*". This statement requires us to recognize all share-based payments to employees in the financial statements based on their fair values. We have chosen to adopt SFAS 123R on a modified prospective basis and the statement of operations does not include compensation costs calculated under the fair value method of SFAS 123R in the first half of 2005. Since the adoption of this new guidance there have been no significant changes in the quantity or types of instruments used in stock-based compensation programs, nor have there been any significant changes in the terms of existing stock-based compensation arrangements and no material cumulative adjustments were recorded in the first half of 2006.

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During the three and six months ended June 30, 2006, we included charges of approximately \$237,000 and \$484,000, respectively, in our statement of operations, which represent the stock compensation expense computed in accordance with SFAS 123R. There were no corresponding charges included in the statement of operations during the three and six months ended June 30, 2005. We expect that the stock based compensation charges in our statement of operations for the remainder of 2006 will be similar to the charges included in the first half of 2006 with no corresponding charges in 2005. However, the amount of future charges cannot be forecasted precisely since it is dependent, in part, on future stock option grants and other factors which cannot be accurately predicted at this time.

Prior to adopting SFAS 123R on January 1, 2006, we recorded changes in the intrinsic value of our repriced options in our Statement of Operations, including a \$56,000 credit in the three months ended June 30, 2005 and a charge of \$28,000 in the six months ended June 30, 2005. In accordance with SFAS 123R, we no longer include changes in the intrinsic value of our repriced options in our statement of operations.

As of June 30, 2006, there was \$1.9 million of total unrecognized compensation cost related to unvested stock-based compensation arrangements. That cost is expected to be recognized over a weighted-average period of 2.7 years.

## **RESULTS OF OPERATIONS**

### ***Three and Six Months Ended June 30, 2006 and 2005***

#### *Alliance Revenue*

Total alliance revenue increased by \$311,000, or 100%, from \$311,000 for the three months ended June 30, 2005 to \$622,000 for the three months ended June 30, 2006 and increased by \$774,000, or 160%, from \$483,000 for the six months ended June 30, 2005 to \$1,257,000 for the six months ended June 30, 2006. The difference in revenues between the three and six months ended June 30, 2006 and the three and six months ended June 30, 2005 was primarily due to license fees we recognized under our collaboration agreement with Novartis, which we entered into in May 2005. In 2005, we received from Novartis a \$4,000,000 upfront fee in connection with the execution of the agreement. We are recognizing this \$4,000,000 upfront fee over two years with the balance being recorded in deferred revenue. Our revenues for both periods were comprised of revenue earned under various collaboration and licensing agreements for research and development, including reimbursement of third-party expenses, license fees, sublicense fees, and royalty payments.

#### *Research and Development Expenses*

Research and development expenses increased by \$967,000, or 32%, from \$3,014,000 for the three months ended June 30, 2005 to \$3,981,000 for the three months ended June 30, 2006 and increased by 1,671,000 or 29%, from \$5,673,000 for the six months ended June 30, 2005 to \$7,344,000 for the six months ended June 30, 2006. The increase in the three and six months ended June 30, 2006 was primarily attributable to increased costs associated with the development of our lead cancer drug candidate, IMO-2055. The increase was also attributable to IND-enabling safety study costs associated with our pre-IND lead infectious disease compound, IMO-2125, and increased stock-based compensation attributable, in part, to our adoption of SFAS 123R.

The lead drug candidate in our IMO program is IMO-2055. We are developing IMO-2055 for oncology applications under the name IMOXine. In October 2004, we commenced patient recruitment for an open label, multi-center Phase 2 clinical trial of IMO-2055 as a monotherapy in patients with metastatic or recurrent clear cell renal carcinoma. The primary endpoint of the trial is to determine the tumor response (increase or decrease in size) by a standard approach referred to as RECIST (Response Evaluation Criteria in Solid Tumors). Secondary objectives include safety, duration of response, time to progression, survival and the effect of the treatment on quality of life. We originally planned to recruit a minimum of 46 patients who had previously failed one prior therapy, or "second-line" patients, into the first stage of the trial. We also expected to enroll in the first stage of the trial some treatment-naïve patients, although the original protocol did not specify a target enrollment for treatment-naïve patients. In October 2005, in response to a higher than expected enrollment rate of treatment-naïve patients in the Phase 2 trial, we submitted to the FDA a protocol amendment that provides for enrollment of up to 46 treatment-naïve patients in the first stage of the trial, in addition to the 46 second-line patients provided for by the original study design. As a result, we are now seeking to enroll up to 92 patients in the first stage of the trial and we plan to continue patient recruitment into the second half of 2006. Recruitment has been slower than projected because of the recent approval of the two new therapies, Sutent® and Nexavar®, for treatment of renal cell carcinoma.

In October 2005, we initiated a Phase 1/2 clinical trial of IMO-2055 in combination with the chemotherapy agents gemcitabine, marketed by Eli Lilly as Gemzar®, and carboplatin at the Lombardi Comprehensive Cancer Center at Georgetown University Medical Center. We enrolled eight refractory solid tumor patients in the original Phase 1 part of the trial. We are seeking to enroll 12 to 18 additional refractory solid tumor patients in the amended Phase 1 portion of the trial to evaluate the safety of the combination. If successful, we plan to use Phase 1 data for dose selection for the subsequent Phase 2 portion of the trial as first-line treatment of non-small cell lung cancer patients.

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We recently announced the formation of an Oncology Clinical Advisory Board to advise us on our Toll-like Receptor, or TLR, targeted development programs in oncology, including our lead drug candidate, IMO-2055. We plan to review with the Oncology Clinical Advisory Board our clinical strategy, including the anticipated Phase 2 portion of our Phase 1/2 clinical trial of IMO-2055.

Because our IMO-2055 development and our other research and development programs are in the early stage of development and given the technological and regulatory hurdles likely to be encountered in the development and commercialization of our products, the future timing and costs of our various research and development programs are uncertain. In 2006, we expect that our research and development expenses will continue to be higher than those in 2005 as we continue to advance IMO-2055 through clinical development and IMO-2125 through preclinical development.

### *General and Administrative Expenses*

General and administrative expenses increased by \$1,000, or less than 1%, from \$996,000 in the three months ended June 30, 2005 to \$997,000 in the three months ended June 30, 2006 and increased by \$88,000, or 5%, from \$1,798,000 in the six months ended June 30, 2005 to \$1,886,000 in the six months ended June 30, 2006. The increase in the three and six months ended June 30, 2006 primarily reflects higher stock-based compensation resulting from our adoption of SFAS 123R. The increase in both periods is partially offset by a decrease in corporate legal expenses.

### *Investment Income, net*

Investment income increased by approximately \$51,000, or 61%, from \$83,000 in the three months ended June 30, 2005 to \$134,000 in the three months ended June 30, 2006 and increased by \$57,000, or 38%, from \$150,000 in the six months ended June 30, 2005 to \$207,000 in the six months ended June 30, 2006. These increases resulted from higher interest rates and lower premium amortization offsetting interest income in the three and six months ended June 30, 2006.

### *Interest Expense*

Interest expense increased by \$68,000, or 179%, from \$38,000 in the three months ended June 30, 2005 to \$106,000 in the three months ended June 30, 2006 and increased by \$173,000, or 455%, from \$38,000 in the six months ended June 30, 2005 to \$211,000 in the six months ended June 30, 2006. These increases for the three and six months ended June 30, 2006 reflect interest on our 4% convertible subordinated notes issued in May 2005 and amortization of deferred financing costs associated with these notes.

### *Net Loss Applicable to Common Stockholders*

As a result of the factors discussed above, our net loss applicable to common stockholders amounted to \$4,328,000 for the three months ended June 30, 2006, as compared to \$3,653,000 for the three months ended June 30, 2005 and \$7,978,000 for the six months ended June 30, 2006, as compared to \$6,876,000 for the six months ended June 30, 2005. We have incurred losses of \$60.8 million since January 1, 2001 and losses of \$260.2 million prior to December 31, 2000 for a total of \$321.0 million in losses through June 30, 2006. We expect to incur substantial operating losses in the future.

## **LIQUIDITY AND CAPITAL RESOURCES**

### *Sources of Liquidity*

We require cash to fund our operating expenses, to make capital expenditures and to pay debt service. Historically, we have funded our cash requirements primarily through the following means: equity and debt financing, license fees and research funding under collaborative and license agreements, interest income and lease financings.

In March 2006, we raised approximately \$9.8 million in gross proceeds from a private placement to institutional investors. In the private placement, we sold for a purchase price of \$3.52 per share 2,769,886 shares of common stock and warrants to purchase 2,077,414 shares of common stock. The warrants to purchase common stock have an exercise price of \$5.20 per share and will expire if not exercised on or prior to September 24, 2011. The warrants may be exercised by cash payment only and are exercisable any time on or after September 24, 2006. After March 24, 2010, we may redeem the warrants for \$0.08 per warrant share following notice to

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the warrant holders if the volume weighted average of the closing sales price of the common stock exceeds 300% of the warrant exercise price for the 15-day period preceding the notice. We may exercise our right to redeem the warrants by providing 20 days prior written notice to the holders of the warrants. The net proceeds to us from the offering, excluding the proceeds of any future exercise of the warrants, totaled approximately \$8.9 million.

In March 2006, we secured a purchase commitment from an investor to purchase from us up to \$9.8 million of our common stock during the period from June 24, 2006 through December 31, 2006 in up to three drawdowns made by us at our discretion. In July 2006, we drew down \$3.5 million of this commitment through the sale of 683,593 shares of common stock at a price of \$5.12 per share. If we elect to draw down the remaining \$6.3 million of newly-issued shares of our common stock, the price will be equal to the greater of a) 80% of the volume weighted average closing price during a five-day pricing period preceding the date that we notify the investor of the sale and b) \$5.12 per share. Our ability to make additional drawdowns is conditioned upon the effectiveness of a registration statement covering the resale of the shares to be issued under the purchase commitment. No drawdown may occur within 45 days of any other drawdown, and no single drawdown may exceed \$4.0 million. Based on the floor price, a maximum of 1,220,703 additional shares of common stock could be issued under the purchase commitment. We are not obligated to sell any of the remaining \$6.3 million of common stock available under the purchase commitment and there are no minimum commitments or minimum use penalties. The purchase commitment does not contain any restrictions on our operating activities, automatic pricing resets or minimum market volume restrictions. The agent fees and other costs directly related to securing the purchase commitment amount to approximately \$0.9 million, which we paid in the six months ended June 30, 2006. If we elect to sell the entire \$9.8 million of our common stock pursuant to the purchase commitment, the net proceeds to us, excluding the proceeds of any future exercise of the warrants, will be approximately \$8.9 million. As part of the arrangement, we issued warrants to the investor to purchase 761,718 shares of our common stock at an exercise price of \$5.92 per share.

In connection with the purchase commitment discussed above, we paid one of our directors, who acted as our agent, a commission of \$487,500 which represented 5% of the amount available to us under the purchase agreement.

### *Cash Flows*

As of June 30, 2006, we had approximately \$8,748,000 in cash, cash equivalents and short-term investments, an increase of approximately \$372,000 from December 31, 2005.

We used approximately \$7,753,000 of cash for operating activities during the six months ended June 30, 2006, principally to fund our research and development expenses and our general and administrative expenses. The \$7,753,000 primarily consists of our net loss of \$7,977,000 for the period, as adjusted for non-cash stock-based compensation, the increase in our accrued expenses reflecting the costs of manufacturing conducted by a third party in the second quarter of 2006 but for which payment was not due at quarter end and a decrease in our deferred revenue.

The net cash provided by investing activities during the first half of 2006 of \$690,000 reflects our purchase of approximately \$13,256,000 in securities offset by our sale of \$3,445,000 of securities and the proceeds of approximately \$10,525,000 from securities that matured in the first half of 2006.

The net cash of approximately \$8,124,000 provided by financing activities during the first half of 2006 reflects the approximately \$9,750,000 in gross proceeds that we received from the private placement to institutional investors in March 2006 offset by the expenses associated with both the March 2006 private placement and the March 2006 purchase commitment. Net cash provided by financing activities also reflects approximately \$80,000 we received from the exercise of stock options during the six months ended June 30, 2006.

### *Funding Requirements*

We believe that, based on our current operating plan, our existing cash, cash equivalents and short-term investments, together with the \$3.5 million in gross proceeds from the sale in July 2006 of common stock under the March 2006 purchase commitment, will be sufficient to fund our operations through March 2007. Under the March 2006 purchase commitment, the investor has agreed to purchase up to \$9.8 million of our common stock in up to three drawdowns made at our discretion. Our ability to access the remaining \$6.3 million of this commitment and sell common stock to the investor is subject to the effectiveness of a registration statement covering the resale of the shares to be sold. If we are able to access the full purchase commitment and sell the remaining \$6.3 million under it, we expect to have sufficient cash and investments to be able to pursue our clinical and preclinical development programs and continue operations through August 2007.



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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. As a result, in order for us to continue to pursue our clinical and preclinical development programs and continue operations beyond March 2007, or August 2007 if we draw down all of the funds pursuant to the purchase commitment, we must raise additional funds in 2007 from debt, equity financings or from collaborative arrangements with biotechnology or pharmaceutical companies. There can be no assurance that the requisite funds will be available in the necessary time frame or on terms acceptable to us. Should we be unable to raise sufficient funds, we may be required to significantly curtail our operating plans and possibly relinquish rights to portions of our technology or products. In addition, increases in expenses or delays in clinical development may adversely impact our cash position and require further cost reductions. No assurance can be given that we will be able to operate profitably on a consistent basis, or at all, in the future.

We believe that the key factors that will affect our internal and external sources of cash are:

- the success of our clinical and preclinical development programs;
- the receptivity of the capital markets to financings by biotechnology companies; and
- our ability to enter into strategic collaborations with biotechnology and pharmaceutical companies and the success of such collaborations.

### *Contractual Obligations*

We have contractual obligations in the form of employment agreements, operating leases and consulting and collaboration agreements.

### **ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

As of June 30, 2006, we have no assets and liabilities related to non-dollar-denominated currencies.

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 investments. We do not own 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 June 30, 2006. 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, 2006, 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, 2006 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**IDERA PHARMACEUTICALS, INC.**

**PART II — OTHER INFORMATION**

**ITEM 1A. 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 in this quarterly report of 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 when our recognition of revenues under a license and collaboration agreement resulted in us reporting net income for that year. As of June 30, 2006, we had incurred operating losses of approximately \$321.0 million. We expect to continue 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 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 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 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 discovery and development programs and other operations.*

We will require substantial funds to conduct research and development, including preclinical testing and clinical trials of our drugs. We will also require substantial funds to conduct regulatory activities and to establish commercial manufacturing, marketing and sales capabilities. We believe that, based on our current operating plan, our existing cash, cash equivalents and short-term investments, together with the \$3.5 million that we drew down in July 2006 through the sale of common stock at a price of \$5.12 per share under a purchase commitment, will be sufficient to fund our operations through March 2007. In March 2006, we secured the purchase commitment from an investor to purchase from us up to a total of \$9.8 million of our common stock during the period from June 24, 2006 through December 31, 2006 in up to three drawdowns made by us at our discretion, at a minimum price of \$5.12 per share. Our ability to access the remaining \$6.3 million of this purchase commitment and sell common stock to such investor is subject to the effectiveness of a registration statement covering the resale of such common stock. If we draw down this \$6.3 million, we expect to have sufficient cash and investments to be able to pursue our clinical and preclinical development programs and continue operations through August 2007.

We will need to raise additional funds to operate our business beyond such time. We believe that the key factors that will affect our ability to obtain additional funding are:

- the success of our clinical and preclinical development programs;
- the receptivity of the capital markets to financings by biotechnology companies; and
- our ability to enter into 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 arrangements with collaborators or others that may require us to relinquish rights to some of our technologies, drug candidates or drugs which 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. 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. 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 are depending heavily on the success of our lead drug candidate, IMO-2055, which is in clinical development. If we are unable to commercialize this product, or experience significant delays in doing so, our business will be materially harmed.***

We are investing a significant portion of our time and financial resources in the development of our lead drug candidate, IMO-2055. We anticipate that our ability to generate product revenues will depend heavily on the successful development and commercialization of this product. The commercial success of this product will depend on several factors, including the following:

- acceptable safety profile during the trial and during commercial use;
- successful completion of clinical trials;
- receipt of marketing approvals from the U.S. Food and Drug Administration, or the FDA, and equivalent foreign regulatory authorities;
- establishing commercial manufacturing arrangements with third-party manufacturers;
- launching commercial sales of the product, whether alone or in collaboration with others; and
- acceptance of the product in the medical community and with third-party payors.

Our efforts to commercialize this product are at an early stage, as we are currently conducting a Phase 2 clinical trial in patients with metastatic or recurrent clear cell renal carcinoma. If we are not successful in commercializing this product, or are significantly delayed in doing so, our business will be materially harmed.

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

We may not be able to successfully complete any clinical trial of a potential product within any specified time period. In some cases, we may not be able to complete the trial at all. Moreover, clinical trials may not show our potential products to be both safe and efficacious. Thus, the FDA and other regulatory authorities may not approve any of our potential products for any indication.

In order to obtain regulatory approvals for the commercial sale of our products, we will be required to complete extensive clinical trials in humans to demonstrate the safety and efficacy of our drug candidates. We may not be able to obtain authority from the FDA or other equivalent foreign regulatory agencies to complete these trials or commence and complete any other clinical trials.

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. A failure of one or more of our clinical trials can occur at any stage of testing. Further, there is to date little data on the long-term clinical safety of our lead compounds under conditions of prolonged use in humans, or on any long-term consequences subsequent to human use. We may experience numerous unforeseen events during, or as a result of, preclinical testing and the clinical trial process that could delay or inhibit our ability to receive regulatory approval or to commercialize our products, including:

- regulators or institutional review boards may not authorize us to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- our preclinical tests or clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional preclinical testing or clinical trials or we may abandon projects that we expect may not be promising;

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- we might have to suspend or terminate our clinical trials if the participating patients are being exposed to unacceptable health risks;
- regulators or institutional review boards may require that we hold, suspend or terminate clinical research for various reasons, including noncompliance with regulatory requirements;
- the cost of our clinical trials may be greater than we currently anticipate; and
- the effects of our products may not be the desired effects or may include undesirable side effects or the products may have other unexpected characteristics.

As an example, in 1997, after reviewing the results from the clinical trial of GEM91, a first generation antisense compound and our lead drug candidate at the time, we determined not to continue the development of GEM91 and suspended clinical trials of this product candidate.

The rate of completion of clinical trials is dependent in part upon the rate of enrollment of patients. We originally planned to recruit a minimum of 46 patients who had previously failed one prior therapy, who we refer to as second-line patients, into the first stage of our Phase 2 trial of IMO-2055 in renal cell carcinoma. As of October 2005, our enrollment of second-line patients was less than anticipated, whereas the enrollment of treatment-naïve patients was more than expected. As a result, we amended the trial protocol in October 2005 to accommodate statistical endpoints for both treatment-naïve and second-line patients, thus extending the completion of the trial beyond the time we expected. As a result, we are now seeking to enroll up to 92 patients in the first stage of the trial, and we plan to continue patient recruitment into the second half of 2006. Recruitment has been slower than projected because of the recent approval of two new therapies, Sutent® and Nexavar®, for treatment of renal cell carcinoma. 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,
- the existence of competitive clinical trials, and
- the availability of alternative treatments.

Our product development costs will increase if we experience delays in our clinical trials. We do not know whether planned 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.

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

The biotechnology industry is highly competitive and characterized by rapid and significant technological change. We face, and will continue to face, intense competition from organizations such as pharmaceutical and biotechnology companies, as well as academic and research institutions and government agencies. Some of these organizations are pursuing products based on technologies similar to our technologies. Other of these organizations have developed and are marketing products, or are pursuing other technological approaches designed to produce products, that are competitive with our product candidates in the therapeutic effect these competitive products have on diseases targeted by our product candidates. 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. As examples, the FDA recently approved Sutent® and Nexavar® for use in renal cell carcinoma, which is the indication for which we are evaluating IMO-2055 monotherapy in our Phase 2 trial. Two of our competitors are currently evaluating TLR9 agonists in Phase 3 clinical trials.

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Many of our competitors are substantially larger than we are and have greater capital resources, research and development staffs and facilities than we have. In addition, many of our competitors are more experienced than we are in drug discovery, development and commercialization, obtaining regulatory approvals and drug manufacturing and marketing.

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 to secure sufficient capital resources for the period between technological conception and commercial sales.

***Because the products that we may develop will be based on new technologies and therapeutic approaches, the market may not be receptive to these products upon their introduction.***

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 the medical community and third-party payors as clinically useful, cost-effective and safe. Many of the products that we are developing are based upon technologies or therapeutic approaches that are relatively new and unproven. The FDA has not granted marketing approval to any products based on IMO technology or TLR9 agonists, and no such products are currently being marketed. As a result, it may be more difficult for us to achieve regulatory approval or market acceptance of our products. In addition, if products based upon TLR technology being developed by our competitors have negative preclinical or clinical trial results or otherwise are viewed negatively, such events could negatively impact the perception of our TLR technology and market acceptance of our products. Our efforts to educate the medical community on these 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.

***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 Sudhir Agrawal and Robert Karr. Dr. Agrawal serves as our Chief Executive Officer and Chief Scientific Officer. Dr. Karr serves as our President. Dr. Agrawal has made significant contributions to the field of antisense technology, and has led the development of IMO Technology. He is named as an inventor on over 230 patents and patent applications worldwide. Dr. Karr has extensive experience in the pharmaceutical industry. Drs. Agrawal and Karr provide us leadership for management, research and development activities. The loss of either Dr. Agrawal's or Dr. Karr'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 for a term ending on October 19, 2008, subject to annual renewals. 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.

We are a party to an employment agreement with Dr. Karr for a term ending on December 5, 2007, subject to annual renewals. This agreement may be terminated by us or Dr. Karr 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. Karr.

Our future growth will require hiring a significant number of qualified technical and management personnel. 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 grow.

### **Regulatory Risks**

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

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All of the products that we are developing or may develop in the future will require additional research and development, extensive preclinical studies and 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. In 1997, we determined not to continue clinical development of GEM91, our lead product candidate at the time. Currently, we are conducting clinical trials of IMO-2055.

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.

***We are subject to comprehensive regulatory requirements, with which compliance is costly and time-consuming; 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 agency at any time after initiation, based on new information available after the initial authorization to commence clinical trials. 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.

Any regulatory approval of a product may contain limitations on the 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, violations of regulatory requirements may result in:

- the regulatory agency's delay in approving, or refusal to approve, an application for approval of a product;
- restrictions on such products or the manufacturing of such products;
- withdrawal of the products from the market;
- warning letters;
- voluntary or mandatory recall;
- fines;
- suspension or withdrawal of regulatory approvals;
- product seizure;
- 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.***

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We have only limited experience in filing the applications necessary to gain 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.

### **Risks Relating to Collaborators**

*We need to establish collaborative relationships in order to succeed.*

An important element of our business strategy includes entering into collaborative relationships for the development and commercialization of products based on our discoveries. We face significant competition in seeking appropriate collaborators. Moreover, these arrangements are complex to negotiate and time-consuming to document. We may not be successful in our efforts to establish collaborative relationships or other alternative arrangements.

The success of collaboration arrangements will depend heavily on the efforts and activities of our collaborators. Our collaborators will have significant discretion in determining the efforts and resources that they will apply to these collaborations. The risks that we face in connection with these collaborations include the following:

- disputes may arise in the future with respect to the ownership of rights to technology developed with collaborators;
- disagreements with 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 one of our collaborators fails 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;
- collaborators have considerable discretion in electing whether to pursue the development of any additional drugs and may pursue technologies or products either on their own or in collaboration with our competitors that are similar to or competitive with our technologies or products that are the subject of the collaboration with us; and
- 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. 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.

Given these risks, it is possible that any collaborative arrangements into which we enter may not be successful. In May 2005, we entered into collaborative arrangements with Novartis involving our IMO technology for application in asthma and allergies. Previous collaborative arrangements to which we were a party with F. Hoffmann-La Roche and G.D. Searle & Co., involving our antisense technology, were terminated prior to the development of any product. The failure of any of our collaborative relationships could delay our drug development or impair commercialization of our products.

### **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;

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- operate without infringing upon the proprietary rights of others;
- prevent others from infringing on our proprietary rights; and
- protect trade secrets.

We do not know whether any of our patent applications or those patent applications that we in-license will result in the issuance of any patents. Our issued patents and those that may issue 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. Furthermore, our competitors may independently develop similar technologies or duplicate any technology developed by us. 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 of 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.

***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.***

We may not have rights under some 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. Therefore, in some cases, 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 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.***

We are party to six license agreements in the field of antisense technology under which we have acquired rights to patents, patent applications and technology of third parties. 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 2006 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 in which 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, or USPTO, for certain 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, including the interferences referred to above, 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,



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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, we are dependent on third-party manufacturers to manufacture products 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 commercial scale manufacturing capabilities. In order to continue to develop our products, 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 preclinical 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.

There are a limited number of manufacturers that operate under the FDA's current good manufacturing practices regulations capable of manufacturing our products. 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 products on a timely basis, or to do so on commercially reasonable terms, we may not be able to complete development of our products or market them.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured products 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 any such third-party manufacturer will develop know-how owned by such third party in connection with the production of our products that is necessary for the manufacture of our products, and
- reliance upon third-party manufacturers to assist us in preventing inadvertent disclosure or theft of our proprietary knowledge.

We purchased oligonucleotides for preclinical and clinical testing from Avecia Biotechnology at a preferential price under a supply agreement, which expired in March 2004. We have continued to purchase all of the oligonucleotides we are using in our ongoing clinical trials and preclinical testing from Avecia. The terms of the agreement have been extended until such time as a new agreement is negotiated. If Avecia determines not to accept any purchase order for oligonucleotides or we are unable to enter into a new manufacturing arrangement with Avecia or a new contract manufacturer on a timely basis or at all, our ability to supply the product needed for our clinical trials could be materially impaired. The services of multiple third-party manufacturers are utilized to accomplish the final portion of the manufacturing process.

***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 products, 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 products directly, we would need to develop a marketing and sales force with technical expertise and with supporting distribution capability. In

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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 products. We depend on independent clinical investigators, contract research organizations and other third-party service providers in the conduct of the clinical trials of our products and expect to continue to do so. For example, we have contracted with PAREXEL International to manage our Phase 2 clinical trial of IMO-2055 in renal cell carcinoma. 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 requires us to comply with standards, commonly referred to as good clinical practices, for conducting, recording and reporting clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity and confidentiality of 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 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 products. 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.

