ARQULE INC
Form 424B5
June 14, 2007

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PROSPECTUS SUPPLEMENT

Filed Pursuant to Rule 424(b)(5)
Registration No. 333-143162

(To Prospectus dated May 31, 2007)

7,000,000 Shares

Common Stock

We are offering all of the 7,000,000 shares of our common stock offered by this prospectus supplement.

Our common stock trades on the Nasdaq Global Market under the symbol "ARQL." On June 13, 2007, the last reported sale price of our common stock was $7.91 per share.

Investing in our common stock involves a high degree of risk. Before buying any shares, you should read carefully the discussion of material risks of investing in our common stock under the heading "Risk factors" beginning on page S-10 of this prospectus supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

	Per share	Total
Public offering price	$ 7.75	$ 54,250,000
Underwriting discounts and commissions	$ 0.48	$ 3,336,375
Proceeds, before expenses, to us	$ 7.27	$ 50,913,625

The underwriters may also purchase up to an additional 1,050,000 shares of common stock from us at the public offering price, less the underwriting discounts and commissions payable by us, to cover over-allotments, if any, within 30 days of the date of this prospectus supplement. If the underwriters exercise the option in full, the total underwriting discounts and commissions payable by us will be $3,836,831 and the total proceeds, before expenses, to us will be $58,550,669.

The underwriters are offering the shares of our common stock as set forth under "Underwriting." Delivery of the shares of common stock will be made on or about June 19, 2007.

Joint Book-Running Managers

UBS Investment Bank **CIBC World Markets**

Co-Managers

Leerink Swann & Company

Fortis Securities LLC

Rodman & Renshaw, LLC

The date of this prospectus supplement is June 13, 2007

You should read this prospectus supplement along with the accompanying prospectus and the information incorporated by reference in this prospectus supplement and the accompanying prospectus carefully before you invest in our common stock. These documents contain important information you should consider when making your investment decision. This prospectus supplement may add, update or change information in the accompanying prospectus. If information in this prospectus supplement, or the information incorporated by reference in this prospectus supplement, is inconsistent with the accompanying prospectus or the information incorporated by reference in the accompanying prospectus, this prospectus supplement, or the information incorporated by reference in this prospectus supplement, will supersede that information in the accompanying prospectus or the information incorporated by reference in the accompanying prospectus. You should rely only on the information provided in this prospectus supplement and the accompanying prospectus or incorporated by reference in this prospectus supplement and the accompanying prospectus. We have not authorized anyone to provide you with different information.

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References in this prospectus supplement and the accompanying prospectus to "ArQule," "the company," "we," "our" or "us" refer to ArQule, Inc., except where the context otherwise requires or as otherwise indicated.

Prospectus supplement summary

This summary highlights information contained in this prospectus supplement and the accompanying prospectus. Because it is a summary, it does not contain all the information you should consider before investing in our common stock. You should carefully read this entire prospectus supplement and the accompanying prospectus, including the "Risk factors" section and the documents incorporated by reference, before making an investment decision.

BUSINESS SUMMARY

We are a clinical-stage biotechnology company engaged in the research and development of innovative anti-cancer therapies. Our goal is to introduce novel products that act selectively against cancer cells, target multiple tumor types and are well tolerated by patients. We believe our clinical-stage products represent potential best-in class or first-in class small molecule candidates based on highly differentiated mechanisms of action.

Our clinical-stage products consist of: ARQ 197, an orally administered inhibitor of the c-Met receptor tyrosine kinase; ARQ 501, an intravenously administered novel activator of the cell's DNA damage response mechanism mediated by the E2F-1 transcription factor; and ARQ 171, an intravenously administered second generation activator of E2F-1. Early-stage clinical trial results, which are available for ARQ 197 and ARQ 501, have demonstrated promising anti-cancer activity across multiple types of tumors and favorable side effect profiles.

We retain full worldwide commercial rights to ARQ 197 outside of Japan and other select Asian countries, where we recently granted commercial rights to Kyowa Hakko Kogyo Co., Ltd. ("Kyowa"). We are developing ARQ 501, ARQ 171 and ARQ 761, a new chemical entity based on ARQ 501, pursuant to our collaboration with Hoffmann-La Roche ("Roche"). Our agreements with Kyowa and Roche each provide for possible future milestone payments, royalties on product sales, and development funding, in addition to upfront payments that we have already received.