***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 will rely on Medicare and 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 recently enacted a limited prescription drug benefit for Medicare recipients in the Medicare Prescription Drug and Modernization Act of 2003. While the program established by this statute may increase demand for our products, if we 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 to twelve 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 product 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.

Third-party payors are challenging the prices charged for medical products and services, and many third-party payors limit reimbursement for newly-approved healthcare products. 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 may develop, which would result in lower product revenues 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. 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, our 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.

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, 2005 to June 30, 2006, the closing sales price of our common stock, as adjusted to reflect the one-for-eight reverse split of our common stock effected on June 29, 2006, ranged from a high of \$6.48 per share to a low of \$2.88 per share. The stock market has also experienced significant price and volume fluctuations, 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:

- results of clinical trials of our product candidates or those of our competitors;
- the regulatory status of our product candidates;
- failure of any of our product candidates, if approved, to achieve commercial success;
- the success of competitive products or technologies;
- regulatory developments in the United States and foreign countries;
- 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.

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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.

***We may be unable to repay our 4% convertible subordinated notes when due or to repurchase the convertible subordinated notes if we are required to do so under the terms of our agreement with the holders of the 4% convertible subordinated notes.***

In May 2005, we sold approximately \$5.0 million in principal amount of 4% convertible subordinated notes. On April 30, 2008, the entire outstanding principal amount of our 4% convertible subordinated notes will become due and payable, unless the notes are converted to common stock prior to expiration. In addition, we may be required to redeem all or part of the convertible subordinated notes prior to the final maturity date if specified events occur. We may not have sufficient funds or may be unable to arrange for additional financing to pay the amount due under the convertible subordinated notes at maturity or to pay the price to repurchase the convertible subordinated notes. Any future borrowing arrangements or debt agreements to which we may become a party may restrict or prohibit us from repaying or repurchasing the convertible subordinated notes. If we are prohibited from repaying or repurchasing the convertible subordinated notes, we could try to obtain the consent of lenders under those arrangements, or we could attempt to refinance the indebtedness that contains the restrictions. If we could not obtain the necessary consents or refinance the indebtedness, we would be unable to repay or repurchase the convertible subordinated notes. Any such failure would constitute an event of default under the agreement with the holders of the 4% convertible subordinated notes, which could, in turn, constitute a default under the terms of any future indebtedness.

***You may suffer additional dilution if we issue additional shares to the investor under the Common Stock Purchase Agreement.***

In March 2006, we entered into a Common Stock Purchase Agreement with an investor. Under this agreement, we secured a purchase commitment from the investor to purchase from us up to a total of \$9.8 million of our common stock during the period from June 24, 2006 through December 31, 2006 in up to three drawdowns made by us, at our discretion. In July 2006, we drew down \$3.5 million of this commitment through the sale of 683,593 shares of common stock, and in the future may drawdown the remaining \$6.3 million through the sale of additional shares of common stock. In each drawdown, the shares of common stock will be sold at a price equal to 80% of the volume weighted average of the closing prices of the common stock on the five trading days preceding the drawdown notice, but such purchase price in no event will be less than a floor price of \$5.12 per share. Based on this floor price, a maximum of 1,220,703 additional shares of common stock could be issued with respect to the remaining \$6.3 million of common stock available under the purchase commitment. We are not obligated to sell any of the remaining \$6.3 million of common stock available under the purchase commitment and there are no minimum commitments or minimum use penalties. If we issue shares of our common stock to the investor pursuant to the purchase commitment, our then existing stockholders will experience dilution.

[Table of Contents](#)**ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS**

On June 7, 2006, the proposals listed below were voted on and approved at the annual meeting of stockholders. These votes have not been adjusted for the effects of the one-for-eight reverse split of the Company's common stock that was effected on June 29, 2006.

<b>Proposal</b>	<b>For</b>	<b>Against/Withheld</b>	<b>Abstain</b>	<b>Broker Non-Votes</b>
To elect Dr. Robert W. Karr to serve as a Class II Director until the 2009 annual meeting of stockholders	99,480,843	1,227,217	—	—
To elect and Dr. James B. Wyngaarden to serve as a Class II Director until the 2009 annual meeting of stockholders	99,473,204	1,234,856	—	—
To approve an amendment to the Company's Restated Certificate of Incorporation increasing the number of authorized shares of the Company's Common stock from 200,000,000 to 290,000,000 shares	97,433,892	2,925,448	348,720	—
To approve an amendment to the Company's 2005 Stock Incentive Plan increasing the number of shares of the Company's Common Stock authorized for issuance from 5,000,000 to 9,000,000 shares	54,911,887	3,448,669	900,639	—
To approve an amendment to the Company's 1995 Employee Stock Purchase Plan increasing the number of shares of the Company's Common Stock authorized for issuance from 500,000 to 1,000,000 shares	56,267,627	2,840,682	152,886	—
To approve an amendment to the Company's Restated Certificate of Incorporation to effect a one-for-four reverse split of the Company's issued and outstanding shares of Common Stock and to fix on a post-split basis the number of authorized shares of Common Stock at 75,000,000 shares to be effected in the sole discretion of the Board of Directors	95,289,003	4,216,764	1,202,293	—
To approve an amendment to the Company's Restated Certificate of Incorporation to effect a one-for-six reverse split of the Company's issued and outstanding shares of Common Stock and to fix on a post-split basis the number of authorized shares of Common Stock at 50,000,000 shares to be effected in the sole discretion of the Board of Directors	94,859,693	4,662,554	1,185,813	—
To approve an amendment to the Company's Restated Certificate of Incorporation to effect a one-for-eight reverse split of the Company's issued and outstanding shares of Common Stock and to fix on a post-split basis the number of authorized shares of Common Stock at 40,000,000 shares to be effected in the sole discretion of the Board of Directors	95,793,362	4,800,253	114,445	—
To approve an amendment to the Company's Restated Certificate of Incorporation to effect a one-for-ten reverse split of the Company's issued and outstanding shares of Common Stock and to fix on a post-split basis the number of authorized shares of Common Stock at 35,000,000 shares to be effected in the sole discretion of the Board of Directors	94,534,644	4,744,603	1,428,813	—

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In addition to the two directors listed above who were elected at the meeting, the terms of the following directors continued after the meeting: Dr. Sudhir Agrawal, Mr. Youssef El Zein, Mr. C. Keith Hartley, Mr. William S. Reardon and Dr. Alison Taunton-Rigby. Dr. Paul C. Zamecnik, a former Class II Director, decided not to stand for reelection.

**ITEM 6. EXHIBITS.**

The list of Exhibits filed as part of this Quarterly Report on Form 10-Q are 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 14, 2006

/s/ Sudhir Agrawal

Sudhir Agrawal  
Chief Executive Officer, Chief Scientific  
Officer and Director  
(Principal Executive Officer)

Date: August 14, 2006

/s/ Robert G. Andersen

Robert G. Andersen  
Chief Financial Officer and Vice President of Operations  
(Principal Financial and Accounting Officer)

**Exhibit Index**

**Exhibit No.**

3.1	Restated Certificate of Incorporation, as amended.
10.1(1)	Employment agreement dated April 13, 2006 between Idera Pharmaceuticals, Inc. and Robert G. Andersen.
10.2	Amendment No. 1, dated July 10, 2006, to the Common Stock Purchase Agreement, dated March 24, 2006, by and among Idera Pharmaceuticals, Inc. and Biotech Shares, Ltd.
10.3	Amendment No. 1, dated June 23, 2006, to the Registration Rights Agreement, dated March 24, 2006, by and among Idera Pharmaceuticals, Biotech Shares Ltd. and Youssef E1 Zein.
10.4	2005 Stock Incentive Plan, as amended.
10.5	Amendment No. 1 to 1995 Employee Stock Purchase Plan, dated June 2006.
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.

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(1) previously filed with the Securities and Exchange Commission as an Exhibit to the Registrant's Quarterly Report of Form 10-Q, for the quarter ended March 31, 2006 (File No. 001-31918) and incorporated herein by reference.

RESTATED  
CERTIFICATE OF INCORPORATION  
OF  
HYBRIDON, INC.

Hybridon, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

1. The Corporation filed its original Certificate of Incorporation with the Secretary of State of Delaware on May 25, 1989, which Certificate of Incorporation was amended by a Certificate of Amendment of Certificate of Incorporation filed on February 21, 1990, and amended and restated by a Restated Certificate of Incorporation filed on June 5, 1990. A Restated Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on November 20, 1990, which Restated Certificate of Incorporation was amended by a Certificate of Amendment of Restated Certificate of Incorporation filed on October 16, 1991, a Certificate of Amendment of Restated Certificate of Incorporation filed on March 3, 1992, a Certificate of Amendment of Restated Certificate of Incorporation filed on March 23, 1992, a Certificate of Amendment of Restated Certificate of Incorporation filed on October 23, 1992, a Certificate of Amendment of Restated Certificate of Incorporation filed on February 12, 1993, a Certificate of Amendment of Restated Certificate of Incorporation filed on June 17, 1993, a Certificate

of Amendment of Restated Certificate of Incorporation filed on July 13, 1993, a Certificate of Amendment of Restated Certificate of Incorporation filed on September 9, 1994, a Certificate of Amendment of Restated Certificate of Incorporation filed on July 7, 1995, a Certificate of Amendment of Restated Certificate of Incorporation filed on December 19, 1995, and a Certificate of Retirement of Stock filed on even date herewith.

2. At a meeting of the Board of Directors of the Corporation, a resolution was duly adopted, pursuant to Sections 141(f) and 245 of the General Corporation Law of the State of Delaware, setting forth a Restated Certificate of Incorporation of the Corporation and declaring said Restated Certificate of Incorporation advisable. The resolution setting forth the Restated Certificate of Incorporation is as follows:

RESOLVED: That the Restated Certificate of Incorporation of the Corporation, as amended, be and hereby is amended and restated in its entirety so that the same shall read as follows:

FIRST. The name of the Corporation is:

Hybridon, Inc.

SECOND. The address of its registered office in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle. The name of its registered agent at such address is The Corporation Trust Company.

THIRD. The nature of the business or purposes to be conducted or promoted by the Corporation is as follows:

To engage in any lawful act or activity for which corporations may be organized under the General Corporation Law of Delaware.

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FOURTH. The total number of shares of all classes of stock which the Corporation shall have authority to issue is One Hundred Million (100,000,000) shares of Common Stock, \$.001 par value per share ("Common Stock"), and (ii) Five Million (\$5,000,000) shares of Preferred Stock, \$.01 par value per share ("Preferred Stock"), which may be issued from time to time in one or more series as set forth in Part B of this Articles FOURTH.

The following is a statement of the designations and the powers,



privileges and rights, and the qualifications, limitations or restrictions thereof in respect of each class of capital stock of the Corporation.

A. COMMON STOCK.

1. GENERAL. The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights of the holders of the Preferred Stock of any series as may be designated by the Board of Directors upon any issuance of the Preferred Stock of any series.

2. VOTING. The holders of the Common Stock are entitled to one vote for each share held at all meetings of stockholders (and written actions in lieu of meetings). There shall be no cumulative voting.

The number of authorized shares of Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the stock of the Corporation entitled to vote, irrespective of the provisions of Section 242(b)(2) of the General Corporation Law of Delaware.

3. DIVIDENDS. Dividends may be declared and paid on the Common Stock from funds lawfully available therefor as and when determined by the Board of Directors and subject to any preferential dividend rights of any then outstanding Preferred Stock.

4. LIQUIDATION. Upon the dissolution or liquidation of the Corporation, whether voluntary or involuntary, holders of Common Stock will be entitled to receive all assets of the Corporation available for distribution to its stockholders, subject to any preferential rights of any then outstanding Preferred Stock.

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B. PREFERRED STOCK.

Preferred Stock may be issued from time to time in one or more series, each of such series to have such terms as stated or expressed herein and in the resolution or resolutions providing for the issue of such series adopted by the Board of Directors of the Corporation as hereinafter provided. Any shares of Preferred Stock which may be redeemed, purchased or acquired by the Corporation may be reissued except as otherwise provided by law. Different series of Preferred Stock shall not be construed to constitute different classes of shares for the purposes of voting by classes unless expressly provided.

Authority is hereby expressly granted to the Board of Directors from time to time to issue the Preferred Stock in one or more series, and in connection with the creation of any such series, by resolution or resolutions providing for the issue of the shares thereof, to determine and fix such voting powers, full or limited, or no voting powers, and such designations, preferences and relative participating, optional or other special rights, and qualifications, limitations or restrictions thereof, including without limitation thereof, dividend rights, conversion rights, redemption privileges and liquidation preferences, as shall be stated and expressed in such resolutions, all to the full extent now or hereafter permitted by the General Corporation Law of Delaware. Without limiting the generality of the foregoing, the resolutions providing for issuance of any series of Preferred Stock may provide that such series shall be superior or rank equally or be junior to the Preferred Stock of any other series to the extent permitted by law. Except as otherwise specifically provided in this Certificate of Incorporation, no vote of the holders of the Preferred Stock or Common Stock shall be a prerequisite to the issuance of any shares of any series of the Preferred Stock authorized by and complying with the conditions of the Certificate of Incorporation, the right to have such vote being expressly waived by all present and future holders of the capital stock of the Corporation.

FIFTH. The name and mailing address of the sole incorporator are as follows:

NAME  
----

MAILING ADDRESS  
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SIXTH. In furtherance of and not in limitation of powers conferred by statute, it is further provided:

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1. Election of directors need not be by written ballot.

2. The Board of Directors is expressly authorized to adopt, amend or repeal the By-Laws of the Corporation.

SEVENTH. Whenever a compromise or arrangement is proposed between this corporation and its creditors or any class of them and/or between this corporation and its stockholders or any class of them, any court of equitable jurisdiction within the State of Delaware may, on the application in a summary way of this corporation or of any creditor or stockholder thereof, or on the application of any receiver or receivers appointed for this corporation under the provisions of section 291 of Title 8 of the Delaware Code or on the application of trustees in dissolution or of any receiver or receivers appointed for this corporation under the provisions of section 279 of Title 8 of the Delaware Code order a meeting of the creditors or class of creditors, and/or of the stockholders or class of stockholders of this corporation, as the case may be, to be summoned in such manner as the said court directs. If a majority in number representing three-fourths in value of the creditors or class of creditors, and/or of the stockholders or class of stockholders of this corporation, as the case may be, agree to any compromise or arrangement and to any promise or arrangement, the said compromise or arrangement and the said reorganization shall, if sanctioned by the court to which the said application has been made, be binding on all the creditors or class of creditors, and/or on all the stockholders or class of stockholders, of this corporation, as the case may be, and also on this corporation.

EIGHTH. Except to the extent that the General Corporation Law of the State of Delaware prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty, no director of the Corporation shall be personally liable to the Corporation or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability. No amendment to or repeal of this provision shall apply to or have any effect on the liability or alleged liability of any director of the Corporation for or with respect to any acts or omissions of such director occurring prior to such amendment.

NINTH. 1. ACTION, SUITS AND PROCEEDINGS OTHER THAN BY OR IN THE RIGHT OF THE CORPORATION. The Corporation shall indemnify each person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Corporation), by reason of the fact that he is or was, or has

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agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) (all such persons being referred to hereafter as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) judgment, fines and amounts paid in settlement actually and reasonably incurred by him or on his behalf in connection with such action, suit or proceeding and any appeal therefrom, if he acted in good faith and in a manner he reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. The termination of any action, suit or proceeding by judgment, order, settlement, conviction or upon a plea of NOLO CONTENDERE or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which he reasonably believed to be in, or not opposed to, the best interests of the Corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that his conduct was unlawful. Notwithstanding anything to the contrary in this Article, except as set forth in Section 6 below, the Corporation shall not indemnify an Indemnitee seeking indemnification in connection with a proceeding (or part

thereof) initiated by the Indemnitee unless the initiation thereof was approved by the Board of Directors of the Corporation.

2. ACTIONS OR SUITS BY OR IN THE RIGHT OF THE CORPORATION. The Corporation shall indemnify any Indemnitee who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the Corporation to procure a judgment in its favor by reason of the fact that he is or was, or has agreed to become, a director or officer of the Corporation, or is or was serving, or has agreed to serve, at the request of the Corporation, as a director, officer or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and amounts paid in settlement actually and reasonably incurred by him or on his behalf in connection with such action, suit or proceeding and any appeal therefrom, if he acted in good faith and in a manner he reasonably believed to be in, or not opposed to, the best interests of the Corporation, except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the Corporation unless and only to the extent that the Court of Chancery of Delaware or

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the court in which such action or suit was brought shall determine upon application that, despite the adjudication of such liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses (including attorneys' fees) which the Court of Chancery of Delaware or such other court shall deem proper.

3. INDEMNIFICATION FOR EXPENSES OF SUCCESSFUL PARTY. Notwithstanding the other provisions of this Article, to the extent that an Indemnitee has been successful, on the merits or otherwise, in defense of any action, suit or proceeding referred to in Sections 1 and 2 of this Article, or in defense of any claim, issue or matter therein, or on appeal from any such action, suit or proceeding, he shall be indemnified against all expenses (including attorneys' fees) actually and reasonably incurred by him or on his behalf in connection therewith. Without limiting the foregoing, if any action, suit or proceeding is disposed of, on the merits or otherwise (including a disposition without prejudice), without (i) the disposition being adverse to the Indemnitee, (ii) an adjudication that the Indemnitee was liable to the Corporation, (iii) a plea of guilty or NOLLO CONTENDERE by the Indemnitee, (iv) an adjudication that the Indemnitee did not act in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Corporation, and (v) with respect to any criminal proceeding, an adjudication that the Indemnitee had reasonable cause to believe his conduct was unlawful, the Indemnitee shall be considered for the purposes hereof to have been wholly successful with respect thereto.

4. NOTIFICATION AND DEFENSE OF CLAIM. As a condition precedent to his right to be indemnified, the Indemnitee must notify the Corporation in writing as soon as practicable of any action, suit, proceeding or investigation involving him for which indemnity will or could be sought. With respect to any action, suit, proceeding or investigation of which the Corporation is so notified, the Corporation will be entitled to participate therein at its own expense and/or to assume the defense thereof at its own expense, with legal counsel reasonably acceptable to the Indemnitee. After notice from the Corporation to the Indemnitee of its election so to assume such defense, the Corporation shall not be liable to the Indemnitee for any legal or other expenses subsequently incurred by the Indemnitee in connection with such claim, other than as provided below in this Section 4. The Indemnitee shall have the right to employ his own counsel in connection with such claim, but the fees and expenses of such counsel incurred after notice from the Corporation of its assumption of the defense thereof shall be at the expense of the Indemnitee unless (i) the employment of counsel by the Indemnitee has been authorized by the Corporation, (ii) counsel to the Indemnitee shall have reasonably concluded that there may be a

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conflict of interest or position on any significant issue between the Corporation and the Indemnitee in the conduct of the defense of such action or (iii) the Corporation shall not in fact have employed counsel to assume the defense of such action, in each of which cases the fees and expenses of counsel for the Indemnitee shall be at the expense of the Corporation, except as

otherwise expressly provided by this Article. The Corporation shall not be entitled, without the consent of the Indemnitee, to assume the defense of any claim brought by or in the right of the Corporation or as to which counsel for the Indemnitee shall have reasonably made the conclusion provided for in clause (ii) above.

5. ADVANCE OF EXPENSES. Subject to the provisions of Section 6 below, in the event that the Corporation does not assume the defense pursuant to Section 4 of this Article of any action, suit, proceeding or investigation of which the Corporation receives notice under this Article, any expenses (including attorneys' fees) incurred by an Indemnitee in defending a civil or criminal action, suit, proceeding or investigation or any appeal therefrom shall be paid by the Corporation in advance of the final disposition of such matter, PROVIDED, HOWEVER, that the payment of such expense incurred by an Indemnitee in advance of the final disposition of such matter shall be made only upon receipt of an undertaking by or on behalf of the Indemnitee to repay all amounts so advanced in the event that it shall ultimately be determined that the Indemnitee is not entitled to be indemnified by the Corporation as authorized in this Article. Such undertaking may be accepted without reference to the financial ability of such person to make such repayment.

6. PROCEDURE FOR INDEMNIFICATION. In order to obtain indemnification or advancement of expenses pursuant to Section 1, 2, 3 or 5 of this Article, the Indemnitee shall submit to the Corporation a written request, including in such request such documentation and information as is reasonably available to the Indemnitee and is reasonably necessary to determine whether and to what extent the Indemnitee is entitled to indemnification or advancement of expenses. Any such indemnification or advancement of expenses shall be made promptly, and in any event within 60 days after receipt by the Corporation of the written request of the Indemnitee, unless with respect to requests under Section 1, 2 or 5 the Corporation determines, by clear and convincing evidence, within such 60-day period that the Indemnitee did not meet the applicable standard of conduct set forth in Section 1 or 2, as the case may be. Such determination shall be made in each instance by (a) a majority vote of a quorum of the directors of the Corporation consisting of persons who are not at that time parties to the action, suit or proceeding in question ("disinterested directors"), (b) if no such quorum is obtainable, a majority vote of a committee of two or more disinterested directors,

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(c) a majority vote of a quorum of the outstanding shares of stock of all classes entitled to vote for directors, voting as a single class, which quorum shall consist of stockholders who are not at that time parties to the action, suit or proceeding in question, (d) independent legal counsel (who may be regular legal counsel to the Corporation), or (e) a court of competent jurisdiction.

7. REMEDIES. The right to indemnification or advances as granted by this Article shall be enforceable by the Indemnitee in any court of competent jurisdiction if the Corporation denies such request, in whole or in part, or if no disposition thereof is made within the 60-day period referred to above in Section 6. Unless otherwise provided by law, the burden of proving that the Indemnitee is not entitled to indemnification or advanced of expenses under this Article shall be on the Corporation. Neither the failure of the Corporation to have made a determination prior to the commencement of such action that indemnification is proper in the circumstances because the Indemnitee has met the applicable standard of conduct, nor an actual determination by the Corporation pursuant to Section 6 that the Indemnitee has not met such applicable standard of conduct, shall be a defense to the action or create a presumption that the Indemnitee has not met the applicable standard of conduct. The Indemnitee's expenses (including attorneys' fees) incurred in connection with successfully establishing his right to indemnification, in whole or in part, in any such proceeding shall also be indemnified by the Corporation.

8. SUBSEQUENT AMENDMENT. No amendment, termination or repeal of this Article or of the relevant provisions of the General Corporation Law of Delaware or any other applicable laws shall affect or diminish in any way the rights of any Indemnitee to indemnification under the provisions hereof with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or facts occurring prior to the final adoption of such amendment, termination or repeal.

9. OTHER RIGHTS. The indemnification and advancement of expenses provided by this Article shall not be deemed exclusive of any other rights to

which an Indemnitee seeking indemnification or advancement of expenses may be entitled under any law (common or statutory), agreement or vote of stockholders or disinterested directors or otherwise, both as to action in his official capacity and as to action in any other capacity while holding office for the Corporation, and shall continue as to an Indemnitee who has ceased to be a director or officer, and shall inure to the benefit of the estate, heirs, executors and administrators of the Indemnitee. Nothing contained in this Article shall be deemed to prohibit, and the Corporation is specifically authorized to enter into, agreements with officers and directors providing

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indemnification rights and procedures different from those set forth in this Article. In addition, the Corporation may, to the extent authorized from time to time by its Board of Directors, grant indemnification rights to other employees or agents of the Corporation or other persons serving the Corporation and such rights may be equivalent to, or greater or less than, those set forth in this Article.

10. PARTIAL INDEMNIFICATION. If an Indemnitee is entitled under any provision of this Article to indemnification by the Corporation for some or a portion of the expenses (including attorneys' fees), judgments, fines or amounts paid in settlement actually and reasonably incurred by him or on his behalf in connection with any action, suit, proceeding or investigation and any appeal, therefrom but not, however, for the total amount thereof, the Corporation shall nevertheless indemnify the Indemnitee for the portion of such expenses (including attorneys' fees), judgments, fines or amounts paid in settlement to which the Indemnitee is entitled.

11. INSURANCE. The Corporation may purchase and maintain insurance, at its expense, to protect itself and any director, officer, employee or agent of the Corporation or another corporation, partnership, joint venture, trust or other enterprise (including any employee benefit plan) against any expense, liability or loss incurred by him in any such capacity, or arising out of his status as such, whether or not the Corporation would have the power to indemnify such person against such expense, liability or loss under the General Corporation law of Delaware.

12. MERGER OR CONSOLIDATION. If the Corporation is merged into or consolidated with another corporation and the Corporation is not the surviving corporation, the surviving corporation shall assume the obligations of the Corporation under this Article with respect to any action, suit, proceeding or investigation arising out of or relating to any actions, transactions or facts occurring prior to the date of such merger or consolidation.

13. SAVINGS CLAUSE. If this Article or any portion hereof shall be invalidated on any ground by any court of competent jurisdiction, then the Corporation shall nevertheless indemnify each Indemnitee as to any expenses (including attorneys' fees) judgments, fines and amounts paid in settlement in connection with any action, suit, proceeding or investigation, whether civil, criminal or administrative, including an action by or in the right of the Corporation, to the fullest extent permitted by any applicable portion of this Article that shall not have been invalidated and to the fullest extent permitted by applicable law.

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14. DEFINITIONS. Terms used herein and defined in Section 145(h) and Section 145(i) of the General Corporation Law of Delaware shall have the respective meanings assigned to such terms in such Section 145(h) and Section 145(i).

15. SUBSEQUENT LEGISLATION. If the General Corporation Law of Delaware is amended after adoption of this Article to expand further the indemnification permitted to Indemnitees, then the Corporation shall indemnify such persons to the fullest extent permitted by the General Corporation Law of Delaware, as so amended.

TENTH. The Corporation reserves the right to amend, alter, change or repeal any provision contained in this Restated Certificate of Incorporation, in the manner now or hereafter prescribed by statute and this Restated Certificate of Incorporation, and all rights conferred upon stockholders herein are granted subject to this reservation.

ELEVENTH. This Article is inserted for the management of the business

and for the conduct of the affairs of the Corporation and shall not become effective until the closing of the sale of shares of Common Stock in an underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, resulting in at least \$10,000,000 of gross proceeds to the Corporation (a "Public Offering").

1. NUMBER OF DIRECTORS. The number of directors of the Corporation shall not be less than three. The exact number of directors within the limitations specified in the preceding sentence shall be fixed from time to time by, or in the manner provided in, the Corporation's By-Laws.

2. CLASSES OF DIRECTORS. The Board of Directors shall be and is divided into three classes: Class I, Class II and Class III. No one class shall have more than one director more than any other class. If a fraction is contained in the quotient arrived at by dividing the designated number of directors by three, then, if such fraction is one-third, the extra director shall be a member of Class II, and if such fraction is two-thirds, one of the extra directors shall be a member of Class I and one of the extra directors shall be a member of Class II, unless otherwise provided from time to time by resolution adopted by the Board of Directors.

3. ELECTION OF DIRECTORS. Elections of directors need not be by written ballot except as and to the extent provided in the By-Laws of the Corporation.

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4. TERMS OF OFFICE. Each director shall serve for a term ending on the date of the third annual meeting following the annual meeting at which such director was elected; PROVIDED, that each initial director in Class I shall serve for a term ending on the date of the annual meeting in 1996; each initial director in Class II shall serve for a term ending on the date of the annual meeting in 1997; and each initial director in Class III shall serve for a term ending on the date of the annual meeting in 1998; and PROVIDED FURTHER, that the term of each director shall be subject to the election and qualification of his successor and to his earlier death, resignation or removal.

5. ALLOCATION OF DIRECTORS AMONG CLASSES IN THE EVENT OF INCREASES OR DECREASES IN THE NUMBER OF DIRECTORS. In the event of any increase or decrease in the authorized number of directors, (i) each director then serving as such shall nevertheless continue as a director of the class of which he is a member and (ii) the newly created or eliminated directorships resulting from such increase or decrease shall be apportioned by the Board of Directors among the three classes of directors so as to ensure that no one class has more than one director more than any other class. To the extent possible, consistent with the foregoing rule, any newly created directorships shall be added to those classes whose terms of office are to expire at the latest dates following such allocation, and any newly eliminated directorships shall be subtracted from those classes whose terms of offices are to expire at the earliest dates following such allocation, unless otherwise provided from time to time by resolution adopted by the Board of Directors.

6. QUORUM; ACTION AT MEETING. A majority of the directors at any time in office shall constitute a quorum for the transaction of business. In the event one or more of the directors shall be disqualified to vote at any meeting, then the required quorum shall be reduced by one for each director so disqualified, provided that in no case shall less than one-third of the number of directors fixed pursuant to Section 1 above constitute a quorum. If at any meeting of the Board of Directors there shall be less than such a quorum, a majority of those present may adjourn the meeting from time to time. Every act or decision done or made by a majority of the directors present at a meeting duly held at which a quorum is present shall be regarded as the act of the Board of Directors unless a greater number is required by law, by the By-Laws of the Corporation or by this Restated Certificate of Incorporation.

7. REMOVAL. Directors of the Corporation may be removed only for cause by the affirmative vote of the holders of at least two-thirds of the shares of the capital stock of the Corporation issued and outstanding and entitled to vote.

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8. VACANCIES. Any vacancy in the Board of Directors, however occurring, including a vacancy resulting from an enlargement of the board, shall be filled only by a vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director. A director elected to fill a vacancy

shall be elected to hold office until the next election of the class for which such director shall have been chosen, subject to the election and qualification of his successor and to his earlier death, resignation or removal.

9. STOCKHOLDER NOMINATIONS AND INTRODUCTION OF BUSINESS, ETC. Advance notice of stockholder nominations for election of directors and other business to be brought by stockholders before a meeting of stockholders shall be given in the manner provided by the By-Laws of the Corporation.

10. AMENDMENTS TO ARTICLE. Notwithstanding any other provisions of law, this Restated Certificate of Incorporation or the By-Laws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the shares of capital stock of the Corporation issued and outstanding and entitled to vote shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article ELEVENTH.

TWELFTH. Until the closing of a Public Offering, any action which is required to be taken or which may be taken at any annual or special meeting of stockholders of the Corporation may be taken without a meeting, without prior notice and without a vote, if a consent in writing, setting forth the action so taken, is signed by the holders of outstanding stock having not less than the minimum number of votes that would be necessary to authorize or take such action at a meeting at which all shares entitled to vote on such action were present and voted. Effective upon the closing of a Public Offering, stockholders of the Corporation may not take any action by written consent in lieu of a meeting. Notwithstanding any other provisions of law, the Restated Certificate of Incorporation or the By-Laws of the Corporation, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the shares of capital stock of the Corporation issued and outstanding and entitled to vote shall be required to amend or repeal, or to adopt any provision inconsistent with, this Article TWELFTH.

THIRTEENTH. Effective upon the closing of a Public Offering, special meetings of stockholders may be called at any time by only the Chief Executive Officer (or if there is no Chief Executive Officer, the President) or the Board of Directors. Business transacted at any special meeting of stockholders shall be limited

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to matters relating to the purpose or purposes stated in the notice of meeting. Notwithstanding any other provision of law, this Restated Certificate of Incorporation or the By-Laws of the Corporation, as amended, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the shares of capital stock of the Corporation issued and outstanding and entitled to vote shall be required to amend or repeal, or to adopt any provision inconsistent with this Article THIRTEENTH.

IN WITNESS WHEREOF, the Corporation has caused its corporate seal to be affixed hereto and this Restated Certificate of Incorporation to be signed by its Chairman this 28TH March, 1996.

HYBRIDON, INC.

By: /s/ E. Andrews Grinstead, III

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Chairman

[Corporate Seal]

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CERTIFICATE OF AMENDMENT  
OF  
RESTATED  
CERTIFICATE OF INCORPORATION  
OF HYBRIDON, INC.

Pursuant to Section 242 of the General

Corporation Law of the State of Delaware

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HYBRIDON, INC. (the "Corporation"), organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

By written action of the Board of Directors of the Corporation, dated October 20, 1997, the Board of Directors duly adopted resolutions pursuant to Sections 141(f) and 242 of the General Corporation Law of the State of Delaware setting forth an amendment to the Restated Certificate of Incorporation of the Corporation, as amended, and declaring said amendment to be advisable. The stockholders of the Corporation duly approved, pursuant to said Section 242, said proposed amendment at a Special Meeting of Stockholders held on November 18, 1997. The resolution setting forth the amendment to the Restated Certificate of Incorporation is as follows:

RESOLVED: That, subject to stockholder approval, the following paragraph be inserted prior to the first paragraph of Article FOURTH of the Certificate of Incorporation:

"That upon the filing date of the Certificate of Amendment of Restated Certificate of Incorporation of the Corporation (the "Effective Date"), a one-for-five reverse split of the Corporation's Common Stock (as defined below) shall become effective, such that each five shares of Common Stock outstanding and held of record by each stockholder of the Corporation (including treasury shares)

immediately prior to the Effective Date shall represent one share of Common Stock from and after the Effective Date."

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be executed by its Chairman of the Board of Directors, President and Chief Executive Officer this 10th day of December, 1997.

HYBRIDON, INC.

By: /s/ E. Andrews Grinstead, III

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E. Andrews Grinstead, III  
Chairman of the Board of Directors,  
President and Chief Executive Officer

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CERTIFICATE OF DESIGNATION

for

SERIES A CONVERTIBLE PREFERRED STOCK

of

HYBRIDON, INC.

Pursuant to Section 151 of the  
General Corporation Law of the State of Delaware

HYBRIDON INC., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), does hereby certify that pursuant to the authority conferred on the board of directors of the Corporation (the "Board of Directors") by the Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation") of the Corporation and in accordance with Section 151 of the General Corporation Law of the State of Delaware, the Board of Directors adopted the following resolution establishing a series of 1,500,000 shares of preferred stock of the Corporation designated as "Series A Convertible Preferred Stock":

RESOLVED, that pursuant to the authority conferred on the



Board of Directors by the Certificate of Incorporation, a series of preferred stock, par value \$.01 per share, of the Corporation is hereby established and created, and that the designation and number of shares thereof and the voting and other powers, preferences and relative participating, optional or other special rights of, the shares of such series and the qualifications, limitations and restrictions thereof are as follows:

Series A Convertible Preferred Stock

1. Designation and Amount and Definitions. (a) There shall be a series of Preferred Stock designated as "Series A Convertible Preferred Stock" and the number of shares constituting such series shall be 1,500,000. Such series is referred to herein as the "Series A Preferred Stock". Notwithstanding any other provision in this Certificate of Designation of the Series A Preferred Stock (the "Certificate of Designation") to the contrary, such series shall be senior to the common stock, par value \$.001 per share of the Corporation (the "Common Stock") with respect to dividends and the distribution of assets upon liquidation, dissolution or winding up. Such number of shares may be increased or decreased by resolution of the Board of Directors, subject to the provisions of Section 7 hereof; provided, however, that no decrease shall reduce the number of shares of Series A Preferred Stock to fewer than the number of shares then issued and outstanding.

(b) As used in this Certificate of Designation, except as otherwise provided in Subsection 4(c), the following terms shall have the following meanings:

(i) The "Closing Bid Price" for any security for each trading day shall be the reported per share closing bid price of such security regular way on the Stock Market on such trading day, or, if there were no transactions on such trading day, the average of the reported closing bid and asked prices, regular way, of such security on the relevant Stock Market on such trading day.

(ii) "Fair Market Value" of any asset (including any security) means the fair market value thereof as mutually determined by the Corporation and the holders of a majority of the Series A Preferred Stock then outstanding. If the Corporation and the holders of a majority of the Series A Preferred Stock then outstanding are unable to reach agreement on any valuation matter, such valuation shall be submitted to and determined by a nationally recognized independent investment bank selected by the Board of Directors and the holders of a majority of the Series A Preferred Stock then outstanding (or, if such selection cannot be agreed upon promptly, or in any event within ten days, then such valuation shall be made by a nationally recognized independent investment banking firm selected by the American Arbitration Association in New York City in accordance with its rules), the costs of which valuation shall be paid for by the Corporation.

(iii) "Market Price" shall mean the average Closing Bid Price for twenty (20) consecutive trading days, ending with the trading day prior to the date as of which the Market Price is being determined (with appropriate adjustments for subdivisions or combinations of shares effected during such period), provided that if the prices referred to in the definition of Closing Bid Price cannot be determined on any trading day, the Closing Bid Price for such trading day will be deemed to equal Fair Market Value of such security on such trading day.

(iv) "Registered Holders" shall mean, at any time, the holders of record of the Series A Preferred Stock.

(v) The "Stock Market" shall mean, with respect to any security, the principal national securities exchange on which such security is listed or admitted to trading or, if such security is not listed or admitted to trading on any national securities exchange, shall mean The Nasdaq National Market System ("NNM") or The Nasdaq SmallCap Market ("SCM" and, together with NNM, "Nasdaq") or, if such security is not

quoted on Nasdaq, shall mean the OTC Bulletin Board or, if such security is not quoted on the OTC Bulletin Board, shall mean the over-the-counter market as furnished by any NASD member firm selected from time to time by the Corporation for that purpose.

(vi) A "trading day" shall mean a day on which the relevant Stock Market is open for the transaction of business.

2. Dividends and Distributions. (a) The holders, as of the Dividend Record Date (as defined below), of the Series A Preferred Stock shall be entitled to receive semi-annual dividends on their respective shares of Series A Preferred Stock (aggregating, for this purpose,

all shares of Series A Preferred Stock held of record or, to the Corporation's knowledge, beneficially by such holder), payable, at the option of the Corporation, in cash or additional shares of Series A Preferred Stock, at the rate of 6.5% per annum (computed on the basis of a 360-day year of twelve 30 day months) of the Dividend Base Amount (as defined below), payable semi-annually in arrears; provided that, to the extent the declaration or payment of such dividend is prohibited by applicable law, such dividend need not be paid but shall nevertheless accrue and shall be paid promptly when applicable law permits. Such dividends shall accrue from the date of issuance of such share and shall be paid semi-annually on April 1 and October 1 of each year or, if any such day is not a business day, on the next succeeding business day. Such dividends shall be paid, at the election of the Corporation, either in cash or additional duly authorized, fully paid and non assessable shares of Series A Preferred Stock. In calculating the number of shares of Series A Preferred Stock to be paid with respect to each dividend, the Series A Preferred Stock shall be valued at \$100.00 per share (subject to appropriate adjustment to reflect any stock split, combination, reclassification or reorganization of the Series A Preferred Stock). Notwithstanding the foregoing, the Corporation shall not be required to issue fractional shares of Series A Preferred Stock; the Corporation may elect, in its sole discretion, independently for each holder, whether such number of shares (on an aggregated basis) will be rounded to the nearest whole share (with .5 of a share rounded upward) or whether such holder will be given cash in lieu of any fractional shares. The "Dividend Base Amount" of a share of Series A Preferred Stock shall be \$100.00 plus all accrued but unpaid dividends (subject to appropriate adjustment to reflect any stock split, combination, reclassification or reorganization of the Series A Preferred Stock). The "Dividend Record Date" shall mean, for each semi-annual dividend, the March 15 or September 15, as the case may be, immediately preceding the dividend payment date.

(b) In addition to the foregoing, subject to the rights of the holders of any shares of any series or class of capital stock ranking prior, and superior to, or pari passu with, the shares of Series A Preferred Stock with respect to dividends, the holders of shares of Series A Preferred Stock shall be entitled to receive, as, when and if declared by the Board of Directors, out of assets legally available for that purpose, dividends or distributions in cash, stock or otherwise.

(c) The Corporation shall not declare any dividend or distribution on any Junior Stock (as defined below) of the Corporation unless all dividends required by Section 2(a) have been or contemporaneously are declared and paid, or declared and a sum sufficient for the payment thereof set apart for such payment, on the Series A Preferred Stock.

(d) [Reserved]

(e) All dividends or distributions declared upon the Series A Preferred Stock shall be declared pro rata per share.

(f) Any reference to "distribution" contained in this Section 2 shall not be deemed to include any distribution made in connection with or in lieu of any Liquidation Event (as defined below).

(g) No interest, or sum of money in lieu of interest, shall be payable in respect of any dividend payment or payments on the Series A Preferred Stock which may be in arrears (it being understood that this provision does not alter the Corporation's obligations under Section 2(a)).

(h) So long as any shares of the Series A Preferred Stock are outstanding, no dividends, except as described in the next succeeding sentence, shall be declared or paid or set apart for payment on any class or series of

stock of the Corporation ranking, as to dividends, on a parity with the Series A Preferred Stock, for any period unless all dividends have been or contemporaneously are declared and paid, or declared and a sum sufficient for the payment thereof set apart for such payment, on the Series A Preferred Stock. When dividends are not paid in full or a sum sufficient for such payment is not set apart, as aforesaid, upon the shares of the Series A Preferred Stock and any other class or series of stock ranking on a parity as to dividends with the Series A Preferred Stock, all dividends declared upon such other stock shall be declared pro rata so that the amounts of dividends per share declared on the Series A Preferred Stock and such other stock shall in all cases bear to each other the same ratio that accrued dividends per share on the shares of the Series A Preferred Stock and on such other stock bear to each other.

(i) So long as any shares of the Series A Preferred Stock are outstanding, no other stock of the Corporation ranking on a parity with the Series A Preferred Stock as to dividends or upon liquidation, dissolution or winding up shall be redeemed, purchased or otherwise acquired for any consideration (or any moneys be paid to or made available for a sinking fund or otherwise for the purchase or redemption of any shares of any such stock) by the Corporation unless the dividends, if any, accrued on all outstanding shares of the Series A Preferred Stock shall have been paid or set apart for payment.

(j) "Junior Stock" shall mean the Common Stock and any shares of preferred stock of any series or class of the Corporation, whether presently outstanding or hereafter issued, which are junior to the shares of Series A Preferred Stock with respect to (i) the distribution of assets on any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, (ii) dividends or (iii) voting.

3. Liquidation Preference. (a) In the event of a (i) liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, (ii) a sale or other disposition of all or substantially all of the assets of the Corporation or (iii) any consolidation, merger, combination, reorganization or other transaction in which the Corporation is not the surviving entity or shares of Common Stock constituting in excess of 50% of the voting power of the Corporation are exchanged for or changed into stock or securities of another entity, cash and/or any other property (a "Merger Transaction") (items (i), (ii) and (iii) of this sentence being collectively referred to as a "Liquidation Event"), after payment or provision for payment of debts and other liabilities of the Corporation, the holders of the Series A Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, whether such assets are capital, surplus, or earnings, before any payment or declaration and setting apart for payment of any amount shall be made in respect of any Junior Stock of the Corporation, an amount equal to the Dividend Base Amount at such

time; provided, however, in the case of a Merger Transaction, such payment may be made in cash, property (valued as provided in Subsection 3(b)) and/or securities (valued as provided in Subsection 3(b)) of the entity surviving such Merger Transaction. In the case of property or in the event that any such securities are subject to an investment letter or other similar restriction on transferability, the value of such property or securities shall be determined by agreement between the Corporation and the holders of a majority of the Series A Preferred Stock then outstanding. If upon any Liquidation Event, whether voluntary or involuntary, the assets to be distributed to the holders of the Series A Preferred Stock shall be insufficient to permit the payment to such shareholders of the full preferential amounts aforesaid, then all of the assets of the Corporation to be distributed shall be so distributed ratably to the holders of the Series A Preferred Stock on the basis of the number of shares of Series A Preferred Stock held. Notwithstanding item (iii) of the first sentence of this Subsection 3(a), any consolidation, merger, combination, reorganization or other transaction in which the Corporation is not the surviving entity but the stockholders of the Corporation immediately prior to such transaction own in excess of 50% of the voting power of the corporation surviving such transaction and own amongst themselves such interest in substantially the same proportions as prior to such transaction, shall not be considered a Liquidation Event provided that the surviving corporation shall make appropriate provisions to ensure that the terms of this Certificate of Designation survive any such transaction. All shares of Series A Preferred Stock shall rank as to payment upon the occurrence of any Liquidation Event senior to the Common Stock and, unless the terms of such series shall provide otherwise, senior to all other series of the Corporation's preferred stock.

(b) Any securities or other property to be delivered to the holders of the Series A Preferred Stock pursuant to Subsection 3(a) hereof shall

be valued as follows:

(i) Securities not subject to an investment letter or other similar restriction on free marketability:

(A) If actively traded on a Stock Market, the per share value shall be deemed to be the Market Price of such securities as of the third day prior to the date of valuation.

(B) If not actively traded on a Stock Market, the value shall be the Fair Market Value of such securities.

(ii) For securities for which there is an active public market but which are subject to an investment letter or other restrictions on free marketability, the value shall be the Fair Market Value thereof, determined by discounting appropriately the per share Market Price thereof.

(iii) For all other securities, the value shall be the Fair Market Value thereof.

#### 4. Conversion.

(a) Right of Conversion. Commencing after the expiration of 12 months following the Alternative Equity Closing Date (as hereinafter defined), but not prior thereto, the shares of Series A Preferred Stock shall be convertible, in whole or in part, at the option of the holder thereof and upon notice to the Corporation as set forth in Subsection 4(b), into fully paid and nonassessable shares of Common Stock and such other securities and property as hereinafter provided. The initial conversion price per share of Common Stock (the "Conversion Price"), shall be equal to the product of 2.125 multiplied by the per share price (the "Stated Common Price") of Common Stock sold by the Corporation in connection with the Alternative Equity Offering (as such term is defined in the Corporation's Offer to Exchange dated February 6, 1998 (the "Original Offer to Exchange"), as amended by the Amendment thereto (the "Amendment") dated March 30, 1998 (collectively, the "Offer to Exchange")) and shall be subject to adjustment as provided herein. The rate at which each share Series A Preferred Stock is convertible at any time into Common Stock (the "Conversion Rate") shall be determined by dividing the then existing Conversion Price (determined in accordance with this Section 4, including the last paragraph hereof) into the Dividend Base Amount.

The Corporation shall prepare a certificate signed by the Chairman or President, and by the Treasurer or an Assistant Treasurer or the Secretary or an Assistant Secretary, of the Corporation setting forth the Conversion Rate as of the date of the closing of the Alternative Equity Offering (the "Alternative Equity Closing Date"), showing in reasonable detail the facts upon which such Conversion Rate is based, and such certificate shall forthwith be filed with the transfer agent of the Series A Preferred Stock.

(b) Conversion Procedures. Any holder of shares of Series A Preferred Stock desiring to convert such shares into Common Stock shall surrender the certificate or certificates evidencing such shares of Series A Preferred Stock at the office of the transfer agent for the Series A Preferred Stock, which certificate or certificates, if the Corporation shall so require, shall be duly endorsed to the Corporation or in blank, or accompanied by proper instruments of transfer to the Corporation or in blank, accompanied by irrevocable written notice to the Corporation that the holder elects so to convert such shares of Series A Preferred Stock and specifying the name or names (with address) in which a certificate or certificates evidencing shares of Common Stock are to be issued. The Corporation need not deem a notice of conversion to be received unless the holder complies with all the provisions hereof. The Corporation will instruct the transfer agent (which may be the Corporation) to make a notation of the date that a notice of conversion is received, which date of receipt shall be deemed to be the date of receipt for purposes hereof.

The Corporation shall, as soon as practicable after such deposit of certificates evidencing shares of Series A Preferred Stock accompanied by the written notice and compliance with any other conditions herein contained, deliver at such office of such transfer agent to the person for whose account such shares of Series A Preferred Stock were so surrendered, or to the nominee or nominees of such person, certificates evidencing the number

of full shares of Common Stock to which such person shall be entitled as aforesaid, subject to Section 4(d). Subject to the following provisions of this paragraph, such conversion shall be deemed to have been made as of the date of such surrender of the shares of Series A Preferred Stock to be converted, and the person or persons entitled to receive the Common Stock deliverable upon

conversion of such Series A Preferred Stock shall be treated for all purposes as the record holder or holders of such Common Stock on such date; provided, however, that the Corporation shall not be required to convert any shares of Series A Preferred Stock while the stock transfer books of the Corporation are closed for any purpose, but the surrender of Series A Preferred Stock for conversion during any period while such books are so closed shall become effective for conversion immediately upon the reopening of such books as if the surrender had been made on the date of such reopening, and the conversion shall be at the conversion rate in effect on such date. No adjustments in respect of any dividends on shares surrendered for conversion or any dividend on the Common Stock issued upon conversion shall be made upon the conversion of any shares of Series A Preferred Stock.

The Corporation shall at all times, reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of Series A Preferred Stock, such number of shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of the Series A Preferred Stock.

All notices of conversion shall be irrevocable; provided, however, that if the Corporation has sent notice of an event pursuant to Subsection 4(g) hereof, a holder of Series A Preferred Stock may, at its election, provide in its notice of conversion that the conversion of its shares of Series A Preferred Stock shall be contingent upon the occurrence of the record date or effectiveness of such event (as specified by such holder), provided that such notice of conversion is received by the Corporation prior to such record date or effective date, as the case may be.

(c) Adjustment of Conversion Rate and Conversion Price.

(i) As used in this Subsection 4(c), the following terms shall have the following meanings:

"Capital Stock" of any Person means the Common Stock or Preferred Stock of such Person. Unless otherwise stated herein or the context otherwise requires, "Capital Stock" means Capital Stock of the Corporation;

"Common Stock" of any Person other than the Corporation means the common equity (however designated), including, without limitation, common stock or partnership or membership interests of, or participation or interests in such Person (or equivalents thereof). "Common Stock" of the Corporation means the Common Stock, par value \$.001 per share, of the Corporation, any successor class or classes of common equity (however designated) of the Corporation into or for which such Common Stock may hereafter be converted, exchanged or reclassified and any class or classes of common equity (however designated) of the Corporation which may be distributed or issued with respect to such Common Stock or successor class or classes to holders thereof generally. Unless otherwise stated herein or the context requires otherwise, "Common Stock" means Common Stock of the Corporation;

"Current Market Price" means, when used with respect to any security as of any date, the last sale price, regular way, or, in case no such sale takes place on such date, the average of the closing bid and asked prices, regular way, of such security in either case as reported for consolidated transactions on the New York Stock Exchange or, if such security is not listed or admitted to trading on the New York Stock Exchange, as reported for consolidated transactions with respect to securities listed on the principal national securities exchange on which such security is listed or admitted to trading or, if such security is not listed or admitted to trading on any national securities exchange, as reported on the Nasdaq National Market, or, if such security

is not listed or admitted to trading on the Nasdaq National Market, as reported on the Nasdaq SmallCap Market, or if such security is not listed or admitted to trading on any national securities exchange or the Nasdaq National Market or the Nasdaq SmallCap Market, the average of the high bid and low asked prices of such security in the over-the-counter market, as reported by the National Association of Securities Dealers, Inc. Automated Quotations System or such other system then in use or, if such security is not quoted by any such organization, the average of the closing bid and asked prices of such security furnished by an NASD member firm selected by the Corporation. If such security is not quoted by any such organization and no such NASD member firm is able to provide such prices, the Current Market Price of such security shall be the Fair Market Value thereof;

"Fair Market Value" means, at any date as to any asset, Property or right (including without limitation, Capital Stock of any Person, evidence of indebtedness or other securities, but excluding cash), the fair market value of such item as determined in good faith by the Board of Directors, whose determination shall be conclusive; provided, however, that such determination is described in an Officers' Certificate filed with the transfer agent and that, if there is a Current Market Price for such item on such date, "Fair Market Value" means such Current Market Price (without giving effect to the last sentence of the definition thereof);

"GAAP" means, as of any date, generally accepted accounting principles in the United States and does not include any interpretations or regulations that have been proposed but that have not become effective;

"Officer" means, with respect to any Person, the Chairman of the Board, the Chief Executive Officer, the President, the Chief Operating Officer, the Chief Financial Officer, the Treasurer, any Assistant Treasurer, the Controller, the Secretary, any Assistant Secretary or any Vice President of such Person;

"Officers' Certificate" means a certificate signed on behalf of the Corporation by two Officers, one of whom must be the Chairman of the Board, the President, the Treasurer or a Vice-President of the Corporation;

"Person" means any individual, corporation, partnership, association, trust

or any other entity or organization, including a government or political subdivision or any agency or instrumentality thereof;

"Preferred Stock" of any Person means the class or classes of equity, ownership or participation interests (however designated) in such Person, including, without limitation, stock, share, partnership and membership interests, which are preferred as to the payment of dividends or distributions by, or as to the distribution of assets upon any voluntary or involuntary liquidation or dissolution of, such Person (or equivalent thereof) over interests of any other class of interests of such Person. Unless otherwise stated herein or the context otherwise requires, "Preferred Stock" means Preferred Stock of the Corporation;

"Property" of any Person means any and all types of real, personal, tangible, intangible or mixed property owned by such Person whether or not included on the most recent consolidated balance sheet of such Person in accordance with GAAP;

"Subsidiary" of a Person on any date means any other Person of whom such Person owns, directly or indirectly through a Subsidiary or Subsidiaries of such Person, Capital Stock with voting power, acting independently and under ordinary circumstances, entitling such person to elect a

majority of the board of directors or other governing body of such other Person. Unless otherwise stated herein or the context otherwise requires, "Subsidiary" means a Subsidiary of the Corporation.