Our pre-clinical programs are directed toward molecular targets that we believe play critical roles in the development of human cancers. The most advanced of these programs is focused on the development of an inhibitor of the B-RAF kinase. Toxicology testing is planned to begin in late 2007 with a product candidate from this program. Additional molecular targets being explored in our pre-clinical programs include Eg5, Hsp90 and HDAC. We may elect to out-license certain product candidates discovered through our pre-clinical programs to corporate partners.

Our products and research programs are based on our understanding of biological processes that lead to the proliferation and metastasis of cancer cells, combined with our ability to generate product candidates possessing certain pre-selected drug-like properties and acting specifically against cancer cells. We believe that these qualities, when present from the earliest stages of product development, increase the likelihood of producing safe, effective and marketable drugs. We believe that our combined expertise in biology and chemistry differentiates us.

Selected Drug Development Pipeline

The chart below displays certain of our development programs, their targets, the stage of development and the holders of commercial rights of these programs.

Drug/Program	Drug Target	Stage of Development	Commercial Rights
ARQ 501	E2F-1	Phase 2	Roche
ARQ 197	c-Met	Phase 1	ArQule (worldwide, except Japan and other select Asian countries) Kyowa (Japan and other select Asian countries)
ARQ 171	E2F-1	Phase 1	Roche
ARQ 761	E2F-1	Pre-clinical	Roche
ARQ-350RP	B-RAF	Pre-clinical	ArQule
ARQ-300RP	Eg5	Pre-clinical	ArQule
ARQ-250RP	Hsp90	Pre-clinical	ArQule
ARQ-700RP	HDAC	Pre-clinical	ArQule

RESEARCH AND DEVELOPMENT PLATFORMS

Clinical Stage Programs

ARQ 197: Inhibiting c-Met

ARQ 197 is the lead product from our Cancer Survival Pathways program. ARQ 197, an orally available small molecule, inhibits c-Met, an enzyme belonging to a group known as receptor tyrosine kinases that is believed to play key roles in cancer cell growth, survival, angiogenesis, invasion and metastasis. We believe the inappropriate expression of c-Met in most cancers and its role in controlling multiple signal transduction pathways involved in tumor growth and metastasis render it a highly compelling target for cancer therapy. ARQ 197 is highly specific for c-Met and does not compete with ATP, an energy source for cells, for its binding site to c-Met. Therefore, we believe ARQ 197 offers an attractive therapeutic profile based on a combination of safety and anti-cancer activity. Based on clinical studies to date, treatment with ARQ 197 has been well tolerated and resulted in tumor responses and prolonged stable disease across broad ranges of doses and tumors.

ARQ 501, ARQ 171 and ARQ 761: Activating E2F-1

ARQ 501, ARQ 171 and ARQ 761, the lead products from our Activated Checkpoint Therapy® (ACT) program, are designed to kill cancer cells selectively while sparing normal cells through direct activation of DNA damage response/checkpoint pathways. These small molecule compounds are believed to activate checkpoint pathways regulated by the E2F-1 regulatory protein, thus restoring the ability of the cell to recognize DNA damage and initiating the process of apoptosis, or programmed cell death, in these damaged cells. ARQ 171 is a second-generation compound in this program, and ARQ 761, a new chemical entity, is a modified version of ARQ 501 with improved pre-clinical characteristics.

Pre-clinical Stage Programs

ARQ-350RP: Inhibiting B-RAF

Our ARQ-350 research program is focused on the discovery of product candidates that inhibit mutations of the B-RAF kinase associated with a wide array of cancers, including a significant

percentage of melanomas, papillary thyroid carcinomas and colon cancers. We plan to initiate toxicology testing with a lead candidate from this program by the end of 2007, and pending the successful outcome of this testing, to file an Investigational New Drug application (IND) and initiate a Phase 1 clinical trial for this compound in 2008.

Discovery Programs

Additional pre-clinical programs are directed toward molecular targets that we believe play critical roles in the development of human cancers, including Eg5 (kinesin motor protein), Hsp90 (heat shock protein) and HDAC (histone deacetylase). The targets, mechanisms of action and chemistry related to compounds generated from our discovery programs differ, offering the potential for multiple therapeutic opportunities. We are applying a broad spectrum of chemistry capabilities to facilitate the progression of our programs from initial discovery through pre-clinical development and to enable our products to induce cell death across a broad spectrum of human cancers.