(ii) If the Corporation shall (i) pay a dividend or other distribution, in Common Stock, on any class of Capital Stock of the Corporation, (ii) subdivide the outstanding Common Stock into a greater number of shares by any means or (iii) combine the outstanding Common Stock into a smaller number of shares by any means including, without limitation, a reverse stock split), then in each such case the Conversion Price in effect immediately prior thereto shall be adjusted so that the Registered Holder of any shares of Series A Preferred Stock thereafter surrendered for conversion shall be entitled to receive the number of shares of Common Stock that such Registered Holder would have owned or have been entitled to receive upon the happening of such event had such Series A Preferred Stock been converted immediately prior to the relevant record date or, if there is no such record date, the effective date of such event. An adjustment made pursuant to this Paragraph 4(c)(ii) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date of such subdivision or combination, as the case may be.

(iii) If the Corporation shall (i) issue or distribute (at a price per share less than the Current Market Price per share of such Capital Stock on the date of such issuance or distribution) Capital Stock generally to holders of Common Stock or to holders of any class or series of Capital Stock which is convertible

into or exchangeable or exercisable for Common Stock (excluding an issuance or distribution of Common Stock described in Paragraph 4(c)(ii)) or (ii) issue or distribute generally to such holders rights, warrants, options or convertible or exchangeable securities entitling the holder thereof to subscribe for, purchase, convert into or exchange for Capital Stock at a price per share less than the Current Market Price per share of such Capital Stock on the date of issuance or distribution, then, in each such case, at the earliest of (A) the date the Corporation enters into a firm contract for such issuance or distribution, (B) the record date for the determination of stockholders entitled to receive any such Capital Stock or any such rights, warrants, options or convertible or exchangeable securities or (C) the date of actual issuance or distribution of any such Capital Stock or any such rights, warrants, options or convertible or exchangeable securities, the Conversion Price shall be reduced by multiplying the Conversion Price in effect immediately prior to such earliest date by:

(A) if such Capital Stock is Common Stock, a fraction the numerator of which is the number of shares of Common Stock outstanding, on such earliest date plus the number of shares of Common Stock which could be purchased at the Current Market Price per share of Common Stock on the date of such issuance or distribution with the aggregate consideration (based on the Fair Market Value thereof) received or receivable by the Corporation either (A) in connection with such issuance or distribution or (B) upon the conversion, exchange, purchase or subscription of all such rights, warrants, options or convertible or exchangeable securities (the "Aggregate Consideration"), and the denominator of which is the number of shares of Common Stock outstanding on such earliest date plus the number of shares of Common Stock to be so issued or distributed or to be issued upon the conversion, exchange, purchase or subscription of all such rights, warrants, options or convertible or exchangeable securities; or

(B) if such Capital Stock is other than Common Stock, a fraction the numerator of which is the Current Market Price per share of Common Stock on such earliest date minus an amount equal to (A) the difference between (1) the Current Market Price per share of such Capital Stock multiplied by the number of shares of such Capital Stock to be so issued and (2) the Aggregate Consideration, divided by (B) the number of shares of Common Stock outstanding on such date, and the denominator of which is the Current Market Price per share of Common Stock on such earliest date.

Such adjustment shall be made successively whenever any such Capital Stock, rights, warrants, options or convertible or exchangeable securities are so issued or distributed. In determining whether any rights, warrants, options or convertible or exchangeable securities entitle the holders thereof to subscribe for, purchase, convert into or exchange for shares of such Capital Stock at less than such Current Market Price, there

shall be taken into account the Fair Market Value of any consideration received or receivable by the Corporation for such rights, warrants, options or convertible or exchangeable securities. If any right, warrant, option or convertible or exchangeable security, the issuance of which resulted in an adjustment in the Conversion Price pursuant to this Paragraph 4(c)(iii), shall expire and shall not have been exercised, the Conversion Price shall immediately upon such expiration be recomputed to the Conversion Price which would have been in effect if such right, warrant, option or convertible or exchangeable securities had never been distributed or issued. Notwithstanding anything contained in this paragraph to the contrary, (i) the issuance of Capital Stock upon the exercise of such rights, warrants or options or the conversion or exchange of such convertible or exchangeable securities will not cause an adjustment in the Conversion Price if no such adjustment would have been required at the time such right, warrant, option or convertible or exchangeable security was issued or distributed; provided, however, that, if the consideration payable upon such exercise, conversion or exchange and/or the Capital Stock receivable thereupon are changed after the time of the issuance or distribution of such right, warrant, option or convertible or exchangeable security then such change shall be deemed to be the expiration thereof without having been exercised and the issuance or distribution of new options, rights, warrants or convertible or exchangeable securities and (ii) the issuance of convertible preferred stock of the Corporation as a dividend on convertible preferred stock of the Corporation will not cause an adjustment in the Conversion Price if no such adjustment would have been required at the time such underlying convertible preferred stock was issued (or as a result of any subsequent modification to the terms thereof) and the conversion provisions of such convertible stock so issued as a dividend are the same as in such underlying convertible preferred stock.

Notwithstanding any contained in this Certificate of Designation to the contrary, options, rights or warrants issued or distributed by the Corporation, including options, rights or warrants distributed prior to the date of filing of this Certificate of Designation, to holders of Common Stock generally which, until the occurrence of a specified event or events (a "Trigger Event"), (i) are deemed to be transferred with Common Stock, (ii) are not exercisable and (iii) are also issued on a pro rata basis with respect to future issuances of Common Stock, shall be deemed not to have been issued or distributed for purposes of this Subsection 4(c) (and no adjustment to the Conversion Price under this Subsection 4(c) will be required) until the occurrence of the earliest Trigger Event. Upon the occurrence of a Trigger Event, such options, rights or warrants shall continue to be deemed not to have



been issued or distributed for purposes of this Subsection 4(c) (and no adjustment to the Conversion Price under this Subsection 4(c) will be required) if and for so long as each Registered Holder who thereafter converts such Registered Holder's Series A Preferred Stock shall be entitled to receive upon such conversion, in addition to the shares of Common Stock issuable upon such conversion, a number of such options, rights or warrants, as the case may be, equal to the number of options, rights or warrants to which a holder of the number of shares of

Common Stock equal to the number of shares of Common Stock issuable upon conversion of such Registered Holder's Series A Preferred Stock is entitled to receive at the time of such conversion in accordance with the terms and provisions of, and applicable to, such options, rights or warrants. Upon the expiration of any such options, rights or warrants or at such time, if any, as a Registered Holder is not entitled to receive such options, rights or warrants upon conversion of such Registered Holder's Series A Preferred Stock, an adjustment (if any is required) to the Conversion Price shall be made in accordance with this Paragraph 4(c)(iii) with respect to the issuance of all such options, rights and warrants as of the date of issuance thereof, but subject to the provisions of the preceding paragraph, if any such option, right or warrant, including any such options right or warrants distributed prior to the date of filing of this Certificate of Designation, are subject to events, upon the occurrence of which such options, rights or warrants become exercisable to purchase different securities, evidence of indebtedness, cash, Properties or other assets or different amounts thereof, then, subject to the preceding provision of this paragraph, the date of the occurrence of any and each such event shall be deemed to be the date of distribution and record date with respect to new options, right or warrants with such new purchase rights (and a termination or expiration of the existing options, rights or warrants without exercise thereof). In addition, in the event of any distribution (or deemed distribution) of options, rights or warrants, or any Trigger Event or other event of the type described in the preceding sentence, that required (or would have required but for the provisions of Paragraph 4(c)(vi) or this paragraph) an adjustment to the Conversion Price under this Subsection 4(c) and such options, rights or warrants shall thereafter have been redeemed or repurchased without having been exercised, then the Conversion Price shall be adjusted upon such redemption or repurchase to give effect to such distribution, Trigger Event or other event, as the case may, as though it had instead been a cash distribution, equal on a per share basis to the result of the aggregate redemption or repurchase price received by holders of such options, rights or warrants divided by the number of shares of Common Stock outstanding as of the date of such repurchase or redemption, made to holders of Common Stock generally as of the date of such redemption or repurchase.

(iv) If the Corporation shall pay or distribute, as a dividend or otherwise, generally to holders of Common Stock or any class or series of Capital Stock which is convertible into or exercisable or exchangeable for Common Stock any assets, Properties or rights (including, without limitation, evidences of indebtedness of the Corporation, any Subsidiary or any other Person, cash or Capital Stock or other securities of the Corporation, any Subsidiary or any other Person, but excluding payments and distributions as described in Paragraphs 4(c)(ii) or (iii), dividends and distributions in connection with a Liquidation Event and distributions consisting solely of cash described in Paragraph 4(c)(v)), then in each such case the Conversion Price shall be reduced by multiplying the Conversion Price in effect immediately prior to the date of such payment or distribution by a fraction, the numerator of which is the Current Market Price per share of Common Stock on the record

date for the determination of stockholders entitled to receive such payment or distribution less the Fair Market Value per

share of Common Stock on such record date of the assets, Properties or rights so paid or distributed, and the denominator of which is the Current Market Price per share of Common Stock on such record date. Such adjustment shall become effective immediately after such record date. For purposes of this Paragraph 4(c)(iv), such Fair Market Value per share shall equal the aggregate Fair Market Value on such record date of the assets, Properties or rights so paid or distributed divided by the number of shares of Common Stock outstanding on such record date. For all purposes of this Certificate of Designation, adjustments to any security's conversion or exercise price pursuant to such security's original terms shall not be deemed a distribution or dividend to holders thereof.

(v) If the Corporation shall, by dividend or otherwise, make a distribution (other than in connection with the liquidation, dissolution or winding up of the Corporation in its entirety), generally to holders of Common Stock or any class or series of Capital Stock which is convertible into or exercisable or exchangeable for Common Stock, consisting solely of cash where (x) the sum of (i) the aggregate amount for such cash plus (ii) the aggregate amount of all cash so distributed (by dividend or otherwise) to such holders within the 12-month period ending on the record date for determining stockholder entitled to receive such distribution with respect to which no adjustment has been made to the Conversion Price pursuant to this Paragraph 4(c)(v) exceeds (y) 10% of the result of the multiplication of (1) the Current Market Price per share of Common Stock on such record date times (2) the number of shares of Common Stock outstanding on such record date, then the Conversion Price shall be reduced, effective immediately prior to the opening of business on the day following such record date, by multiplying the Conversion Price in effect immediately prior to the close of business on the day prior to such record date by a fraction, the numerator of which is the Current Market Price per share of Common Stock on such record date less the aggregate amount of cash per share so distributed and the denominator of which is such Current Market Price; provided, however, that, if the aggregate amount of cash per share is equal to or greater than such Current Market Price, then, in lieu of the foregoing adjustment, adequate provisions shall be made so that each Registered Holder shall have the right to receive upon conversion (with respect to each share of Common Stock issued upon such conversion and in addition to the Common Stock issuable upon conversion) the aggregate amount of cash per share such Registered Holder would have received had such Registered Holder's Series A Preferred Stock been converted immediately prior to such record date. In no event shall the Conversion Price be increased pursuant to this Paragraph 4(c)(v); provided, however, that if such distribution is not so made, the Conversion Price shall be adjusted to be the Conversion Price which would have been in effect if such distribution had not been declared. For purposes of this Paragraph 4(c)(v), such aggregate amount of cash per share shall equal such sum divided by the number of shares of Common Stock outstanding on such record date.

(vi) The provisions of this Subsection 4(c) shall similarly apply to all successive events of the type described in this Subsection 4(c). Notwithstanding anything contained herein to the contrary, no adjustment in the Conversion Price shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price then in effect; provided, however, that any adjustments which by reason of this Paragraph 4(c)(vi) are not required to be made shall be carried forward and taken into account in any subsequent adjustment. All calculations under this Section 4 shall be made by the Corporation and shall be made to the nearest cent or to the nearest one hundredth of a share, as the case may be, and the transfer agent shall be entitled to rely conclusively thereon. Except as provided in this Section 4, no adjustment in the Conversion Price will be made for the issuance of Common Stock or any securities convertible into or

exchangeable for Common Stock or carrying the right to purchase Common Stock or any securities so convertible or exchangeable.

(vii) Whenever the Conversion Price is adjusted as provided herein, the Corporation shall promptly file with the transfer agent an Officers' Certificate setting forth the Conversion Price in effect after such adjustment and setting forth a brief statement of the facts requiring such adjustment. Promptly after delivery of such Officers' Certificate, the Corporation shall give or cause to be given to each Registered Holder a notice of such adjustment of the Conversion Price setting forth the adjusted Conversion Price and the date on which such adjustment becomes effective.

(viii) Notwithstanding anything contained herein to the contrary, in any case in which this Subsection 4(c) provides that an adjustment in the Conversion Price shall become effective immediately after a record date for an event, the Corporation may defer until the occurrence of such event (i) issuing to the Registered Holder of any Series A Preferred Stock converted after such record date and before the occurrence of such event the additional shares of Common Stock issuable upon such conversion by reason of the adjustment required by such event over and above the number of shares of Common Stock issuable upon such conversion before giving effect to such adjustment and (ii) paying to such Registered Holder any amount in cash in lieu of any fractional share of Common Stock pursuant to Subsection 4(d).

(ix) Notwithstanding any other provision hereof, no adjustment to the Conversion Price shall be made upon the issuance or exercise or conversion of (1) options or warrants to purchase, in the aggregate, up to 25% of the securities sold in the offerings of securities of the Corporation described in the Original Offer to Exchange or any options or warrants described in the Amendment in respect of the Alternative Equity Offering, in each case issued to (or to the designee of) any placement agent or financial advisor (such options or warrants, the "Offering Warrants"), (2) any equity securities or warrants of the Corporation (including, without limitation, the Series A Preferred Stock, warrants and equity securities underlying warrants) issued in exchange for 9% Convertible Subordinated

Notes due 2004 (the "9% Notes") of the Corporation or accrued interest thereon or pursuant to the conversion or exercise provisions thereof, (3) any warrants issued in connection with the offerings described in the Original Offer to Exchange or the Amendment (collectively, the "Offering"), (4) any warrants issued to Forum Capital Markets, LLC ("Forum") in exchange for or in addition to, or any amendment to, any warrants held by Forum, in each case, pursuant to a letter agreement dated January 5, 1998, between the Corporation and Forum, and any other warrants to purchase Common Stock or shares of Common Stock issued to Forum or its designee, (5) any Series A Preferred Stock issued in the Offering, (6) any Capital Stock issued or cash paid as dividends on the Series A Preferred Stock or (7) any Capital Stock issued or cash paid upon the mandatory conversion or redemption of any Series A Preferred Stock in accordance with Section 5 of this Certificate of Designation.

(d) No Fractional Shares. No fractional shares or scrip representing fractional shares of Common Stock shall be issued upon conversion of Series A Preferred Stock. If more than one certificate evidencing shares of Series A Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares of Series A Preferred Stock so surrendered. Instead of any fractional share of Common Stock which would otherwise be issuable upon conversion of such aggregate number of shares of Series A Preferred Stock, the Corporation may elect, in its sole discretion, independently for each holder, whether such number of shares of Common Stock will be rounded to the nearest whole share (with a .5 of a share rounded upward) or whether such holder will be given cash, in lieu of any fractional share, in

an amount equal to the same fraction of the Market Price of the Common Stock as of the close of business on the day of conversion.

(e) [Reserved]

(f) Reservation of Shares; Transfer Taxes, Etc. The Corporation shall at all times reserve and keep available, out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the conversion of the Series A Preferred Stock, such number of shares of its Common Stock free of preemptive rights as shall be sufficient to effect the conversion of all shares of Series A Preferred Stock from time to time outstanding. The Corporation shall use its best efforts from time to time, in accordance with the laws of the State of Delaware to increase the authorized number of shares of Common Stock if at any time the number of shares of authorized, unissued and unreserved Common Stock shall not be sufficient to permit the conversion of all the then-outstanding shares of Series A Preferred Stock.

The Corporation shall pay any and all issue or other taxes (excluding any income taxes) that may be payable in respect of any issue or delivery of shares of Common Stock on conversion of the Series A Preferred Stock. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issue or delivery of Common Stock (or other securities or assets) in a name other than that in which the shares of Series A Preferred Stock so converted were registered, and no such issue or delivery shall be made unless and until the person requesting such issue has paid to the Corporation the amount

of such tax or has established, to the satisfaction of the Corporation, that such tax has been paid or need not be paid.

(g) Prior Notice of Certain Events. In case:

(i) the Corporation shall declare any dividend (or any other distribution); or

(ii) the Corporation shall authorize the granting to the holders of Common Stock of rights or warrants to subscribe for or purchase any shares of stock of any class or of any other rights or warrants; or

(iii) of any reclassification of Common Stock (other than a subdivision or combination of the outstanding Common Stock, or a change in par value, or from par value to no par value, or from no par value to par value); or

(iv) of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation shall be required, or of the sale or transfer of all or substantially all of the assets of the Corporation or of any compulsory share exchange whereby the Common Stock is converted into other securities, cash or other property; or

(v) of any Liquidation Event;

then the Corporation shall cause to be filed with the transfer agent for the Series A Preferred Stock, and shall cause to be mailed to the Registered Holders, at their last addresses as they shall appear upon the stock transfer books of the Corporation, at least 20 days prior to the applicable record date hereinafter specified, a notice stating (x) the date on which a record (if any) is to be taken for the purpose of such dividend, distribution or granting of rights or warrants or, if a record is not to be taken, the date as of which the holders of Common Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined and a description of the cash, securities or other property to be received by such holders upon such dividend, distribution or granting of rights or warrants or (y) the date on which such reclassification, consolidation, merger, sale, transfer, share exchange or Liquidation Event is expected to become effective, the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities or other property deliverable upon such exchange or Liquidation Event and the consideration, including securities or other property, to be received by such holders upon such exchange; provided, however, that no failure to mail such notice or any defect therein or in the mailing thereof shall affect the validity of the corporate action required to be specified in such notice.

(h) Other Changes in Conversion Rate. The Corporation from time to time may increase the Conversion Rate by any amount for any period of time if the period is at least 20 days and if the increase is irrevocable during the period. Whenever the Conversion Rate is so increased, the Corporation shall mail to the Registered Holders a notice of the increase at least 15 days before the date the increased Conversion Rate takes effect, and such notice shall state the increased Conversion Rate and the period it will be in effect.

The Corporation may make such increases in the Conversion Rate, in addition to those required or allowed by this Section 4, as shall be determined by it, as evidenced by a resolution of the Board of Directors, to be advisable in order to avoid or diminish any income tax to holders of Common Stock resulting from any dividend or distribution of stock or issuance of rights or warrants to purchase or subscribe for stock or from any event treated as such for income tax purposes.

Notwithstanding anything to the contrary herein, in no case shall the Conversion Price be adjusted to an amount less than \$.001 per share, the current par value of the Common Stock into which the Series A Preferred Stock is convertible.

(i) Ambiguities/Errors. The Board of Directors of the Corporation shall have the power to resolve any ambiguity or correct any error in the provisions relating to the convertibility of the Series A Preferred Stock, and its actions in so doing shall be final and conclusive.

5. Mandatory Conversion and Redemption. (a) At any time after the expiration of 12 months after the Alternative Equity Closing Date, the Corporation at its option, may cause the Series A Preferred Stock to be converted in whole or in part, on a pro rata basis, into fully paid and nonassessable shares of Common Stock using a conversion price equal to 200% of the Stated Common Price if the Closing Bid Price (or, if the price referenced in the definition of Closing Bid Price cannot be determined, the Fair Market Value) of the Common Stock shall have equalled or exceeded 250% of the Conversion Price for at least 20 trading days in any 30 consecutive trading day period ending three days prior to the date of notice of conversion (such event, the "Market Trigger"). Any shares of Series A Preferred Stock so converted shall be treated as having been surrendered by the holder thereof for conversion pursuant to Section 4 on the date of such mandatory conversion (unless previously converted at the option of the holder).

(b) At any time after April 1, 2000, the Corporation, at its option, may redeem the Series A Preferred Stock for cash equal to the Dividend Base Amount at such time, if the Market Trigger has occurred in the period ending three days prior to the date of notice of redemption (unless previously converted at the option of the holder).

(c) No greater than 60 nor fewer than 20 days prior to the date of any such mandatory conversion or redemption, notice by first class mail, postage prepaid, shall be given to the holders of record of the Series A Preferred Stock to be converted or redeemed, addressed to such holders at their last addresses as shown on the stock transfer books of the Corporation. Each such notice shall specify the date fixed for conversion or redemption, the place or places for surrender of shares of Series A Preferred Stock and the then effective Conversion Rate pursuant to Section 4.

Any notice which is mailed as herein provided shall be conclusively presumed to have been duly given by the Corporation on the date deposited in the mail, whether or not

the holder of the Series A Preferred Stock receives such notice; and failure properly to give such notice by mail, or any defect in such notice, to the holders of the shares to be converted or redeemed shall not affect the validity of the proceedings for the conversion or redemption of any other shares of Series A Preferred Stock. On or after the date fixed for conversion or redemption (the "Take-Out Date") as stated in such notice, each holder of shares called to be converted or redeemed shall surrender the certificate evidencing such shares to the Corporation at the place designated in such notice for conversion or redemption. After the mailing of such notice, but before the Take-Out Date as stated therein, all rights whatsoever with respect to the shares so called for conversion or redemption (except the right of the holders to convert such shares pursuant to Section 4 and to have such shares converted or redeemed, as the case may be, upon surrender of their certificates therefor,

pursuant to this Section 5) shall terminate. On or after the Take-Out Date, notwithstanding that the certificates evidencing any shares properly called for conversion or redemption shall not have been surrendered, such shares shall no longer be deemed outstanding and all rights whatsoever with respect to the shares so called for conversion or redemption (except the right of the holders to have such shares converted or redeemed, as the case may be, upon surrender of their certificates therefor, pursuant to this Section 5) shall terminate.

6. Outstanding Shares. For purposes of this Certificate of Designation, a share of Series A Preferred Stock, when issued, shall be deemed outstanding except (i) from the date, or the deemed date, of surrender of certificates evidencing shares of Series A Preferred Stock, all shares of Series A Preferred Stock converted into Common Stock or redeemed pursuant to Section 5 and (ii) from the date of registration of transfer, all shares of Series A Preferred Stock held of record by the Corporation or any subsidiary of the Corporation.

7. Class Voting Rights. The Corporation shall not, without the affirmative vote or consent of the holders of at least 50% of all outstanding Series A Preferred Stock, voting separately as a class, (i) amend, alter or repeal any provision of the Certificate of Incorporation or the Bylaws of the Corporation so as adversely to affect the relative rights, preferences, qualifications, limitations or restrictions of the Series A Preferred Stock (it being understood that the issuance of securities ranking prior to, or pari passu with, the Series A Preferred Stock (A) upon a Liquidation Event or (B) with respect to the payment of dividends or distributions shall not be considered adversely to affect such relative rights, preferences, qualifications, limitations or restrictions); or (ii) authorize or issue, or increase the authorized amount of, Series A Preferred Stock, other than Series A Preferred Stock issuable in connection with the Offering, issuable in exchange for 9% Notes or accrued interest thereon or issuable as dividends on Series A Preferred Stock.

8. Status of Acquired Shares. Shares of Series A Preferred Stock received upon conversion or redemption pursuant to Section 4 or Section 5 or otherwise acquired by the Corporation will be restored to the status of authorized but unissued shares of Preferred Stock, without designation as to class, and may thereafter be issued, but not as shares of Series A Preferred Stock.

9. Preemptive Rights. The Series A Preferred Stock is not entitled to any preemptive or subscription rights in respect of any securities of the Corporation.

10. Severability of Provisions. Whenever possible, each provision hereof shall be interpreted in a manner as to be effective and valid under applicable law, but if any provision hereof is held to be prohibited by or invalid under applicable law, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating or otherwise adversely affecting the remaining provisions hereof. If a court of competent jurisdiction should determine that a provision hereof would be valid or enforceable if a period of time were extended or shortened or a particular percentage were increased or decreased, then such court may make such changes as shall be necessary to render the provision in question effective and valid under applicable law.

11. Restrictions on Change of Control. Notwithstanding anything to the contrary contained in this Certificate of Designation, without the prior written consent of the Corporation, so long as any 9% Notes remain outstanding under that certain Indenture dated as of March 26, 1997 (as amended, the "Indenture") in respect of the 9% Notes, no holder of Series A Preferred Stock shall have voting rights granted hereunder, be entitled to receive any voting securities of the Corporation pursuant hereto or be entitled to exercise any of the conversion rights set forth herein (each, a "Restricted Event"), to the extent that any such Restricted Event could, in the Corporation's reasonable judgment, either alone or in conjunction with other issuances or holdings of capital stock, warrants or convertible securities of the Corporation, result in a Change of Control (as defined in the Indenture).

[Signature page follows]

IN WITNESS WHEREOF, E. Andrews Grinstead, III, President and Chief Executive Officer of the Corporation, acting for and on behalf of the Corporation, has hereunto subscribed his name this 5th day of May, 1998.

HYBRIDON, INC.

By: /s/ E. Andrews Grinstead, III

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Name: E. Andrews Grinstead, III  
Title: President and Chief Executive Officer

CERTIFICATE OF AMENDMENT OF RESTATED CERTIFICATE OF INCORPORATION

OF

HYBRIDON, INC.

It is hereby certified that:

1. The name of the corporation (hereinafter called the "Corporation") is Hybridon, Inc.

2. The Certificate of Incorporation of the Corporation is hereby amended by inserting a new sentence at the end of paragraph 4 of Subsection A of Articles FOURTH thereof so that said paragraph as so amended shall read as follows:

"4. LIQUIDATION. Upon the dissolution or liquidation of the Corporation, whether voluntary or involuntary, holders of Common Stock will be entitled to receive all assets of the Corporation available for distribution to its stockholders, subject to any preferential rights of any then outstanding Preferred Stock. Notwithstanding the foregoing, and notwithstanding any amendments to, or resolutions of the Board of Directors in connection with, this Certificate of Incorporation, the transaction between the Corporation and Boston Biosystems, Inc. pursuant to that certain Asset Purchase Agreement of June 29, 2000, shall not constitute a dissolution or liquidation of the Corporation such as would entitle any holder of the Series A Preferred Stock to a preferred distribution."

3. Paragraph 3 of the Certificate of Designation of the Corporation shall be amended by inserting a new sentence at the end of the paragraph such that said paragraph shall read as follows:

"3(c) Notwithstanding the foregoing, and notwithstanding any amendments to, or resolutions of the Board of Directors in connection with, this Certificate of Incorporation or Certificate of Designation, the transaction between the Corporation and Boston Biosystems, Inc. pursuant to that certain Asset Purchase Agreement dated as of June 29, 2000, shall not constitute a Liquidation Event of the Corporation such as would entitle any holder of any series of Series A Preferred Stock to any preferred distribution."

4. Every other Article and provision in the Certificate of Incorporation of the Corporation remains in full force and effect.

5. The amendment of the Certificate of Incorporation herein certified has been duly adopted in accordance with the provisions of Section 242 of the General Corporation Law of the State of Delaware.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be duly signed by its President this 19th day of September, 2000.

HYBRIDON, INC.

By: /s/ Robert G. Andersen

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Robert G. Andersen, Vice President  
and CFO

CERTIFICATE OF DESIGNATION  
for  
SERIES B CONVERTIBLE PREFERRED STOCK  
of  
HYBRIDON, INC.

Pursuant to Section 151 of the  
General Corporation Law of the State of Delaware

HYBRIDON, INC., a corporation organized and existing under the laws of the State of Delaware (the "Corporation"), does hereby certify that pursuant to the authority conferred on the board of directors of the Corporation (the "Board of Directors") by the Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation") of the Corporation and in accordance with Section 151 of the General Corporation Law of the State of Delaware, the Board of Directors adopted the following resolution establishing a series of 85,000 shares of preferred stock of the Corporation designated as "Series B Convertible Preferred Stock":

RESOLVED, that pursuant to the authority conferred on the Board of Directors by the Certificate of Incorporation, a series of preferred stock, par value \$.01 per share, of the Corporation is hereby established and created, and that the designation and number of shares thereof and the voting and other powers, preferences and relative participating, optional or other special rights of, the shares of such series and the qualifications, limitations and restrictions thereof are as follows:

#### Series B Convertible Preferred Stock

1. Designation and Amount and Definitions. (a) There shall be a series of Preferred Stock designated as "Series B Convertible Preferred Stock" and the number of shares constituting such series shall be 85,000. Such series is referred to herein as the "Series B Preferred Stock". Notwithstanding any other provision in this Certificate of Designation of the Series B Preferred Stock (the "Certificate of Designation") to the contrary, such series shall be senior to the common stock, par value \$.001 per share of the Corporation (the "Common Stock"), and the Series A Convertible Preferred Stock, \$.01 par value per share, of the Corporation (the "Series A Preferred Stock"), with respect to dividends and the distribution of assets upon liquidation, dissolution or winding up. Such number of shares may be increased or decreased by resolution of the Board of Directors, subject to the provisions of Section 7 hereof; provided, however, that no decrease shall reduce the number of shares of Series B Preferred Stock to fewer than the number of shares then issued and outstanding.

(b) As used in this Certificate of Designation, except as otherwise provided in Subsection 4(c), the following terms shall have the following meanings:

(i) "Closing Bid Price" for any security for each trading day shall be the reported per share closing bid price of such security regular way on the Stock Market on such trading day, or, if there were no transactions on such trading day, the average of the reported closing bid and asked prices, regular way, of such security on the relevant Stock Market on such trading day.

(ii) "Fair Market Value" of any asset (including any security) means the fair market value thereof as mutually determined by the Corporation and the holders of a majority of the Series B Preferred Stock then outstanding. If the Corporation and the holders of a majority of the Series B Preferred Stock then outstanding are unable to reach agreement on any valuation matter, such valuation shall be submitted to and determined by a nationally recognized independent investment bank selected by the Board of Directors and the holders of a majority of the Series B Preferred Stock then outstanding (or, if such selection cannot be agreed upon promptly, or in any event within ten (10) days, then such valuation shall be made by a nationally recognized independent investment banking firm selected by the American Arbitration Association in New York City in accordance with its rules), the costs of which valuation shall be paid for by the Corporation.

(iii) "Market Price" shall mean the average Closing Bid Price for twenty (20) consecutive trading days, ending with the trading day prior to the date as of which the Market Price is being determined (with appropriate adjustments for subdivisions or combinations of shares effected during such period), provided that if the prices referred to in the definition of Closing Bid Price cannot be determined on any trading day, the Closing Bid Price for such trading day will



be deemed to equal Fair Market Value of such security on such trading day.

(iv) "Registered Holders" shall mean, at any time, the holders of record of the Series B Preferred Stock.

(v) "Stock Market" shall mean, with respect to any security, the principal national securities exchange on which such security is listed or admitted to trading or, if such security is not listed or admitted to trading on any national securities exchange, shall mean The Nasdaq National Market System ("NNM") or The Nasdaq SmallCap Market ("SCM" and, together with NNM, "Nasdaq") or, if

such security is not quoted on Nasdaq, shall mean the OTC Bulletin Board or, if such security is not quoted on the OTC Bulletin Board, shall mean the over-the-counter market as furnished by any NASD member firm selected from time to time by the Corporation for that purpose.

(vi) "Trading Day" shall mean a day on which the relevant Stock Market is open for the transaction of business.

2. Dividends and Distributions. (a) The holders, as of the Dividend Record Date (as defined below), of the Series B Preferred Stock shall be entitled to receive semi-annual dividends on their respective shares of Series B Preferred Stock (aggregating, for this purpose, all shares of Series B Preferred Stock held of record or, to the Corporation's knowledge, beneficially by such holder), payable, at the option of the Corporation, in cash or additional shares of Series B Preferred Stock, at the rate of 8% per annum (computed on the basis of a 360-day year of twelve 30 day months) of the Dividend Base Amount (as defined below), payable semi-annually in arrears; provided that, to the extent the declaration or payment of such dividend is prohibited by applicable law, such dividend need not be paid but shall nevertheless accrue and shall be paid promptly when applicable law permits. Such dividends shall accrue (i) from March 6, 2001 for shares of Series B Preferred Stock issued within thirty days of the date of the filing of this Certificate of Designation, or (ii) from the date of issuance for shares of Series B Preferred Stock issued after thirty days from the date of filing of this Certificate of Designation, and shall be paid semi-annually on April 1 and October 1 of each year or, if any such day is not a business day, on the next succeeding business day. Such dividends shall be paid, at the election of the Corporation, either in cash or additional duly authorized, fully paid and non assessable shares of Series B Preferred Stock. In calculating the number of shares of Series B Preferred Stock to be paid with respect to each dividend, the Series B Preferred Stock shall be valued at \$100.00 per share (subject to appropriate adjustment to reflect any stock split, combination, reclassification or reorganization of the Series B Preferred Stock). Notwithstanding the foregoing, the Corporation shall not be required to issue fractional shares of Series B Preferred Stock; the Corporation may elect, in its sole discretion, independently for each holder, whether such number of shares (on an aggregated basis) will be rounded to the nearest whole share (with .5 of a share rounded upward) or whether such holder will be given cash in lieu of any fractional shares. The "Dividend Base Amount" of a share of Series B Preferred Stock shall be \$100.00 plus all accrued but unpaid dividends (subject to appropriate adjustment to reflect any stock split, combination, reclassification or reorganization of the Series B Preferred Stock). The "Dividend Record Date" shall mean, for each semi-annual dividend, the March 15 or September 15, as the case may be, immediately preceding the dividend payment date.

(b) In addition to the foregoing, subject to the rights of the holders of any shares of any series or class of capital stock ranking prior, and superior to, or pari passu with, the shares of Series B Preferred Stock with respect to dividends, and prior to the rights of the holders of Common Stock, Series A Preferred Stock and any other series or class of capital stock, the holders of shares of Series B Preferred Stock shall be entitled to receive, as, when and if declared by the Board of Directors, out of assets legally available for that purpose, dividends or distributions in cash, stock or otherwise.

(c) The Corporation shall not declare or pay any dividend or distribution on any Junior Stock (as defined below) of the Corporation unless all dividends required by Section 2(a) have been or contemporaneously are declared and paid, or declared and a sum sufficient for the payment thereof set apart for such payment, on the Series B Preferred Stock.

(d) [Reserved]

(e) All dividends or distributions declared upon the Series B Preferred Stock shall be declared pro rata per share.

(f) Any reference to "distribution" contained in this Section 2 shall not be deemed to include any distribution made in connection with or in lieu of any Liquidation Event (as defined below).

(g) No interest, or sum of money in lieu of interest, shall be payable in respect of any dividend payment or payments on the Series B Preferred Stock which may be in arrears (it being understood that this provision does not alter the Corporation's obligations under Section 2(a)).

(h) So long as any shares of the Series B Preferred Stock are outstanding, no dividends, except as described in the next succeeding sentence, shall be declared or paid or set apart for payment on any class or series of stock of the Corporation ranking, as to dividends, on a parity with the Series B Preferred Stock, for any period unless all dividends have been or contemporaneously are declared and paid, or declared and a sum sufficient for the payment thereof set apart for such payment, on the Series B Preferred Stock. When dividends are not paid in full or a sum sufficient for such payment is not set apart, as aforesaid, upon the shares of the Series B Preferred Stock and any other class or series of stock ranking on a parity as to dividends with the Series B Preferred Stock, all dividends declared upon such other stock shall be declared pro rata so that the amounts of dividends per share declared on the Series B Preferred Stock and such other stock shall in all cases bear to each other the same ratio that accrued dividends per share

on the shares of the Series B Preferred Stock and on such other stock bear to each other.

(i) So long as any shares of the Series B Preferred Stock are outstanding, no other stock of the Corporation ranking on a parity with the Series B Preferred Stock as to dividends or upon liquidation, dissolution or winding up shall be redeemed, purchased or otherwise acquired for any consideration (or any moneys be paid to or made available for a sinking fund or otherwise for the purchase or redemption of any shares of any such stock) by the Corporation unless the dividends, if any, accrued on all outstanding shares of the Series B Preferred Stock shall have been paid or set apart for payment.

(j) "Junior Stock" shall mean the Common Stock, Series A Preferred Stock, and any shares of preferred stock of any series or class of the Corporation, whether presently outstanding or hereafter issued, which are junior to the shares of Series B Preferred Stock with respect to (i) the distribution of assets on any voluntary or involuntary liquidation, dissolution or winding up of the Corporation, (ii) dividends or (iii) voting.

3. Liquidation Preference. (a) In the event of a (i) liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, (ii) a sale or other disposition of all or substantially all of the assets of the Corporation or (iii) any consolidation, merger, combination, reorganization or other transaction in which the Corporation is not the surviving entity or shares of Common Stock constituting in excess of 50% of the voting power of the Corporation are exchanged for or changed into stock or securities of another entity, cash and/or any other property (a "Merger Transaction") (items (i), (ii) and (iii) of this sentence being collectively referred to as a "Liquidation Event"), after payment or provision for payment of debts and other liabilities of the Corporation, the holders of the Series B Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, whether such assets are capital, surplus, or earnings, before any payment or declaration and setting apart for payment of any amount shall be made in respect of any Junior Stock of the Corporation, an amount equal to the Dividend Base Amount at such time; provided, however, in the case of a Merger Transaction, such payment may be made in cash, property (valued as provided in Subsection 3(b)) and/or securities (valued as provided in Subsection 3(b)) of the entity surviving such Merger Transaction. In the case of property or in the event that any such securities are subject to an investment letter or other similar restriction on transferability, the value of such property or securities shall be determined by agreement between the Corporation and the holders of a majority of the Series B Preferred Stock then outstanding. If upon any Liquidation Event, whether voluntary or involuntary, the assets to be distributed to the holders of the Series B Preferred Stock shall be insufficient to

permit the payment to such shareholders of the full preferential amounts aforesaid, then all of the assets of the Corporation to be distributed shall be so distributed ratably to the holders of the Series B Preferred Stock on the basis of the number of shares of Series B Preferred Stock held. Notwithstanding item (iii) of the first sentence of this Subsection 3(a), any consolidation, merger, combination, reorganization or other transaction in which the Corporation is not the surviving entity but the stockholders of the Corporation immediately prior to such transaction own in excess of 50% of the voting power of the corporation surviving such transaction and own amongst themselves such interest in substantially the same proportions as prior to such transaction, shall not be considered a Liquidation Event provided that the surviving corporation shall make appropriate provisions to ensure that the terms of this Certificate of Designation survive any such transaction. All shares of Series B Preferred Stock shall rank as to payment upon the occurrence of any Liquidation Event senior to the Common Stock, the Series A Preferred Stock, and, unless the terms of such series shall provide otherwise, senior to all other series of the Corporation's preferred stock.

(b) Any securities or other property to be delivered to the holders of the Series B Preferred Stock pursuant to Subsection 3(a) hereof shall be valued as follows:

(i) Securities not subject to an investment letter or other similar restriction on free marketability:

(A) If actively traded on a Stock Market, the per share value shall be deemed to be the Market Price of such securities as of the third day prior to the date of valuation.

(B) If not actively traded on a Stock Market, the value shall be the Fair Market Value of such securities.

(ii) For securities for which there is an active public market but which are subject to an investment letter or other restrictions on free marketability, the value shall be the Fair Market Value thereof, determined by discounting appropriately the per share Market Price thereof.

(iii) For all other securities, the value shall be the Fair Market Value thereof.

#### 4. Conversion.

(a) Right of Conversion. The shares of Series B Preferred Stock are convertible, in whole or in part, at the option of the holder thereof and upon notice to the Corporation as set forth in Subsection 4(b), into fully paid and nonassessable shares of Common Stock and such other securities and property as hereinafter provided. The initial conversion price per share of Common Stock (the "Conversion Price"), shall be \$.50, subject to adjustment as provided herein. The rate at which each share of Series B Preferred Stock is convertible at any time into Common Stock (the "Conversion Rate") shall be determined by dividing the then existing Conversion Price (determined in accordance with this Section 4, including the last paragraph hereof) into the Dividend Base Amount.

(b) Conversion Procedures. Any holder of shares of Series B Preferred Stock desiring to convert such shares into Common Stock shall surrender the certificate or certificates evidencing such shares of Series B Preferred Stock at the office of the transfer agent for the Series B Preferred Stock, which certificate or certificates, if the Corporation shall so require, shall be duly endorsed to the Corporation or in blank, or accompanied by proper instruments of transfer to the Corporation or in blank, accompanied by irrevocable written notice to the Corporation that the holder elects so to convert such shares of Series B Preferred Stock and specifying the name or names (with address) in which a certificate or certificates evidencing shares of Common Stock are to be issued. The Corporation need not deem a notice of conversion to be received unless the holder complies with all the provisions hereof. The Corporation will instruct the transfer agent (which may be the Corporation) to make a notation of the date that a notice of conversion is received, which date of receipt shall be deemed to be the date of receipt for purposes hereof.

The Corporation shall, as soon as practicable after such

deposit of certificates evidencing shares of Series B Preferred Stock accompanied by the written notice and compliance with any other conditions herein contained, deliver at such office of such transfer agent to the person for whose account such shares of Series B Preferred Stock were so surrendered, or to the nominee or nominees of such person, certificates evidencing the number of full shares of Common Stock to which such person shall be entitled as aforesaid, subject to Section 4(d). Subject to the following provisions of this paragraph, such conversion shall be deemed to have been made as of the date of such surrender of the shares of Series B Preferred Stock to be converted, and the person or persons entitled to receive the Common Stock deliverable upon conversion of such Series B Preferred Stock shall be treated for all purposes as the record holder or holders of such Common Stock on such date; provided, however, that the Corporation shall not be required to convert any shares of Series B Preferred Stock while the stock transfer books of the Corporation are closed for any purpose, but the surrender of Series B Preferred Stock for conversion during any period while such books are so closed shall become effective for

conversion immediately upon the reopening of such books as if the surrender had been made on the date of such reopening, and the conversion shall be at the conversion rate in effect on such date. No adjustments in respect of any dividends on shares surrendered for conversion or any dividend on the Common Stock issued upon conversion shall be made upon the conversion of any shares of Series B Preferred Stock.

The Corporation shall at all times, reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the conversion of the shares of Series B Preferred Stock, such number of shares of Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of the Series B Preferred Stock.

All notices of conversion shall be irrevocable; provided, however, that if the Corporation has sent notice of an event pursuant to Subsection 4(g) hereof, a holder of Series B Preferred Stock may, at its election, provide in its notice of conversion that the conversion of its shares of Series B Preferred Stock shall be contingent upon the occurrence of the record date or effectiveness of such event (as specified by such holder), provided that such notice of conversion is received by the Corporation prior to such record date or effective date, as the case may be.

(c) Adjustment of Conversion Rate and Conversion Price.

(i) As used in this Subsection 4(c), the following terms shall have the following meanings:

"Capital Stock" of any Person means the Common Stock or Preferred Stock of such Person. Unless otherwise stated herein or the context otherwise requires, "Capital Stock" means Capital Stock of the Corporation; "Common Stock" of any Person other than the Corporation means the common equity (however designated), including, without limitation, common stock or partnership or membership interests of, or participation or interests in such Person (or equivalents thereof).

"Common Stock" of the Corporation means the Common Stock, par value \$.001 per share, of the Corporation, any successor class or classes of common equity (however designated) of the Corporation into or for which such Common Stock may hereafter be converted, exchanged or reclassified and any class or classes of common equity (however designated) of the Corporation which may be distributed or issued with respect to such Common Stock or successor class or classes to holders thereof generally. Unless otherwise stated herein or the

context requires otherwise, "Common Stock" means Common Stock of the Corporation;

"Current Market Price" means, when used with respect to any security as of any date, the last sale price, regular way, or, in case no such sale takes place on such date, the average of the closing bid and asked prices, regular way, of such security in either case as reported for consolidated

transactions on the New York Stock Exchange or, if such security is not listed or admitted to trading on the New York Stock Exchange, as reported for consolidated transactions with respect to securities listed on the principal national securities exchange on which such security is listed or admitted to trading or, if such security is not listed or admitted to trading on any national securities exchange, as reported on the Nasdaq National Market, or, if such security is not listed or admitted to trading on the Nasdaq National Market, as reported on the Nasdaq SmallCap Market, or if such security is not listed or admitted to trading on any national securities exchange or the Nasdaq National Market or the Nasdaq SmallCap Market, the average of the high bid and low asked prices of such security in the over-the-counter market, as reported by the National Association of Securities Dealers, Inc. Automated Quotations System or such other system then in use or, if such security is not quoted by any such organization, the average of the closing bid and asked prices of such security furnished by an NASD member firm selected by the Corporation. If such security is not quoted by any such organization and no such NASD member firm is able to provide such prices, the Current Market Price of such security shall be the Fair Market Value thereof;

"Fair Market Value" means, at any date as to any asset, Property or right (including without limitation, Capital Stock of any Person, evidence of indebtedness or other securities, but excluding cash), the fair market value of such item as determined in good faith by the Board of Directors, whose determination shall be conclusive; provided, however, that such determination is described in an Officers' Certificate filed with the transfer agent and that, if there is a Current Market Price for such item on such date, "Fair Market Value" means such Current Market Price (without giving effect to the last sentence of the definition thereof);

"GAAP" means, as of any date, generally accepted accounting principles in the United States and does not include any

interpretations or regulations that have been proposed but that have not become effective;

"Officer" means, with respect to any Person, the Chairman of the Board, the Chief Executive Officer, the President, the Chief Operating Officer, the Chief Financial Officer, the Treasurer, any Assistant Treasurer, the Controller, the Secretary, any Assistant Secretary or any Vice President of such Person;

"Officers' Certificate" means a certificate signed on behalf of the Corporation by two Officers, one of whom must be the Chairman of the Board, the President, the Treasurer or a Vice-President of the Corporation;

"Person" means any individual, corporation, partnership, association, trust or any other entity or organization, including a government or political subdivision or any agency or instrumentality thereof;

"Preferred Stock" of any Person means the class or classes of equity, ownership or participation interests (however designated) in such Person, including, without limitation, stock, share, partnership and membership interests, which are preferred as to the payment of dividends or distributions by, or as to the distribution of assets upon any voluntary or involuntary liquidation or dissolution of, such Person (or equivalent thereof) over interests of any other class of interests of such Person. Unless otherwise stated herein or the context otherwise requires, "Preferred Stock" means Preferred Stock of the Corporation;

"Property" of any Person means any and all types of real, personal, tangible, intangible or mixed property owned by such Person whether or not included on the most recent

consolidated balance sheet of such Person in accordance with GAAP;

"Subsidiary" of a Person on any date means any other Person of whom such Person owns, directly or indirectly through a Subsidiary or Subsidiaries of such Person, Capital Stock with voting power, acting independently and under ordinary circumstances, entitling such person to elect a majority of the board of directors or other governing body of such other Person. Unless otherwise stated herein or the context otherwise requires, "Subsidiary" means a Subsidiary of the Corporation.

(ii) If the Corporation shall (i) pay a dividend or other distribution, in Common Stock, on any class of Capital Stock of the Corporation, (ii) subdivide the outstanding Common Stock into a greater number of shares by any means or (iii) combine the outstanding Common Stock into a smaller number of shares by any means including, without limitation, a reverse stock split), then in each such case the Conversion Price in effect immediately prior thereto shall be adjusted so that the Registered Holder of any shares of Series B Preferred Stock thereafter surrendered for conversion shall be entitled to receive the number of shares of Common Stock that such Registered Holder would have owned or have been entitled to receive upon the happening of such event had such Series B Preferred Stock been converted immediately prior to the relevant record date or, if there is no such record date, the effective date of such event. An adjustment made pursuant to this Paragraph 4(c) (ii) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date of such subdivision or combination, as the case may be.

(iii) If the Corporation shall (i) issue or distribute (at a price per share less than the Current Market Price per share of such Capital Stock on the date of such issuance or distribution) Capital Stock generally to holders of Common Stock or to holders of any class or series of Capital Stock which is convertible into or exchangeable or exercisable for Common Stock (excluding an issuance or distribution of Common Stock described in Paragraph 4(c) (ii)) or (ii) issue or distribute generally to such holders rights, warrants, options or convertible or exchangeable securities entitling the holder thereof to subscribe for, purchase, convert into or exchange for Capital Stock at a price per share less than the Current Market Price per share of such Capital Stock on the date of issuance or distribution, then, in each such case, at the earliest of (A) the date the Corporation enters into a firm contract for such issuance or distribution, (B) the record date for the determination of stockholders entitled to receive any such Capital Stock or any such rights, warrants, options or convertible or exchangeable securities or (C) the date of actual issuance or distribution of any such Capital Stock or any such rights, warrants, options or convertible or exchangeable securities, the Conversion Price shall be reduced by multiplying the Conversion Price in effect immediately prior to such earliest date by:

(A) if such Capital Stock is Common Stock, a fraction the numerator of which is the number of shares of Common Stock outstanding, on such earliest date plus the number of shares of Common Stock which could be purchased at the Current Market Price per share of Common Stock on the date of such issuance or distribution with the aggregate consideration (based on the Fair Market Value thereof) received or receivable by the Corporation either (A) in connection with such issuance or distribution or (B) upon the conversion, exchange, purchase or subscription of all such rights, warrants, options or convertible or exchangeable securities (the "Aggregate Consideration"), and the denominator of

which is the number of shares of Common Stock outstanding on such earliest date plus the number of shares of Common Stock to be so issued or distributed or to be issued upon the conversion, exchange, purchase or subscription of all such rights, warrants, options or convertible or exchangeable securities; or

(B) if such Capital Stock is other than Common Stock, a fraction the numerator of which is the Current Market Price per share of Common Stock on such earliest date minus an amount equal to (A) the difference between (1) the Current Market Price per share of such Capital Stock multiplied by the number of shares of such Capital Stock to be so issued and (2) the Aggregate Consideration, divided by (B) the number of shares of Common Stock outstanding on such date, and the denominator of which is the Current Market Price per share of Common Stock on such earliest date.

Such adjustment shall be made successively whenever any such Capital Stock, rights, warrants, options or convertible or exchangeable securities are so issued or distributed. In determining whether any rights, warrants, options or convertible or exchangeable securities entitle the holders thereof to subscribe for, purchase, convert into or exchange for shares of such Capital Stock at less than such Current Market Price, there shall be taken into account the Fair Market Value of any consideration received or receivable by the Corporation for such rights, warrants, options or convertible or exchangeable securities. If any right, warrant, option or convertible or exchangeable security, the issuance of which resulted in an adjustment in the Conversion Price pursuant to this Paragraph 4(c)(iii), shall expire and shall not have been exercised, the Conversion Price shall immediately upon such expiration be recomputed to the Conversion Price which would have

been in effect if such right, warrant, option or convertible or exchangeable securities had never been distributed or issued. Notwithstanding anything contained in this paragraph to the contrary, (i) the issuance of Capital Stock upon the exercise of such rights, warrants or options or the conversion or exchange of such convertible or exchangeable securities will not cause an adjustment in the Conversion Price if no such adjustment would have been required at the time such right, warrant, option or convertible or exchangeable security was issued or distributed; provided, however, that, if the consideration payable upon such exercise, conversion or exchange and/or the Capital Stock receivable thereupon are changed after the time of the issuance or distribution of such right, warrant, option or convertible or exchangeable security then such change shall be deemed to be the expiration thereof without having been exercised and the issuance or distribution of new options, rights, warrants or convertible or exchangeable securities and (ii) the issuance of convertible preferred stock of the Corporation as a dividend on convertible preferred stock of the Corporation will not cause an adjustment in the Conversion Price if no such adjustment would have been required at the time such underlying convertible preferred stock was issued (or as a result of any subsequent modification to the terms thereof) and the conversion provisions of such convertible stock so issued as a dividend are the same as in such underlying convertible preferred stock.

Notwithstanding any contained in this Certificate of Designation to the contrary, options, rights or warrants issued or distributed by the Corporation, including options, rights or warrants distributed prior to the date of filing of this Certificate of Designation, to holders of Common Stock generally which, until the occurrence of a specified event or events (a "Trigger Event"), (i) are deemed to be transferred with Common Stock, (ii) are not exercisable and (iii) are also

issued on a pro rata basis with respect to future issuances of Common Stock, shall be deemed not to have been issued or distributed for purposes of this Subsection 4(c) (and no adjustment to the Conversion Price under this Subsection 4(c) will be required) until the occurrence of the earliest Trigger Event. Upon the occurrence of a Trigger Event, such options, rights or warrants shall continue to be deemed not to have been issued or distributed for purposes of this Subsection 4(c) (and no adjustment to the Conversion Price under this Subsection 4(c) will be required) if and for so long as each Registered Holder who thereafter converts such Registered Holder's Series B Preferred Stock shall be entitled to receive upon such conversion, in addition to the shares of Common Stock issuable upon such conversion,

a number of such options, rights or warrants, as the case may be, equal to the number of options, rights or warrants to which a holder of the number of shares of Common Stock equal to the number of shares of Common Stock issuable upon conversion of such Registered Holder's Series B Preferred Stock is entitled to receive at the time of such conversion in accordance with the terms and provisions of, and applicable to, such options, rights or warrants. Upon the expiration of any such options, rights or warrants or at such time, if any, as a Registered Holder is not entitled to receive such options, rights or warrants upon conversion of such Registered Holder's Series B Preferred Stock, an adjustment (if any is required) to the Conversion Price shall be made in accordance with this Paragraph 4(c) (iii) with respect to the issuance of all such options, rights and warrants as of the date of issuance thereof, but subject to the provisions of the preceding paragraph, if any such option, right or warrant, including any such options right or warrants distributed prior to the date of filing of this Certificate of Designation, are subject to events, upon the occurrence of which such options, rights or warrants become exercisable to purchase different securities, evidence of indebtedness, cash, Properties or other assets or different amounts thereof, then, subject to the preceding provision of this paragraph, the date of the occurrence of any and each such event shall be deemed to be the date of distribution and record date with respect to new options, right or warrants with such new purchase rights (and a termination or expiration of the existing options, rights or warrants without exercise thereof). In addition, in the event of any distribution (or deemed distribution) of options, rights or warrants, or any Trigger Event or other event of the type described in the preceding sentence, that required (or would have required but for the provisions of Paragraph 4(c) (vi) or this paragraph) an adjustment to the Conversion Price under this Subsection 4(c) and such options, rights or warrants thereafter have been redeemed or repurchased without having been exercised, then the Conversion Price shall be adjusted upon such redemption or repurchase to give effect to such distribution, Trigger Event or other event, as the case may, as though it had instead been a cash distribution, equal on a per share basis to the result of the aggregate redemption or repurchase price received by holders of such options, rights or warrants divided by the number of shares of Common Stock outstanding as of the date of such repurchase or redemption, made to holders of Common Stock generally as of the date of such redemption or repurchase.

(iv) If the Corporation shall pay or distribute, as a dividend or otherwise, generally to holders of Common Stock or any class or series of Capital Stock which is convertible into or exercisable or exchangeable for Common Stock any assets, Properties or rights (including, without limitation, evidences of indebtedness of the Corporation, any Subsidiary or any other Person, cash or Capital Stock or other securities of the Corporation, any Subsidiary or any other Person, but excluding payments and distributions as described in Paragraphs 4(c) (ii) or (iii), dividends and distributions in connection with a Liquidation Event and distributions consisting solely of cash described in Paragraph 4(c) (v)), then in each such case the Conversion Price shall be reduced by multiplying the



Conversion Price in effect immediately prior to the date of such payment or distribution by a fraction, the numerator of which is the Current Market Price per share of Common Stock on the record date for the determination of stockholders entitled to receive such payment or distribution less the Fair Market Value per share of Common Stock on such record date of the assets, Properties or rights so paid or distributed, and the denominator of which is the Current Market Price per share of Common Stock on such record date. Such adjustment shall become effective immediately after such record date. For purposes of this Paragraph 4(c)(iv), such Fair Market Value per share shall equal the aggregate Fair Market Value on such record date of the assets, Properties or rights so paid or distributed divided by the number of shares of Common Stock outstanding on such record date. For all purposes of this Certificate of Designation, adjustments to any security's conversion or exercise price pursuant to such security's original terms shall not be deemed a distribution or dividend to holders thereof.

(v) If the Corporation shall, by dividend or otherwise, make a distribution (other than in connection with the liquidation, dissolution or winding up of the Corporation in its entirety), generally to holders of Common Stock or any class or series of Capital Stock which is convertible into or exercisable or exchangeable for Common Stock, consisting solely of cash where (x) the sum of (i) the aggregate amount for such cash plus (ii) the aggregate amount of all cash so distributed (by dividend or otherwise) to such holders within the 12-month period ending on the record date for determining stockholder entitled to receive such distribution with respect to which no adjustment has been made to the Conversion Price pursuant to this Paragraph 4(c)(v) exceeds (y) 10% of the result of the multiplication of (1) the Current Market Price per share of Common Stock on such record date times (2)

the number of shares of Common Stock outstanding on such record date, then the Conversion Price shall be reduced, effective immediately prior to the opening of business on the day following such record date, by multiplying the Conversion Price in effect immediately prior to the close of business on the day prior to such record date by a fraction, the numerator of which is the Current Market Price per share of Common Stock on such record date less the aggregate amount of cash per share so distributed and the denominator of which is such Current Market Price; provided, however, that, if the aggregate amount of cash per share is equal to or greater than such Current Market Price, then, in lieu of the foregoing adjustment, adequate provisions shall be made so that each Registered Holder shall have the right to receive upon conversion (with respect to each share of Common Stock issued upon such conversion and in addition to the Common Stock issuable upon conversion) the aggregate amount of cash per share such Registered Holder would have received had such Registered Holder's Series B Preferred Stock been converted immediately prior to such record date. In no event shall the Conversion Price be increased pursuant to this Paragraph 4(c)(v); provided, however, that if such distribution is not so made, the Conversion Price shall be adjusted to be the Conversion Price which would have been in effect if such distribution had not been declared. For purposes of this Paragraph 4(c)(v), such aggregate amount of cash per share shall equal such sum divided by the number of shares of Common Stock outstanding on such record date.

(vi) The provisions of this Subsection 4(c) shall similarly apply to all successive events of the type described in this Subsection 4(c). Notwithstanding anything contained herein to the contrary, no adjustment in the Conversion Price shall be required unless such adjustment would require an increase or decrease of at least 1% in the Conversion Price then in effect; provided, however, that any adjustments which by reason of this Paragraph 4(c)(vi) are not required to be made shall be carried forward and taken into account in any subsequent adjustment. All calculations under this Section 4

shall be made by the Corporation and shall be made to the nearest cent or to the nearest one hundredth of a share, as the case may be, and the transfer agent shall be entitled to rely conclusively thereon. Except as provided in this Section 4, no adjustment in the Conversion Price will be made for the issuance of Common Stock or any securities convertible into or exchangeable for Common Stock or carrying the right to purchase Common Stock or any securities so convertible or exchangeable.

(vii) Whenever the Conversion Price is adjusted as provided herein, the Corporation shall promptly file with the transfer agent an Officers' Certificate setting forth the Conversion Price in effect after such adjustment and setting forth a brief statement of the facts requiring such adjustment. Promptly after delivery of such Officers' Certificate, the Corporation shall give or cause to be given to each Registered Holder a notice of such adjustment of the Conversion Price setting forth the adjusted Conversion Price and the date on which such adjustment becomes effective.

(viii) Notwithstanding anything contained herein to the contrary, in any case in which this Subsection 4(c) provides that an adjustment in the Conversion Price shall become effective immediately after a record date for an event, the Corporation may defer until the occurrence of such event (i) issuing to the Registered Holder of any Series B Preferred Stock converted after such record date and before the occurrence of such event the additional shares of Common Stock issuable upon such conversion by reason of the adjustment required by such event over and above the number of shares of Common Stock issuable upon such conversion before giving effect to such adjustment and (ii) paying to such Registered Holder any amount in cash in lieu of any fractional share of Common Stock pursuant to Subsection 4(d).

(ix) Notwithstanding any other provision hereof, no adjustment to the Conversion Price shall be made upon the issuance or exercise or conversion of (1) any Capital Stock issued or cash paid as dividends on the Series B Preferred Stock, or (2) any Capital Stock issued or cash paid upon the mandatory conversion or redemption of any Series B Preferred Stock in accordance with Section 5 of this Certificate of Designation.

(d) No Fractional Shares. No fractional shares or scrip representing fractional shares of Common Stock shall be issued upon conversion of Series B Preferred Stock. If more than one certificate evidencing shares of Series B Preferred Stock shall be surrendered for conversion at one time by the same holder, the number of full shares issuable upon conversion thereof shall be computed on the basis of the aggregate number of shares of Series B Preferred Stock so surrendered. Instead of any fractional share of Common Stock which would otherwise be issuable upon conversion of such aggregate number of shares of Series B Preferred Stock, the Corporation may elect, in its sole discretion, independently for each holder, whether such number of shares of Common Stock will be rounded to the nearest whole share (with a .5 of a share rounded upward) or whether such holder will be given cash, in

lieu of any fractional share, in an amount equal to the same fraction of the Market Price of the Common Stock as of the close of business on the day of conversion.

(e) [Reserved]

(f) Reservation of Shares; Transfer Taxes, Etc. The Corporation shall at all times reserve and keep available, out of its authorized and unissued shares of Common Stock, solely for the purpose of effecting the conversion of the Series B Preferred Stock, such number of shares of its Common Stock free of preemptive rights as shall be sufficient to effect the conversion of all shares of Series B Preferred Stock from time to time outstanding. The Corporation shall use its best efforts from time to time, in accordance with the laws of the State of Delaware to increase the authorized number of shares of Common Stock if at any time the number of shares of authorized, unissued and unreserved Common Stock shall not be sufficient to permit the conversion of all the then-outstanding shares of Series B Preferred Stock.

The Corporation shall pay any and all issue or other taxes (excluding any income taxes) that may be payable in respect of any issue or delivery of shares of Common Stock on conversion of the Series B Preferred Stock. The Corporation shall not, however, be required to pay any tax which may be payable in respect of any transfer involved in the issue or delivery of Common Stock (or other securities or assets) in a name other than that in which the shares of Series B Preferred Stock so converted were registered, and no such issue or delivery shall be made unless and until the person requesting such issue has paid to the Corporation the amount of such tax or has established, to the satisfaction of the Corporation, that such tax has been paid or need not be paid.

(g) Prior Notice of Certain Events. In case:

(i) the Corporation shall declare any dividend (or any other distribution); or

(ii) the Corporation shall authorize the granting to the holders of Common Stock or the Series A Preferred Stock of rights or warrants to subscribe for or purchase any shares of stock of any class or of any other rights or warrants; or

(iii) of any reclassification of Common Stock (other than a subdivision or combination of the outstanding Common Stock, or a change in par value, or from par value to no par value, or from no par value to par value); or

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(iv) of any consolidation or merger to which the Corporation is a party and for which approval of any stockholders of the Corporation shall be required, or of the sale or transfer of all or substantially all of the assets of the Corporation or of any compulsory share exchange whereby the Common Stock is converted into other securities, cash or other property; or

(v) of any Liquidation Event;

then the Corporation shall cause to be filed with the transfer agent for the Series B Preferred Stock, and shall cause to be mailed to the Registered Holders, at their last addresses as they shall appear upon the stock transfer books of the Corporation, at least twenty (20) days prior to the applicable record date hereinafter specified, a notice stating (x) the date on which a record (if any) is to be taken for the purpose of such dividend, distribution or granting of rights or warrants or, if a record is not to be taken, the date as of which the holders of Common Stock or Series A Preferred Stock of record to be entitled to such dividend, distribution, rights or warrants are to be determined and a description of the cash, securities or other property to be received by such holders upon such dividend, distribution or granting of rights or warrants or (y) the date on which such reclassification, consolidation, merger, sale, transfer, share exchange or Liquidation Event is expected to become effective, the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities or other property deliverable upon such exchange or Liquidation Event and the consideration, including securities or other property, to be received by such holders upon such exchange; provided, however, that no failure to mail such notice or any defect therein or in the mailing thereof shall affect the validity of the corporate action required to be specified in such notice.

(h) Other Changes in Conversion Rate. The Corporation from time to time may increase the Conversion Rate by any amount for any period of time if the period is at least 20 days and if the increase is irrevocable during the period. Whenever the Conversion Rate is so increased, the Corporation shall mail to the Registered Holders a notice of the increase at least 15 days before the date the increased Conversion Rate takes effect, and such notice shall state the increased Conversion Rate and the period it will be in effect.

The Corporation may make such increases in the Conversion Rate, in addition to those required or allowed by this Section 4, as shall be determined by it, as evidenced by a resolution of the Board of Directors, to be advisable in order to avoid or diminish any income tax to holders of Common Stock resulting from any dividend or distribution of stock or issuance of rights or warrants to purchase or subscribe for stock or from any event treated as such

for income tax purposes.

Notwithstanding anything to the contrary herein, in no case shall the Conversion Price be adjusted to an amount less than \$.001 per share, the current par value of the Common Stock into which the Series B Preferred Stock is convertible.

(i) Ambiguities/Errors. The Board of Directors of the Corporation shall have the power to resolve any ambiguity or correct any error in the provisions relating to the convertibility of the Series B Preferred Stock, and its actions in so doing shall be final and conclusive.

5. Mandatory Conversion and Redemption. (a) In the event the Corporation causes the Series A Preferred Stock to be converted in whole or in part, into fully paid and nonassessable shares of Common Stock, then the Corporation shall also convert the Series B Preferred Stock, in whole or in part, on a pro rata basis among holders of the Series B Preferred Stock, into fully paid and nonassessable shares of Common Stock using a conversion price of \$.50. Any shares of Series B Preferred Stock so converted shall be treated as having been surrendered by the holder thereof for conversion pursuant to Section 4 on the date of such mandatory conversion (unless previously converted at the option of the holder).

(b) If, at any time, the Corporation redeems the Series A Preferred Stock, the Corporation may, at its option, redeem the Series B Preferred Stock, in whole or in part, on a pro rata basis among holders of the Series B Preferred Stock.

(c) No greater than 60 nor fewer than 20 days prior to the date of any such mandatory conversion or redemption, notice by first class mail, postage prepaid, shall be given to the holders of record of the Series B Preferred Stock to be converted or redeemed, addressed to such holders at their last addresses as shown on the stock transfer books of the Corporation. Each such notice shall specify the date fixed for conversion or redemption, the place or places for surrender of shares of Series B Preferred Stock and the then effective Conversion Rate pursuant to Section 4.

Any notice which is mailed as herein provided shall be conclusively presumed to have been duly given by the Corporation on the date deposited in the mail, whether or not the holder of the Series B Preferred Stock receives such notice; and failure properly to give such notice by mail, or any defect in such notice, to the holders of the shares to be converted or redeemed shall not affect the validity of the proceedings for the conversion or redemption of any other shares of Series B Preferred Stock. On or after the date fixed for conversion or redemption (the "Take-Out Date") as stated in such notice, each holder of shares called to be converted or

redeemed shall surrender the certificate evidencing such shares to the Corporation at the place designated in such notice for conversion or redemption. After the mailing of such notice, but before the Take-Out Date as stated therein, all rights whatsoever with respect to the shares so called for conversion or redemption (except the right of the holders to convert such shares pursuant to Section 4 and to have such shares converted or redeemed, as the case may be, upon surrender of their certificates therefor, pursuant to this Section 5) shall terminate. On or after the Take-Out Date, notwithstanding that the certificates evidencing any shares properly called for conversion or redemption shall not have been surrendered, such shares shall no longer be deemed outstanding and all rights whatsoever with respect to the shares so called for conversion or redemption (except the right of the holders to have such shares converted or redeemed, as the case may be, upon surrender of their certificates therefor, pursuant to this Section 5) shall terminate.

6. Outstanding Shares. For purposes of this Certificate of Designation, a share of Series B Preferred Stock, when issued, shall be deemed outstanding except (i) from the date, or the deemed date, of surrender of certificates evidencing shares of Series B Preferred Stock, all shares of Series B Preferred Stock converted into Common Stock or redeemed pursuant to Section 5 and (ii) from the date of registration of transfer, all shares of Series B Preferred Stock held of record by the Corporation or any subsidiary of the Corporation.

7. Class Voting Rights. The Corporation shall not, without the affirmative vote or consent of the holders of at least 50% of all outstanding Series B Preferred Stock, voting separately as a class, (i) amend, alter or repeal any provision of the Certificate of Incorporation or the Bylaws of the

Corporation so as to adversely affect the relative rights, preferences, qualifications, limitations or restrictions of the Series B Preferred Stock; (ii) authorize or issue, or increase the authorized amount of, Series B Preferred Stock, other than Series B Preferred Stock issuable in exchange for 8% Notes or accrued interest thereon or issuable as dividends on Series B Preferred Stock; or (iii) issue securities ranking prior to, or pari passu with the Series B Preferred Stock.

8. Status of Acquired Shares. Shares of Series B Preferred Stock received upon conversion or redemption pursuant to Section 4 or Section 5 or otherwise acquired by the Corporation will be restored to the status of authorized but unissued shares of Preferred Stock, without designation as to class, and may thereafter be issued, but not as shares of Series B Preferred Stock.

9. Preemptive Rights. The Series B Preferred Stock is not entitled to any preemptive or subscription rights in respect of any securities of the Corporation.

10. Severability of Provisions. Whenever possible, each provision hereof shall be interpreted in a manner as to be effective and valid under applicable law, but if any provision hereof is held to be prohibited by or invalid under applicable law, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating or otherwise adversely affecting the remaining provisions hereof. If a court of competent jurisdiction should determine that a provision hereof would be valid or enforceable if a period of time were extended or shortened or a particular percentage were increased or decreased, then such court may make such changes as shall be necessary to render the provision in question effective and valid under applicable law.

IN WITNESS WHEREOF, Sudhir Agrawal, President and Acting Chief Executive Officer of the Corporation, acting for and on behalf of the Corporation, has hereunto subscribed his name this 15 day of March, 2001.

HYBRIDON, INC.

By: //Sudhir Agrawal

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Name: Sudhir Agrawal  
Title: President and Acting Chief Executive  
Officer

HYBRIDON, INC.

CERTIFICATE OF ELIMINATION  
OF NUMBER OF SHARES OF PREFERRED STOCK  
DESIGNATED AS  
SERIES B CONVERTIBLE PREFERRED STOCK

Hybridon, Inc., a Delaware corporation (the "Corporation"), pursuant to authority conferred upon the Board of Directors of the Corporation by the Corporation's Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation"), and in accordance with the provisions of Section 151(g) of the General Corporation Law of the State of Delaware (the "Delaware Law"), certifies that the Board of Directors of the Corporation duly adopted the following resolution:

"RESOLVED: That no shares of the Corporation's Series B Convertible Preferred Stock (the "Series B Preferred Stock") are outstanding and no shares of Series B Preferred Stock will be issued subject to the Certificate of Designation dated March 28, 2001 with respect to such series (the "Series B Certificate of Designation"); and that the proper officers of the Corporation be and hereby are authorized and directed in the name and on behalf of the Corporation to execute and file a certificate with the Secretary of State of the State of Delaware pursuant to Section 151(g) of the Delaware Law setting forth the text of this resolution, upon the filing and effectiveness of which all matters are set forth in the Series B

Certificate of Designation shall be deemed to have been eliminated from the Certificate of Incorporation and the 85,000 shares of Preferred Stock previously designated as Series B Preferred Stock shall resume their status as undesignated shares of Preferred Stock available for future issuance in accordance with the Certificate of Incorporation."

IN WITNESS WHEREOF, the Corporation has caused its corporate seal to be affixed hereto and this Certificate to be signed by its Chief Executive Officer this 10th day of December, 2001.

HYBRIDON, INC.

By: /s/ Stephen R. Seiler  
Stephen R. Seiler  
Chief Executive Officer

CERTIFICATE OF DESIGNATIONS  
OF  
SERIES C JUNIOR PARTICIPATING PREFERRED STOCK  
OF  
HYBRIDON, INC.  
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Hybridon, Inc., a corporation organized and existing under the laws of the State of Delaware (hereinafter called the "Corporation"), hereby certifies that the following resolution was adopted by the Board of Directors of the Corporation at a meeting duly called and held on December 10, 2001:

RESOLVED: That pursuant to the authority granted to and vested in the Board of Directors of the Corporation (hereinafter called the "Board") in accordance with the provisions of the Certificate of Incorporation, as amended, the Board hereby creates a series of Preferred Stock, \$.01 par value per share (the "Preferred Stock"), of the Corporation and hereby states the designation and number of shares, and fixes the relative rights, preferences and limitations thereof as follows:

Series C Junior Participating Preferred Stock:

Section 1. Designation and Amount. The shares of such series shall be designated as "Series C Junior Participating Preferred Stock" (the "Series C Preferred Stock") and the number of shares constituting the Series C Preferred Stock shall be one hundred thousand (100,000). Such number of shares may be increased or decreased by resolution of the Board prior to issuance; provided, that no decrease shall reduce the number of shares of Series C Preferred Stock to a number less than the number of shares then outstanding plus the number of shares reserved for issuance upon the exercise of outstanding options, rights or warrants or upon the conversion of any outstanding securities issued by the Corporation convertible into Series C Preferred Stock.

Section 2. Dividends and Distributions.

(A) Subject to the rights of the holders of any shares of any series of Preferred Stock (or any similar stock) ranking prior and superior to the Series C Preferred Stock with respect to dividends, the holders of shares of Series C Preferred Stock, in preference to the holders of Common Stock, par value \$.001 per share (the "Common Stock"), of the Corporation, and of any other junior stock, shall be entitled to receive, when, as and if declared by the Board out of funds of the Corporation legally available for the payment of dividends, quarterly dividends payable in cash on the last day of each fiscal quarter of the Corporation in each year (each such date being

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referred to herein as a "Quarterly Dividend Payment Date"), commencing on the first Quarterly Dividend Payment Date after the first issuance of a share or fraction of a share of Series C Preferred Stock, in an amount per share (rounded to the nearest cent) equal to the greater of (a) \$10 or (b) subject to the provision for adjustment hereinafter set forth, 1,000 times the aggregate per share amount of all cash dividends, and 1,000 times the aggregate per share amount (payable in kind) of all non-cash dividends or other distributions, other than a dividend payable in shares of Common Stock or a subdivision of the outstanding shares of Common Stock (by reclassification or otherwise), declared on the Common Stock since the immediately preceding Quarterly Dividend Payment

Date or, with respect to the first Quarterly Dividend Payment Date, since the first issuance of any share or fraction of a share of Series C Preferred Stock. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each case the amount to which holders of shares of Series C Preferred Stock were entitled immediately prior to such event under clause (b) of the preceding sentence shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event. In the event the Corporation shall at any time declare or pay any dividend on the Series C Preferred Stock payable in shares of Series C Preferred Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Series C Preferred Stock (by reclassification or otherwise than by payment of a dividend in shares of Series C Preferred Stock) into a greater or lesser number of shares of Series C Preferred Stock, then in each such case the amount to which holders of shares of Series C Preferred Stock were entitled immediately prior to such event under clause (b) of the first sentence of this Section 2(A) shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Series C Preferred Stock that were outstanding immediately prior to such event and the denominator of which is the number of shares of Series C Preferred Stock outstanding immediately after such event.

(B) The Corporation shall declare a dividend or distribution on the Series C Preferred Stock as provided in paragraph (A) of this Section immediately after it declares a dividend or distribution on the Common Stock (other than a dividend payable in shares of Common Stock) and the Corporation shall pay such dividend or distribution on the Series C Preferred Stock before the dividend or distribution declared on the Common Stock is paid or set apart; provided that, in the event no dividend or distribution shall have been declared on the Common Stock during the period between any Quarterly Dividend Payment Date and the next subsequent Quarterly Dividend Payment Date, a dividend of \$10 per share on the Series C Preferred Stock shall nevertheless be payable on such subsequent Quarterly Dividend Payment Date.

(C) Dividends shall begin to accrue and be cumulative on outstanding shares of Series C Preferred Stock from the Quarterly Dividend Payment Date next preceding the date of issue of such shares, unless the date of issue of such shares is prior to the record date for the first Quarterly Dividend Payment Date, in which case dividends on such shares shall begin to accrue from the date of issue of such shares, or unless the date of issue is a Quarterly Dividend Payment Date or is a date after the record date for the determination of holders of shares of Series C Preferred Stock entitled to receive a quarterly dividend and before such Quarterly Dividend Payment

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Date, in either of which events such dividends shall begin to accrue and be cumulative from such Quarterly Dividend Payment Date. Accrued but unpaid dividends shall not bear interest. Dividends paid on the shares of Series C Preferred Stock in an amount less than the total amount of such dividends at the time accrued and payable on such shares shall be allocated pro rata on a share-by-share basis among all such shares at the time outstanding. The Board may fix a record date for the determination of holders of shares of Series C Preferred Stock entitled to receive payment of a dividend or distribution declared thereon, which record date shall be not more than 60 days prior to the date fixed for the payment thereof.

Section 3. Voting Rights. The holders of shares of Series C Preferred Stock shall have the following voting rights:

(A) Subject to the provision for adjustment hereinafter set forth, each share of Series C Preferred Stock shall entitle the holder thereof to 1,000 votes on all matters submitted to a vote of the stockholders of the Corporation. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the number of votes per share to which holders of shares of Series C Preferred Stock were entitled immediately prior to such event shall be adjusted by multiplying such number by a fraction, the numerator of which is the number of shares of

Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event. In the event the Corporation shall at any time declare or pay any dividend on the Series C Preferred Stock payable in shares of Series C Preferred Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Series C Preferred Stock (by reclassification or otherwise than by payment of a dividend in shares of Series C Preferred Stock) into a greater or lesser number of shares of Series C Preferred Stock, then in each such case the number of votes per share to which holders of shares of Series C Preferred Stock were entitled immediately prior to such event shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Series C Preferred Stock that were outstanding immediately prior to such event and the denominator of which is the number of shares of Series C Preferred Stock outstanding immediately after such event.

(B) Except as otherwise provided herein, in the Certificate of Incorporation or by law, the holders of shares of Series C Preferred Stock and the holders of shares of Common Stock and any other capital stock of the Corporation having general voting rights shall vote together as one class on all matters submitted to a vote of stockholders of the Corporation.

(C) (i) If at any time dividends on any Series C Preferred Stock shall be in arrears in an amount equal to six quarterly dividends thereon, the holders of the Series C Preferred Stock, voting as a separate series from all other series of Preferred Stock and classes of capital stock, shall be entitled to elect two members of the Board in addition to any Directors elected by any other series, class or classes of securities and the authorized number of Directors

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will automatically be increased by two. Promptly thereafter, the Board of the Corporation shall, as soon as may be practicable, call a special meeting of holders of Series C Preferred Stock for the purpose of electing such members of the Board. Such special meeting shall in any event be held within 45 days of the occurrence of such arrearage.

(ii) During any period when the holders of Series C Preferred Stock, voting as a separate series, shall be entitled and shall have exercised their right to elect two Directors, then, and during such time as such right continues, (a) the then authorized number of Directors shall be increased by two, and the holders of Series C Preferred Stock, voting as a separate series, shall be entitled to elect the additional Directors so provided for, and (b) each such additional Director shall not be a member of any existing class of the Board, but shall serve until the next annual meeting of stockholders for the election of Directors, or until his successor shall be elected and shall qualify, or until his right to hold such office terminates pursuant to the provisions of this Section 3(C).

(iii) A Director elected pursuant to the terms hereof may be removed with or without cause by the holders of Series C Preferred Stock entitled to vote in an election of such Director.

(iv) If, during any interval between annual meetings of stockholders for the election of Directors and while the holders of Series C Preferred Stock shall be entitled to elect two Directors, there is no such Director in office by reason of resignation, death or removal, then, promptly thereafter, the Board shall call a special meeting of the holders of Series C Preferred Stock for the purpose of filling such vacancy and such vacancy shall be filled at such special meeting. Such special meeting shall in any event be held within 45 days of the occurrence of such vacancy.

(v) At such time as the arrearage is fully cured, and all dividends accumulated and unpaid on any shares of Series C Preferred Stock outstanding are paid, and, in addition thereto, at least one regular dividend has been paid subsequent to curing such arrearage, the term of office of any Director elected pursuant to this Section 3(C), or his successor, shall automatically terminate, and the authorized number of Directors shall automatically decrease by two, the rights of the holders of the shares of the Series C Preferred Stock to vote as provided in this Section 3(C) shall cease, subject to renewal from time to time upon the same terms and conditions, and the holders of shares of the Series C Preferred Stock shall have only the limited voting rights elsewhere herein set forth.

(D) Except as set forth herein, or as otherwise provided by law, holders of Series C Preferred Stock shall have no special voting rights and their consent shall not be required (except to the extent they are entitled to vote with



holders of Common Stock as set forth herein) for taking any corporate action.

#### Section 4. Certain Restrictions.

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(A) Whenever quarterly dividends or other dividends or distributions payable on the Series C Preferred Stock as provided in Section 2 are in arrears, thereafter and until all accrued and unpaid dividends and distributions, whether or not declared, on shares of Series C Preferred Stock outstanding shall have been paid in full, the Corporation shall not:

(i) declare or pay dividends, or make any other distributions, on any shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series C Preferred Stock;

(ii) declare or pay dividends, or make any other distributions, on any shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series C Preferred Stock, except dividends paid ratably on the Series C Preferred Stock and all such parity stock on which dividends are payable or in arrears in proportion to the total amounts to which the holders of all such shares are then entitled;

(iii) redeem or purchase or otherwise acquire for consideration shares of any stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series C Preferred Stock, provided that the Corporation may at any time redeem, purchase or otherwise acquire shares of any such junior stock in exchange for shares of any stock of the Corporation ranking junior (either as to dividends or upon dissolution, liquidation or winding up) to the Series C Preferred Stock; or

(iv) redeem or purchase or otherwise acquire for consideration any shares of Series C Preferred Stock, or any shares of stock ranking on a parity with the Series C Preferred Stock, except in accordance with a purchase offer made in writing or by publication (as determined by the Board) to all holders of such shares upon such terms as the Board, after consideration of the respective annual dividend rates and other relative rights and preferences of the respective series and classes, shall determine in good faith will result in fair and equitable treatment among the respective series or classes.

(B) The Corporation shall not permit any subsidiary of the Corporation to purchase or otherwise acquire for consideration any shares of stock of the Corporation unless the Corporation could, under paragraph (A) of this Section 4, purchase or otherwise acquire such shares at such time and in such manner.

Section 5. Reacquired Shares. Any shares of Series C Preferred Stock purchased or otherwise acquired by the Corporation in any manner whatsoever shall be retired and cancelled promptly after the acquisition thereof. All such shares shall upon their cancellation become authorized but unissued shares of Preferred Stock and may be reissued as part of a new series of Preferred Stock subject to the conditions and restrictions on issuance set forth herein, in the Certificate of Incorporation, or in any other Certificate of Designations creating a series of Preferred Stock or any similar stock or as otherwise required by law.

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#### Section 6. Liquidation, Dissolution or Winding Up.

(A) Upon any liquidation, dissolution or winding up of the Corporation, no distribution shall be made (1) to the holders of shares of stock ranking junior (either as to dividends or upon liquidation, dissolution or winding up) to the Series C Preferred Stock unless, prior thereto, the holders of shares of Series C Preferred Stock shall have received \$1,000 per share, plus an amount equal to accrued and unpaid dividends and distributions thereon, whether or not declared, to the date of such payment, provided that the holders of shares of Series C Preferred Stock shall be entitled to receive an aggregate amount per share, subject to the provision for adjustment hereinafter set forth, equal to 1,000 times the aggregate amount to be distributed per share to holders of shares of Common Stock, or (2) to the holders of shares of stock ranking on a parity (either as to dividends or upon liquidation, dissolution or winding up) with the Series C Preferred Stock, except distributions made ratably on the Series C Preferred Stock and all such parity stock in proportion to the total amounts to which the holders of all such shares are entitled upon such liquidation, dissolution or winding up.

(B) Neither the consolidation, merger or other business combination of the Corporation with or into any other corporation nor the sale, lease, exchange or conveyance of all or any part of the property, assets or business of the Corporation shall be deemed to be a liquidation, dissolution or winding up of the Corporation for purposes of this Section 6.

(C) In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the aggregate amount to which holders of shares of Series C Preferred Stock were entitled immediately prior to such event under the proviso in clause (1) of paragraph (A) of this Section 6 shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event. In the event the Corporation shall at any time declare or pay any dividend on the Series C Preferred Stock payable in shares of Series C Preferred Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Series C Preferred Stock (by reclassification or otherwise than by payment of a dividend in shares of Series C Preferred Stock) into a greater or lesser number of shares of Series C Preferred Stock, then in each such case the aggregate amount to which holders of shares of Series C Preferred Stock were entitled immediately prior to such event under the proviso in clause (1) of paragraph (A) of this Section 6 shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Series C Preferred Stock that were outstanding immediately prior to such event and the denominator of which is the number of shares of Series C Preferred Stock outstanding immediately after such event.

Section 7. Consolidation, Merger, etc. Notwithstanding anything to the contrary contained herein, in case the Corporation shall enter into any consolidation, merger, combination or other transaction in which the shares of Common Stock are exchanged for or changed into other stock or securities, cash and/or any other property, then in any such case each share

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of Series C Preferred Stock shall at the same time be similarly exchanged or changed into an amount per share, subject to the provision for adjustment hereinafter set forth, equal to 1,000 times the aggregate amount of stock, securities, cash and/or any other property (payable in kind), as the case may be, into which or for which each share of Common Stock is changed or exchanged. In the event the Corporation shall at any time declare or pay any dividend on the Common Stock payable in shares of Common Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Common Stock (by reclassification or otherwise than by payment of a dividend in shares of Common Stock) into a greater or lesser number of shares of Common Stock, then in each such case the amount set forth in the preceding sentence with respect to the exchange or change of shares of Series C Preferred Stock shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Common Stock outstanding immediately after such event and the denominator of which is the number of shares of Common Stock that were outstanding immediately prior to such event. In the event the Corporation shall at any time declare or pay any dividend on the Series C Preferred Stock payable in shares of Series C Preferred Stock, or effect a subdivision, combination or consolidation of the outstanding shares of Series C Preferred Stock (by reclassification or otherwise than by payment of a dividend in shares of Series C Preferred Stock) into a greater or lesser number of shares of Series C Preferred Stock, then in each such case the amount set forth in the first sentence of this Section 7 with respect to the exchange or change of shares of Series C Preferred Stock shall be adjusted by multiplying such amount by a fraction, the numerator of which is the number of shares of Series C Preferred Stock that were outstanding immediately prior to such event and the denominator of which is the number of shares of Series C Preferred Stock outstanding immediately after such event.

Section 8. No Redemption. The shares of Series C Preferred Stock shall not be redeemable.

Section 9. Rank. The Series C Preferred Stock shall rank, with respect to the payment of dividends and the distribution of assets, junior to all series of any other class of the Preferred Stock issued either before or after the issuance of the Series C Preferred Stock (including, without limitation, the Series A

Convertible Preferred Stock \$.01 par value, of the Company established pursuant to the Certificate of Designation for Series A Convertible preferred Stock dated May 5, 1998), unless the terms of any such series shall provide otherwise.

Section 10. Amendment. At such time as any shares of Series C Preferred Stock are outstanding, the Certificate of Incorporation, as amended, of the Corporation shall not be amended in any manner which would materially alter or change the powers, preferences or special rights of the Series C Preferred Stock so as to affect them adversely without the affirmative vote of the holders of at least two-thirds of the outstanding shares of Series C Preferred Stock, voting together as a single class.

Section 11. Fractional Shares. Series C Preferred Stock may be issued in fractions of a share which shall entitle the holder, in proportion to such holder's fractional shares, to exercise voting rights, receive dividends, participate in distributions and have the benefit of all other rights of holders of Series C Preferred Stock.

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IN WITNESS WHEREOF, this Certificate of Designations is executed on behalf of the Corporation by its Chief Executive Officer this 10th day of December, 2001.

HYBRIDON, INC.

By: /s/ Stephen R. Seiler  
Name: Stephen R. Seiler  
Title: Chief Executive Officer

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CERTIFICATE OF INCREASE  
OF  
SERIES C JUNIOR PARTICIPATING PREFERRED STOCK  
OF  
HYBRIDON, INC.

(Pursuant to Section 151(g) of the  
Delaware General Corporation Law)

Hybridon, Inc., a corporation organized and existing under the Delaware General Corporation Law (the "Corporation") does hereby certify:

FIRST: In a Certificate of Designations filed with the Secretary of State of the State of Delaware on December 10, 2001, pursuant to Section 151 of the Delaware General Corporation Law, the Corporation was authorized to issue 100,000 shares of Series C Junior Participating Preferred Stock as a series of the Corporation's authorized Preferred Stock, par value \$.01 per share; and

SECOND: The board of directors of the Corporation, by resolution adopted June 22, 2003, duly authorized and directed that the number of shares of the Corporation's Series C Junior Participating Preferred Stock be increased from 100,000 shares to 150,000 shares.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Increase to be signed by its duly authorized officer this 4th day of December, 2003.

By: /s/Stephen R. Seiler  
-----  
Name: Stephen R. Seiler  
Title: Chief Executive Officer

CERTIFICATE OF AMENDMENT

OF  
RESTATED CERTIFICATE OF INCORPORATION  
OF  
HYBRIDON, INC.

Hybridon, Inc. (hereinafter called the "Corporation"), organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

By action of the Board of Directors of the Corporation at a meeting a resolution was duly adopted, pursuant to Section 242 of the General Corporation Law of the State of Delaware, setting forth amendments to the Certificate of Incorporation of the Corporation and declaring said amendments to be advisable. The stockholders of the Corporation duly approved said proposed amendments at a meeting in accordance with Section 242 of the General Corporation Law of the State of Delaware. The resolutions setting forth the amendments are as follows:

RESOLVED: That Section 2(a) of the Certificate of Designation of the Series A Convertible Preferred Stock of the Corporation filed on May 6, 1998 is hereby amended by deleting the reference to "6.5%" therein and inserting in lieu thereof "1.0%".

RESOLVED: That Section 3(a) of the Certificate of Designation of the Series A Convertible Preferred Stock of the Corporation filed on May 6, 1998 is hereby amended by deleting the first sentence of Section 3(a) in its entirety and inserting in lieu thereof the following sentence:

"3. Liquidation Preference. (a) In the event of a (i) liquidation, dissolution or winding up of the Corporation, whether voluntary or involuntary, (ii) a sale or other disposition of all or substantially all of the assets of the Corporation or (iii) any consolidation, merger, combination, reorganization or other transaction in which the Corporation is not the surviving entity or shares of Common Stock constituting in excess of 50% of the voting power of the Corporation are exchanged for or changed into stock or securities of another entity, cash and/or any other property (a "Merger Transaction") (items (i), (ii) and (iii) of this sentence being collectively referred to as a "Liquidation Event"), after payment or provision for payment of debts and other liabilities of the Corporation, the holders of the Series A Preferred Stock then outstanding shall be entitled to be paid out of the assets of the Corporation available for distribution to its stockholders, whether such assets are capital, surplus, or earnings, before any payment or declaration and setting apart for payment of any amount shall be made in respect of any Junior Stock of the Corporation, an amount equal to \$1.00 per share (subject to appropriate adjustment in the event of any stock split, stock dividend, combination or other similar recapitalization affecting the Series A Preferred Stock), plus any dividends declared or accrued but unpaid on such shares; provided, however, in the case of a Merger Transaction, such payment may be made in cash, property (valued as provided in Subsection 3(b)) and/or securities (valued as provided in Subsection 3(b)) of the entity surviving such Merger Transaction."

RESOLVED: That Section 4(a) of the Certificate of Designation of the Series A Convertible Preferred Stock of the Corporation filed on May 6, 1998 is hereby amended by deleting the first paragraph of Section 4(a) in its entirety and inserting in lieu thereof the following paragraph:

"(a) Right of Conversion. Commencing after the expiration of 12 months following the Alternative Equity Closing Date (as hereinafter defined), but not prior thereto, the shares of Series A Preferred Stock shall be convertible, in whole or in part, at the option of the holder thereof and upon notice to the Corporation as set forth in Subsection 4(b), into fully paid and nonassessable shares of Common Stock and such other securities and property as hereinafter provided. The initial conversion price per share of Common Stock (the "Conversion Price"), shall be equal to the product of 2.125 multiplied by the per share price (the "Stated Common Price") of Common Stock sold by the Corporation in connection with the Alternative Equity Offering (as such term is defined in the Corporation's Offer to Exchange dated February 6, 1998 (the "Original Offer to Exchange"), as amended by the Amendment thereto (the "Amendment") dated March 30, 1998 (collectively, the "Offer to Exchange")) and shall be subject to adjustment as provided herein. The rate at which each share of Series A Preferred Stock is convertible at any time into Common Stock (the "Conversion Rate") shall be determined by dividing the then existing Conversion

Price (determined in accordance with this Section 4, including the last paragraph hereof) into the Dividend Base Amount; provided, however, that, during the period beginning on the date of the filing of this Certificate of Amendment and ending on the date 60 days after the date of the filing of this Certificate of Amendment (the "Early Conversion Period"), the Conversion Rate shall be determined by dividing the Conversion Price (in effect as of the first day of the Early Conversion Period) into an amount equal to 125% of the Dividend Base Amount. For illustrative purposes only, if the Conversion Price equals \$4.25 and the Dividend Base Amount equals \$100.00, then each share of Series A Preferred Stock will be convertible into 23.53 shares of Common Stock (\$100.00 / \$4.25); provided, however, that during the Early Conversion Period, each share of Series A Preferred Stock will be convertible into 29.41 shares of Common Stock (\$125.00 / \$4.25)."

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its authorized officer on the 4th day of December, 2003.

By: /s/Stephen R. Seiler

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Name: Stephen R. Seiler  
Title: Chief Executive Officer

CERTIFICATE OF AMENDMENT  
TO THE  
RESTATED CERTIFICATE OF INCORPORATION  
OF  
HYBRIDON, INC.

Hybridon, Inc. (hereinafter called the "Corporation"), organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

At a meeting of the Board of Directors of the Corporation a resolution was duly adopted, pursuant to Section 242 of the General Corporation Law of the State of Delaware, setting forth an amendment to the Restated Certificate of Incorporation of the Corporation, as amended to date (the "Certificate of Incorporation"), and declaring said amendment to be advisable. The stockholders of the Corporation duly approved said proposed amendment in accordance with Section 242 of the General Corporation Law of the State of Delaware at a meeting of stockholders held on June 24, 2004. The resolution setting forth the amendment is as follows:

RESOLVED: That the first paragraph of Article FOURTH of the Certificate of Incorporation be and hereby is amended and restated in its entirety so that the same shall read as follows:

"FOURTH. The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) One Hundred Eighty Five Million (185,000,000) shares of Common Stock, \$.001 par value per share ("Common Stock"), and (ii) Five Million (5,000,000) shares of Preferred Stock, \$.01 par value per share ("Preferred Stock"), which may be issued from time to time in one or more series as set forth in Part B of this Article FOURTH."

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its Chief Executive Officer on this 25th day of June 2004.

HYBRIDON, INC.

/s/ Stephen R. Seiler

-----  
Name: Stephen R. Seiler  
Title: Chief Executive Officer

CERTIFICATE OF INCREASE

OF

SERIES C JUNIOR PARTICIPATING PREFERRED STOCK

OF

HYBRIDON, INC.

(Pursuant to Section 151(g) of the  
Delaware General Corporation Law)

Hybridon, Inc., a corporation organized and existing under the Delaware General Corporation Law (the "Corporation") does hereby certify:

FIRST: In a Certificate of Designations filed with the Secretary of State of the State of Delaware on December 10, 2001, pursuant to Section 151 of the Delaware General Corporation Law, the Corporation was authorized to issue 100,000 shares of Series C Junior Participating Preferred Stock as a series of the Corporation's authorized Preferred Stock, par value \$.01 per share;

SECOND: In a Certificate of Increase filed with the Secretary of State of the State of Delaware on December 4, 2003, pursuant to Section 151 of the Delaware General Corporation Law, the number of authorized shares of the Corporation's Series C Junior Participating Preferred Stock was increased from 100,000 to 150,000; and

THIRD: The board of directors of the Corporation, by resolution adopted March 15, 2005, duly authorized and directed that the number of authorized shares of the Corporation's Series C Junior Participating Preferred Stock be increased from 150,000 shares to 185,000 shares.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Increase to be signed by its duly authorized officer this 24th day of March, 2005.

By: /s/ Sudhir Agrawal

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Name: Sudhir Agrawal, D. Phil  
Title: Chief Executive Officer, President  
and Chief Scientific Officer

CERTIFICATE OF AMENDMENT

TO THE

RESTATED CERTIFICATE OF INCORPORATION

OF

HYBRIDON, INC.

Hybridon, Inc. (hereinafter called the "Corporation"), organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

At a meeting of the Board of Directors of the Corporation a resolution was duly adopted, pursuant to Section 242 of the General Corporation Law of the State of Delaware, setting forth an amendment to the Restated Certificate of Incorporation of the Corporation, as amended to date (the "Certificate of Incorporation"), and declaring said amendment to be advisable. The stockholders of the Corporation duly approved said proposed amendment in accordance with

Section 242 of the General Corporation Law of the State of Delaware at a meeting of stockholders held on June 15, 2005. The resolution setting forth the amendment is as follows:

RESOLVED: That the first paragraph of Article FOURTH of the Certificate of Incorporation be and hereby is amended and restated in its entirety so that the same shall read as follows:

"FOURTH. The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) Two Hundred Million (200,000,000) shares of Common Stock, \$.001 par value per share ("Common Stock"), and (ii) Five Million (5,000,000) shares of Preferred Stock, \$.01 par value per share ("Preferred Stock"), which may be issued from time to time in one or more series as set forth in Part B of this Article FOURTH."

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its Chief Executive Officer on this 17th day of June 2005.

HYBRIDON, INC.

/s/ Sudhir Agrawal

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Name: Sudhir Agrawal  
Title: Chief Executive Officer

CERTIFICATE OF INCREASE

OF

SERIES C JUNIOR PARTICIPATING PREFERRED STOCK

OF

HYBRIDON, INC.

(Pursuant to Section 151(g) of the  
Delaware General Corporation Law)

Hybridon, Inc., a corporation organized and existing under the Delaware General Corporation Law (the "Corporation") does hereby certify:

- FIRST: In a Certificate of Designations filed with the Secretary of State of the State of Delaware on December 10, 2001, pursuant to Section 151 of the Delaware General Corporation Law, the Corporation was authorized to issue 100,000 shares of Series C Junior Participating Preferred Stock as a series of the Corporation's authorized Preferred Stock, par value \$.01 per share;
- SECOND: In a Certificate of Increase filed with the Secretary of State of the State of Delaware on December 4, 2003, pursuant to Section 151 of the Delaware General Corporation Law, the number of authorized shares of the Corporation's Series C Junior Participating Preferred Stock was increased from 100,000 to 150,000;
- THIRD: In a Certificate of Increase filed with the Secretary of State of the State of Delaware on March 24, 2005, pursuant to Section 151 of the Delaware General Corporation Law, the number of authorized shares of the Corporation's Series C Junior Participating Preferred Stock was increased from 150,000 to 185,000; and
- FOURTH: The board of directors of the Corporation, by resolution adopted March 15, 2005, duly authorized and directed that, effective as of June 15, 2005, the number of authorized shares of the Corporation's Series C Junior Participating Preferred Stock be increased from 185,000 shares to 200,000 shares.

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Increase to be signed by its duly authorized officer this 21st day of June 2005.

By: /s/ Robert G. Andersen

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Name: Robert G. Andersen  
Title: Chief Financial Officer

CERTIFICATE OF OWNERSHIP AND MERGER  
MERGING  
IDERA PHARMACEUTICALS, INC.  
(A DELAWARE CORPORATION)  
INTO  
HYBRIDON, INC.  
(A DELAWARE CORPORATION)

Pursuant to Section 253 of the General Corporation Law of the State of Delaware, Hybridon, Inc., a corporation organized and existing under and by virtue of the General Corporation Law of the State of Delaware (the "Corporation"), does hereby certify:

FIRST: That the Corporation was incorporated on May 25, 1989, pursuant to the General Corporation Law of the State of Delaware.

SECOND: That the Corporation owns all of the outstanding shares of the capital stock of Idera Pharmaceuticals, Inc., a corporation incorporated on August 24, 2005, pursuant to the General Corporation Law of the State of Delaware (the "Subsidiary").

THIRD: That on September 9, 2005, the Board of Directors of the Corporation, acting by written consent in accordance with Section 141(f) of the General Corporation Law of the State of Delaware, duly adopted the following resolutions and determined to merge the Subsidiary into the Corporation and change the Corporation's corporate name to "Idera Pharmaceuticals, Inc." on the conditions set forth in such resolutions:

RESOLVED: That, the Corporation shall, pursuant to Section 253 of the Delaware Code, merge into itself Idera Pharmaceuticals, Inc., a wholly owned subsidiary of the Corporation (the "Subsidiary"), and shall assume all of the Subsidiary's liabilities and obligations (the "Merger"); and that upon the effectiveness of the Merger, the Corporation's corporate name shall be changed to "Idera Pharmaceuticals, Inc."

RESOLVED: That the Corporation, as the sole stockholder of the Subsidiary, be and hereby is authorized to take such actions as are necessary or appropriate to effect the Merger.

RESOLVED: That the Chief Executive Officer and the Chief Financial Officer of the Corporation (the "Proper Officers") be, and either acting singly, hereby is authorized and directed in the name and on behalf of the Corporation to prepare, execute and file with the Secretary of State of the State of Delaware a Certificate of Ownership and Merger setting forth a copy of the resolutions to merge the Subsidiary into the Corporation and to assume the liabilities and obligations of said Subsidiary and to change the Corporation's corporate name to "Idera Pharmaceuticals, Inc." upon the effectiveness of the Merger; and that the execution and filing thereof be conclusive evidence of such approval and the authorization therefor by the Board of Directors of the Corporation.

FOURTH: That the Merger of Subsidiary into the Corporation be effective as of September 12, 2005 at 4:01 p.m. (ET).

IN WITNESS WHEREOF, the Corporation has caused this Certificate to be



signed by its authorized officer this 12th day of September, 2005.

HYBRIDON, INC.

By: /s/ Sudhir Agrawal

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Name: Sudhir Agrawal  
Title: Chief Executive Officer and  
President

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CERTIFICATE OF AMENDMENT  
TO THE  
RESTATED CERTIFICATE OF INCORPORATION  
OF  
IDERA PHARMACEUTICALS, INC.

Idera Pharmaceuticals, Inc. (hereinafter called the "Corporation"), organized and existing under and by virtue of the General Corporation Law of the State of Delaware, does hereby certify as follows:

By action of the Board of Directors of the Corporation at a meeting held on April 12, 2006, the Board of Directors of the Corporation duly adopted a resolution, pursuant to Section 242 of the General Corporation Law of the State of Delaware, setting forth an amendment to the Restated Certificate of Incorporation of the Corporation, as amended to date (the "Certificate of Incorporation"), and declaring said amendment to be advisable. The stockholders of the Corporation duly approved said proposed amendment in accordance with Section 242 of the General Corporation Law of the State of Delaware at a meeting of stockholders held on June 7, 2006. The resolution setting forth the amendment is as follows:

RESOLVED: That the first paragraph of Article FOURTH of the Certificate of Incorporation be and hereby is amended and restated in its entirety so that the same shall read as follows:

"FOURTH. That, effective at 5:00 p.m., eastern time, on the filing date of this Certificate of Amendment of Restated Certificate of Incorporation, as amended, (the "Effective Time"), a one-for-eight reverse stock split of the Corporation's Common Stock (as defined below) shall become effective, pursuant to which each eight shares of Common Stock outstanding and held of record by each stockholder of the Corporation (including treasury shares) immediately prior to the Effective Time shall be reclassified and combined into one share of Common Stock automatically and without any action by the holder thereof upon the Effective Time and shall represent one share of Common Stock from and after the Effective Time. No fractional shares of Common Stock shall be issued as a result of such reclassification and combination. In lieu of any fractional shares to which the stockholder would otherwise be entitled, the Corporation shall pay cash equal to such fraction multiplied by the average of the high and low trading prices of the Common Stock on the American Stock Exchange during regular trading hours for the five trading days immediately preceding the Effective Time.

The total number of shares of all classes of stock which the Corporation shall have authority to issue is (i) Forty Million (40,000,000) shares of Common Stock, \$.001 par value per share ("Common Stock"), and (ii) Five Million (5,000,000) shares of Preferred Stock, \$.01 par value per share ("Preferred Stock"), which may be issued from time to time in one or more series as set forth in Part B of this Article FOURTH."

IN WITNESS WHEREOF, the Corporation has caused this Certificate of Amendment to be signed by its duly authorized officer this 29th day of June 2006.

IDERA PHARMACEUTICALS, INC.

By: /s/ Robert G. Andersen

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Robert G. Andersen  
Chief Financial Officer,  
Vice President Operations

AMENDMENT NO. 1 TO THE COMMON STOCK PURCHASE AGREEMENT

July 10, 2006

This Amendment No. 1 (this "Amendment") to the Common Stock Purchase Agreement (the "Agreement") dated March 24, 2006, by and between Biotech Shares Ltd., an entity organized and existing under the laws of the Isle of Man (the "Investor"), and Idera Pharmaceuticals, Inc., a corporation organized and existing under the laws of the State of Delaware (the "Company"), is entered into as of the 10th day of July 2006.

WHEREAS, under the terms of the Agreement the Company has the right to sell to the Investor up to \$2,500,000 of the Company's Common Stock prior to the effectiveness of the Pre-Issuance Registration Statement (as such term is defined in the Agreement);

WHEREAS, the Company and the Investor have agreed pursuant to an amendment to the Registration Rights Agreement (as defined in the Agreement) that the Company shall not be obligated to file the Pre-Issuance Registration Statement with the United States Securities and Exchange Commission until August 14, 2006; and

WHEREAS, the Company desires to sell to the Investor in excess of \$2,500,000 of the Company's Common Stock prior to such date;

WHEREAS, in order to allow the Company to sell the desired number of shares of its Common Stock prior to such date, the Company and the Investor agree that certain terms of the Agreement must be amended.

NOW, THEREFORE, the Company and the Investor agree as follows:

Amendment to \$2,500,000 Purchase Amount Limitation.  
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1. The second sentence of Section 3(a) of the Agreement is hereby deleted in its entirety and the following is substituted in lieu thereof:

"(a) If the Purchase Notice involves a Purchase Amount, which when aggregated with the Purchase Amount of Common Stock previously sold to the Investor hereunder exceeds \$3,500,000, the Company shall confirm in such Purchase Notice that a registration statement (the "Pre-Issuance Registration Statement") covering the resale of the shares of Common Stock to be issued on such closing date has been declared and is effective and that the certificates representing such shares shall not bear a restricted securities legend."

2. Section 3(d) of the Agreement is hereby deleted in its entirety and the following is substituted in lieu thereof:

"(d) Notwithstanding the foregoing, the Investor shall have no obligation hereunder to purchase any shares of Common Stock if the Purchase Amount of such shares, when aggregated with the Purchase Amount of Common Stock previously sold to the Investor under this Agreement, exceeds \$3,500,000 unless the Pre-Issuance Registration Statement

has been declared and is effective and the certificates representing such shares will not bear a restricted securities legend."

Reverse Split Purchase Price.  
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In order to reflect the reverse stock split effected on June 30, 2006, Section 3(b) of the Agreement is hereby deleted in its entirety and the following is substituted in lieu thereof:

"(b) The number of shares of Common Stock to be issued in connection with a Purchase Notice shall be determined by dividing (1) the Purchase

Amount specified in the Purchase Notice by (ii) the greater of (A) \$5.12 and (B) 80% of the volume-weighted average of the Closing Prices (as defined below) of the Common Stock for the five consecutive Trading Days (as defined below) immediately preceding the date that the Company sends such Purchase Notice to the Investor."

Purchase Notice.

1. Attached hereto as Exhibit A is a Purchase Notice providing for the sale of \$3,500,000 of Common Stock to the Investor at a closing to be held on July 24, 2006, pursuant to the terms of the Agreement, as amended by this Amendment.
2. The Investor acknowledges the delivery of the Purchase Notice as of the date hereof.

Miscellaneous

1. This Amendment may be executed in identical counterparts, each of which shall be deemed an original but all of which shall constitute one and the same agreement. This Amendment, once executed by a party, may be delivered by facsimile transmission of a copy of this Amendment bearing the signature of the party so delivering this Amendment.
2. Except as expressly modified by or pursuant to this Amendment, the Common Stock Purchase Agreement shall remain in full force and effect without any other change or modification.

IN WITNESS WHEREOF, the parties have caused this Amendment No. 1 to the Agreement to be duly executed as of the day and year first above written.

COMPANY:

IDERA PHARMACEUTICALS, INC.

By: /s/ Sudhir Agrawal

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Name: Sudhir Agrawal  
Title: Chief Executive Officer

INVESTOR:

BIOTECH SHARES LTD.

By: /s/ Oussama Salam

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Name: Oussama Salam  
Title: Director

Exhibit A

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IDERA PHARMACEUTICALS, INC.  
345 VASSAR STREET  
CAMBRIDGE, MA 02139-4818

July 10, 2006

Biotech Shares Ltd.  
St. James's Chambers  
64A Athol Street  
Isle of Man IM1 1JE

Re: Purchase Notice

Gentlemen:

Pursuant to and in accordance with the terms of that certain Common Stock Purchase Agreement, dated March 24, 2006 (the "PURCHASE AGREEMENT"), as amended, by and between Biotech Shares Ltd. (the "INVESTOR") and Idera Pharmaceuticals, Inc. (the "COMPANY"), the Company hereby provides notice (the "PURCHASE NOTICE") to the Investor that the Company has duly elected to issue and sell to the Investor, and the Investor is hereby obligated to purchase from the Company, the number of shares of common stock of the Company, US\$0.001 par value per share (the "COMMON STOCK"), set forth below, on such date and for such dollar amount as is set forth below (the "DRAWDOWN"):

1. The number of shares of Common Stock to be issued to the Investor on the Drawdown Date (as defined below) to its account with First National Bank S.A.L.: 683,593 the "SHARES").
2. The dollar amount of the Shares: US\$3,499,996.16 (the "PURCHASE AMOUNT" or "DRAWDOWN AMOUNT").
3. The closing date for the Drawdown (and the date on which payment of the Purchase Amount shall be made to the Company): July 24, 2006 (the "DRAWDOWN DATE").
4. The price per share of the Common Stock used to calculate the number of Shares to be issued on the Drawdown Date: US\$5.12 per share of Common Stock.

The Company hereby confirms that the Shares and the Drawdown Amount are in compliance with all of the terms and conditions of the Purchase Agreement.

IDERA PHARMACEUTICALS, INC.

By: /s/ Sudhir Agrawal

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Name:  
Title:

AMENDMENT NO. 1 TO REGISTRATION RIGHTS AGREEMENT

June 23, 2006

The undersigned parties to the Registration Rights Agreement, dated as of March 24, 2006, by and between Idera Pharmaceuticals, Inc., a Delaware corporation (the "Company"), and the parties named therein (the "Registration Rights Agreement"), do hereby consent to this Amendment No. 1 to the Registration Rights Agreement (this "Amendment") and agree as follows:

1. That Section 2(b) of the Registration Rights Agreement be deleted in its entirety and the following be substituted therefor:

"(b) The Company shall use its best efforts to prepare and file with the Commission on or prior to August 14, 2006 a Registration Statement (the "Pre-Issuance Registration Statement") covering the resale of the maximum number of shares of Common Stock that may be issued to the Investor pursuant to Section 3 of the Purchase Agreement as of the filing of such Pre-Issuance Registration Statement. The Company shall use its best efforts to have the Pre-Issuance Registration Statement declared effective by the Commission within 90 days after the date the Pre-Issuance Registration Statement is filed or as soon as possible thereafter."

2. That Section 2(c) of the Registration Rights Agreement be deleted in its entirety and the following be substituted therefor:

"(c) In the event that any shares of Common Stock are issued to the Investor pursuant to Section 3 of the Purchase Agreement prior to the date the Pre-Issuance Registration Statement is filed by the Company with the Commission (the "Unregistered Shares"), the Company shall use its best efforts to prepare and file with the Commission within 7 days of the date such Unregistered Shares are issued by the Company a Registration Statement (an "Additional Registration Statement") covering the resale of such Unregistered Shares. The Company shall use its best efforts to have an Additional Registration Statement declared effective by the Commission within 90 days after the date such Additional Registration Statement is filed or as soon as possible thereafter.

3. This Amendment may be executed in identical counterparts, each of which shall be deemed an original but all of which shall constitute one and the same agreement. This Amendment, once executed by a party, may be delivered by facsimile transmission of a copy of this Amendment bearing the signature of the party so delivering this Amendment.

4. Except as expressly modified by or pursuant to this Amendment, the Registration Rights Agreement shall remain in full force and effect without any other change or modification.

IN WITNESS WHEREOF, the parties have caused this Amendment No. 1 to the Registration Rights Agreement to be duly executed as of the day and year first above written.

COMPANY:

IDERA PHARMACEUTICALS, INC.

By: /s/ Sudhir Agrawal

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Name: Sudhir Agrawal  
Title: Chief Executive Officer

INVESTOR:

BIOTECH SHARES LTD.

By: /s/ Oussama Salam

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Name: Oussama Salam  
Title: Director

IDERA PHARMACEUTICALS, INC.  
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2005 STOCK INCENTIVE PLAN\*  
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1. Purpose

The purpose of this 2005 Stock Incentive Plan (the "Plan") of Idera Pharmaceuticals, Inc., a Delaware corporation (the "Company"), is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to align their interests with those of the Company's stockholders. Except where the context otherwise requires, the term "Company" shall include any of the Company's present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code") and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board of Directors of the Company (the "Board").

2. Eligibility

All of the Company's employees, officers and directors and all of the Company's consultants and advisors that are natural persons are eligible to receive options, stock appreciation rights, restricted stock, restricted stock units and other stock-based awards (each, an "Award") under the Plan. Each person who receives an Award under the Plan is deemed a "Participant".

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient to carry the Plan into effect and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board's sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award. No director or person acting pursuant to the authority delegated by the Board shall be liable for any action or determination relating to or under the Plan made in good faith.

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\* Reflects amendment to Plan approved by the Company's stockholders on June 7, 2006 and the one-for-eight reverse stock split effected on June 29, 2006.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a "Committee"). All references in



the Plan to the "Board" shall mean the Board or a Committee of the Board or the officers referred to in Section 3(c) to the extent that the Board's powers or authority under the Plan have been delegated to such Committee or officers.

(c) Delegation to Officers. To the extent permitted by applicable law, the Board may delegate to one or more officers of the Company the power to grant Awards to employees or officers of the Company or any of its present or future subsidiary corporations and to exercise such other powers under the Plan as the Board may determine, provided that the Board shall fix the terms of the Awards to be granted by such officers (including the exercise price of such Awards, which may include a formula by which the exercise price will be determined) and the maximum number of shares subject to Awards that the officers may grant; and provided further, however, that no officer shall be authorized to grant Awards to any "executive officer" of the Company (as defined by Rule 3b-7 under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) or to any "officer" of the Company (as defined by Rule 16a-1 under the Exchange Act).

#### 4. Stock Available for Awards

(a) Number of Shares. Subject to adjustment under Section 9, Awards may be made under the Plan for up to 1,125,000 shares of common stock, \$0.001 par value per share, of the Company (the "Common Stock"). If any Award expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right) or results in any Common Stock not being issued, the unused Common Stock covered by such Award shall again be available for the grant of Awards under the Plan. However, in the case of Incentive Stock Options (as hereinafter defined), the foregoing provisions shall be subject to any limitations under the Code. Shares issued under the Plan may consist in whole or in part of authorized but unissued shares or treasury shares.

(b) Sub-limits. Subject to adjustment under Section 9, the following sub-limits on the number of shares subject to Awards shall apply:

(1) Section 162(m) Per-Participant Limit. The maximum number of shares of Common Stock with respect to which Awards may be granted to any Participant under the Plan shall be 125,000 per calendar year. For purposes of the foregoing limit, the combination of an Option in tandem with an SAR (as each term is hereafter defined) shall be treated as a single Award. The per-Participant limit described in this Section 4(b)(1) shall be construed and applied consistently with Section 162(m) of the Code or any successor provision thereto, and the regulations thereunder ("Section 162(m)").

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(2) Limit on Awards that Vest Based Upon the Passage of Time Alone. The maximum number of shares of Common Stock with respect to which Restricted Stock Awards and Other Stock Unit Awards that either require no purchase by the Participant or vest on the basis of the passage of time alone may be granted shall be 62,500.

#### 5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an "Option") and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable. An Option which is not intended to be an Incentive Stock Option (as hereinafter defined) shall be designated a "Nonstatutory Stock Option".

(b) Incentive Stock Options. An Option that the Board intends to be an "incentive stock option" as defined in Section 422 of the Code (an "Incentive Stock Option") shall only be granted to employees of Hybridon, Inc., any of Hybridon Inc.'s present or future parent or subsidiary corporations as defined

in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. The Company shall have no liability to a Participant, or any other party, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or for any action taken by the Board pursuant to Section 10(f), including without limitation the conversion of an Incentive Stock Option to a Nonstatutory Stock Option.

(c) Exercise Price. The Board shall establish the exercise price of each Option and specify such exercise price in the applicable option agreement.

(d) Duration of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement; provided, however, that no Option will be granted for a term in excess of 10 years.

(e) No Reload Rights. No Option granted under the Plan shall contain any provision entitling the optionee to the automatic grant of additional Options in connection with any exercise of the original Option.

(f) Exercise of Option. Options may be exercised by delivery to the Company of a written notice of exercise signed by the proper person or by any other form of notice (including electronic notice) approved by the Board together with payment in full as specified in Section 5(g) for the number of shares for which the Option is exercised. Shares of Common Stock subject to the Option will be delivered by the Company following exercise either as soon as practicable or, subject to such conditions as the Board shall specify, on a deferred basis (with the Company's obligation to be evidenced by an instrument providing for future delivery of the deferred shares at the time or times specified by the Board).

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(g) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(1) in cash, by check or by wire transfer, payable to the order of the Company;

(2) except as the Board may otherwise provide in an option agreement, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) for so long as the Common Stock is registered under the Exchange Act, by delivery of shares of Common Stock owned by the Participant valued at their fair market value as determined by (or in a manner approved by) the Board ("Fair Market Value"), provided (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board in its discretion and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent permitted by applicable law and by the Board, by (i) delivery of a promissory note of the Participant to the Company on terms determined by the Board, or (ii) payment of such other lawful consideration as the Board may determine; or

(5) by any combination of the above permitted forms of payment.

(h) Substitute Options. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Options in substitution for any options or other stock or stock-based awards granted by such entity or an affiliate thereof. Substitute Options may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Options contained in the other sections of this Section 5 or in Section 2. Substitute Options shall not count against the overall share limit set forth in Section 4(a), except as may be required by reason of Section 422 and related provisions of the Code.

6. Stock Appreciation Rights.

(a) General. A Stock Appreciation Right, or SAR, is an Award entitling the holder, upon exercise, to receive an amount in Common Stock determined by reference to appreciation, from and after the date of grant, in the fair market value of a share of Common Stock. The date as of which such appreciation or other measure is determined shall be the exercise date.

(b) Grants. Stock Appreciation Rights may be granted in tandem with, or independently of, Options granted under the Plan.

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(1) Tandem Awards. When Stock Appreciation Rights are expressly granted in tandem with Options, (i) the Stock Appreciation Right will be exercisable only at such time or times, and to the extent, that the related Option is exercisable (except to the extent designated by the Board in connection with a Reorganization Event) and will be exercisable in accordance with the procedure required for exercise of the related Option; (ii) the Stock Appreciation Right will terminate and no longer be exercisable upon the termination or exercise of the related Option, except to the extent designated by the Board in connection with a Reorganization Event; provided that a Stock Appreciation Right granted with respect to less than the full number of shares covered by an Option will not be reduced until the number of shares as to which the related Option has been exercised or has terminated is less than the number of shares covered by the Stock Appreciation Right; (iii) the Option will terminate and no longer be exercisable upon the exercise of the related Stock Appreciation Right; and (iv) the Stock Appreciation Right will be transferable only with the related Option.

(2) Independent SARs. A Stock Appreciation Right not expressly granted in tandem with an Option will become exercisable at such time or times, and on such conditions, as the Board may specify in the SAR Award.

(c) Exercise. Stock Appreciation Rights may be exercised by delivery to the Company of a written notice of exercise signed by the proper person or by any other form of notice (including electronic notice) approved by the Board, together with any other documents required by the Board.

7. Restricted Stock; Restricted Stock Units.

(a) General. The Board may grant Awards entitling recipients to acquire shares of Common Stock ("Restricted Stock"), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price (or to require forfeiture of such shares if issued at no cost) from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. Instead of granting Awards for Restricted Stock, the Board may grant Awards entitling the recipient to receive shares of Common Stock to be delivered at the time such shares of Common Stock vest ("Restricted Stock Units") (Restricted Stock and Restricted Stock Units are each referred to herein as a "Restricted Stock Award").

(b) Terms and Conditions. The Board shall determine the terms and conditions of a Restricted Stock Award, including the conditions for repurchase (or forfeiture) and the issue price, if any.

(c) Stock Certificates. Any stock certificates issued in respect of a Restricted Stock Award shall be registered in the name of the Participant and,

unless otherwise determined by the Board, deposited by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the

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Participant or if the Participant has died, to the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death (the "Designated Beneficiary"). In the absence of an effective designation by a Participant, "Designated Beneficiary" shall mean the Participant's estate.

8. Other Stock-Based Awards.

Other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property, may be granted hereunder to Participants ("Other Stock Unit Awards"), including without limitation Awards entitling recipients to receive shares of Common Stock to be delivered in the future. Such Other Stock Unit Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock Unit Awards may be paid in shares of Common Stock or cash, as the Board shall determine. Subject to the provisions of the Plan, the Board shall determine the conditions of each Other Stock Unit Awards, including any purchase price applicable thereto.

9. Adjustments for Changes in Common Stock and Certain Other Events.

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under this Plan, (ii) the sub-limits set forth in Section 4(b), (iii) the number and class of securities and exercise price per share of each outstanding Option, (iv) the share- and per-share provisions of each Stock Appreciation Right, (v) the share- and per-share provisions and the repurchase price per share subject to each outstanding Restricted Stock Award and (vi) the share- and per-share-related provisions of each outstanding Other Stock Unit Award, shall be appropriately adjusted by the Company (or substituted Awards may be made, if applicable) to the extent determined by the Board.

(b) Reorganization Events.

(1) Definition. A "Reorganization Event" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any exchange of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange transaction or (c) any liquidation or dissolution of the Company.

(2) Consequences of a Reorganization Event on Awards Other than Restricted Stock Awards. In connection with a Reorganization Event, the Board shall take any one or more of the following actions as to all or any outstanding Awards on such terms as the Board determines: (i) provide that Awards shall be assumed, or substantially equivalent Awards shall

be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to a Participant, provide that the Participant's unexercised Options or other unexercised Awards shall become exercisable in full and will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant within a specified period following the date of such notice, (iii) provide that outstanding Awards shall become realizable or deliverable, or restrictions applicable to an Award shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "Acquisition Price"), make or provide for a cash payment to a Participant equal to (A) the Acquisition Price times the number of shares of Common Stock subject to the Participant's Options or other Awards (to the extent the exercise price does not exceed the Acquisition Price) minus (B) the aggregate exercise price of all such outstanding Options or other Awards, in exchange for the termination of such Options or other Awards, (v) provide that, in connection with a liquidation or dissolution of the Company, Awards shall convert into the right to receive liquidation proceeds (if applicable, net of the exercise price thereof) and (vi) any combination of the foregoing.

For purposes of clause (i) above, an Option shall be considered assumed if, following consummation of the Reorganization Event, the Option confers the right to purchase, for each share of Common Stock subject to the Option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise of Options to consist solely of common stock of the acquiring or succeeding corporation (or an affiliate thereof) equivalent in value (as determined by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

(3) Consequences of a Reorganization Event on Restricted Stock Awards. Upon the occurrence of a Reorganization Event other than a liquidation or dissolution of the Company, the repurchase and other rights of the Company under each outstanding Restricted Stock Award shall inure to the benefit of the Company's successor and shall apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to the Common Stock subject to such Restricted Stock Award. Upon the occurrence of a Reorganization Event involving the liquidation or dissolution of the Company, except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock Award or any other agreement between a Participant and the Company, all restrictions and

conditions on all Restricted Stock Awards then outstanding shall automatically be deemed terminated or satisfied.

#### 10. General Provisions Applicable to Awards

(a) Transferability of Awards. Except as the Board may otherwise determine or provide in an Award, Awards shall not be sold, assigned,

transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an Incentive Stock Option, pursuant to a qualified domestic relations order, and, during the life of the Participant, shall be exercisable only by the Participant. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, retirement, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which, the Participant, or the Participant's legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) Withholding. Each Participant shall pay to the Company, or make provision satisfactory to the Company for payment of, any taxes required by law to be withheld in connection with an Award to such Participant. Except as the Board may otherwise provide in an Award, for so long as the Common Stock is registered under the Exchange Act, Participants may satisfy such tax obligations in whole or in part by delivery of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their Fair Market Value; provided, however, except as otherwise provided by the Board, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income). Shares surrendered to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements. The Company may, to the extent permitted by law, deduct any such tax obligations from any payment of any kind otherwise due to a Participant.

(f) Amendment of Award. The Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock

Option to a Nonstatutory Stock Option, provided that the Participant's consent to such action shall be required unless the Board determines that the action, taking into account any related action, would not materially and adversely affect the Participant.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(h) Acceleration. The Board may at any time provide that any Award shall become immediately exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in full or in part, as the case may be.

(i) Performance Conditions.

(1) This Section 10(i) shall be administered by a Committee approved by the Board, all of the members of which are "outside directors" as defined by Section 162(m) (the "Section 162(m) Committee").

(2) Notwithstanding any other provision of the Plan, if the Section 162(m) Committee determines, at the time a Restricted Stock Award or Other Stock Unit Award is granted to a Participant, that such Participant is, or may be as of the end of the tax year in which the Company would claim a tax deduction in connection with such Award, a Covered Employee (as defined in Section 162(m)), then the Section 162(m) Committee may provide that this Section 10(i) is applicable to such Award.

(3) If a Restricted Stock Award or Other Stock Unit Award is subject to this Section 10(i), then the lapsing of restrictions thereon and the distribution of cash or Shares pursuant thereto, as applicable, shall be subject to the achievement of one or more objective performance goals established by the Section 162(m) Committee, which shall be based on the relative or absolute attainment of specified levels of one or any combination of the following: (a) earnings per share, (b) return on average equity or average assets with respect to a pre-determined peer group, (c) earnings, (d) earnings growth, (e) revenues, (f) expenses, (g) stock price, (h) market share, (i) return on sales, assets, equity or investment, (j) regulatory compliance, (k) achievement of balance sheet or income statement objectives, (l) total shareholder return, (m) net operating profit after tax, (n) pre-tax or after-tax income, (o) cash flow, (p) achievement of research, development, clinical or regulatory milestones, (q) product sales and (r) business development activities, and may be absolute in their terms or measured against or in relationship to other companies comparably, similarly or otherwise situated. Such performance goals may be adjusted to exclude any one or more of (i) extraordinary items, (ii)

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gains or losses on the dispositions of discontinued operations, (iii) the cumulative effects of changes in accounting principles, (iv) the writedown of any asset, and (v) charges for restructuring and rationalization programs. Such performance goals: (i) may vary by Participant and may be different for different Awards; (ii) may be particular to a Participant or the department, branch, line of business, subsidiary or other unit in which the Participant works and may cover such period as may be specified by the Section 162(m) Committee; and (iii) shall be set by the Section 162(m) Committee within the time period prescribed by, and shall otherwise comply with the requirements of, Section 162(m).

(4) Notwithstanding any provision of the Plan, with respect to any Restricted Stock Award or Other Stock Unit Award that is subject to this Section 10(i), the Section 162(m) Committee may adjust downwards, but not upwards, the cash or number of Shares payable pursuant to such Award, and the Section 162(m) Committee may not waive the achievement of the applicable performance goals except in the case of the death or disability of the Participant.

(5) The Section 162(m) Committee shall have the power to impose such other restrictions on Awards subject to this Section 10(i) as it may deem necessary or appropriate to ensure that such Awards satisfy all requirements for "performance-based compensation" within the meaning of Section 162(m)(4)(C) of the Code, or any successor provision thereto.

11. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares. Notwithstanding the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to such Option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then an optionee who exercises an Option between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(c) Effective Date and Term of Plan. The Plan shall become effective on the date on which it is adopted by the Board, but no Award may be granted unless and until the Plan has been approved by the Company's stockholders. No Awards shall be granted under the Plan after the completion of 10 years from the earlier of (i) the date on which the Plan was adopted by the

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Board or (ii) the date the Plan was approved by the Company's stockholders, but Awards previously granted may extend beyond that date.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time; provided that, to the extent determined by the Board, no amendment requiring stockholder approval under any applicable legal, regulatory or listing requirement shall become effective until such stockholder approval is obtained. No Award shall be made that is conditioned upon stockholder approval of any amendment to the Plan.

(e) Provisions for Foreign Participants. The Board may modify Awards or Options granted to Participants who are foreign nationals or employed outside the United States or establish subplans or procedures under the Plan to recognize differences in laws, rules, regulations or customs of such foreign jurisdictions with respect to tax, securities, currency, employee benefit or other matters.

(f) Compliance With Code Section 409A. No Award shall provide for deferral of compensation that does not comply with Section 409A of the Code, unless the Board, at the time of grant, specifically provides that the Award is not intended to comply with Section 409A of the Code.

(g) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than such state.





AMENDMENT NO. 1 TO IDERA PHARMACEUTICALS, INC.  
1995 EMPLOYEE STOCK PURCHASE PLAN

Dated June 2006\*

That the first paragraph of the Idera Pharmaceuticals, Inc. 1995 Employee Stock Purchase Plan be deleted in its entirety and the following be substituted therefor:

"The purpose of this Plan is to provide eligible employees of Idera Pharmaceuticals, Inc. (the "Company") and certain of its subsidiaries with opportunities to purchase shares of the Company's Common Stock (the "Common Stock"). One Hundred Twenty Five Thousand (125,000) shares of Common Stock in the aggregate have been approved for this purpose."

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\* Reflects amendment to Plan approved by the Company's stockholders on June 7, 2006 and the one-for-eight reverse stock split effected on June 29, 2006.

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)) 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) [Not Applicable]
  - 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.

/s/ SUDHIR AGRAWAL

Sudhir Agrawal  
Chief Executive Officer

Dated: August 14, 2006

## 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, Robert G. Andersen 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)) 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) [Not Applicable]
  - 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.

/s/ ROBERT G. ANDERSEN

Robert G. Andersen  
Chief Financial Officer

Dated: August 14, 2006

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, 2006 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.

/s/ SUDHIR AGRAWAL

Sudhir Agrawal  
Chief Executive Officer

Date: August 14, 2006

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, 2006 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Robert G. Andersen, 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.

/s/ ROBERT G. ANDERSEN

Robert G. Andersen  
Chief Financial Officer

Date: August 14, 2006