CLINICAL TRIALS

ARQ 197

Phase 2 Clinical Program

We plan to initiate a Phase 2 clinical program with ARQ 197 in mid-2007. We expect this program to encompass both standard proof-of-concept studies and accelerated approval (fast-to-market), Phase 2/3 trial designs. We have preliminarily defined the indications for our proof-of-concept Phase 2 studies as prostate, pancreatic and non-small cell lung cancer (NSCLC). The indications with potential for accelerated approval include MiT tumors (pediatric soft tissue sarcomas), gastric cancer and advanced breast cancer. In addition to the specific indications for these trials, we plan to explore further certain anti-metastatic effects of ARQ 197 that were observed in the Phase 1 trial.

Pending discussions with the FDA, we expect to finalize plans for these trials and to initiate the first of these trials in mid-2007. We also plan to complete a bioequivalence study, in healthy volunteers, related to a revised formulation of ARQ 197 by the end of August 2007, the results of which will be required prior to initiating certain of the fast-to-market studies.

Therefore, we currently expect to conduct our Phase 2 ARQ 197 studies as follows: the pancreatic cancer trial and the MiT tumor study are planned to be initiated in mid-2007; the gastric cancer and advanced breast cancer studies are planned to be initiated in the fourth quarter of 2007; and the prostate and NSCLC studies are planned to be initiated in the first quarter of 2008. If dose modifications are required as a result of the bioequivalence study, then the start of certain of these trials may be delayed.

Phase 1 Results

At the 2007 Annual Meeting of the American Society of Clinical Oncology on June 2, 2007, we announced data from a Phase 1 trial demonstrating that treatment with ARQ 197 was well tolerated over extended dosing periods, with more than 60 percent of patients experiencing partial responses, minor responses or stable disease. As per RECIST criteria (Response Evaluation Criteria in Solid Tumors), a partial response is at least a 30 percent decrease in tumor size, progressive disease is at least a 20 percent increase in tumor size, and stable disease is neither shrinkage sufficient to qualify for partial response nor increase sufficient to qualify for progressive disease. Minor response is not defined by the RECIST criteria, but we define evidence of tumor shrinkage of less than 30 percent as a minor response. The primary objective of the Phase 1 trial was to determine a recommended Phase 2 dose for ARQ 197. Findings from this study resulted in a recommended Phase 2 dose of 240 milligrams (mg) daily. Secondary objectives included determining the pharmacokinetic and pharmacodynamic profiles and assessing the anti-tumor activity of this compound.

Safety

The trial was a standard Phase 1 sequential dose-escalation design, with 10 dose levels evaluated, from 10 mg twice daily through 180 mg twice daily. The 57 patients enrolled had a broad range of solid tumors, and all had confirmed, active metastatic disease. ARQ 197 was dose-escalated orally in two regimens, the first one administered in cycles consisting of two weeks on treatment followed by one week off drug, and the second consisting of three weeks on treatment with no time off drug.

Treatment with ARQ 197 was well tolerated. Most adverse events were mild and transient, and no grade three or four drug-related adverse events (the most severe types of adverse events) were reported. No dose-limiting toxicity was observed on either dosing regimen. Substantial plasma exposure, at levels several times the predicted efficacious concentration, was maintained with oral dosing. Patient compliance with dosing was high (greater than 98 percent), and there were no treatment interruptions due to adverse events.

Anti-Tumor Activity

Thirty-nine patients were recruited into the intermittent, or two weeks out of three, dosing cohort. Tumors were evaluated using standard RECIST criteria. Of the 35 evaluable patients in this cohort, there were three patients with partial responses and 18 with stable disease, with 11 of these 18 showing some evidence of tumor shrinkage and 10 with stable disease lasting six months or more. The partial responses were observed in patients with prostate, neuroendocrine and testicular tumors. Stable disease lasting more than four months was observed in a range of additional tumor types, including pancreatic, renal cell, non-small cell lung and papillary thyroid.

Eighteen patients were recruited into the continuous, or three weeks out of three, dosing cohort. Of the 10 patients in this cohort who had been on study long enough to reach the first tumor evaluation, which took place six weeks following initiation of treatment, seven were evaluated as having stable disease. The remaining patients have not reached the first tumor evaluation but remain on study.

Preliminary data analysis of new lesions among the intermittent dosing cohort showed that only four of these 35 evaluable patients developed new lesions while on ARQ 197, and three of these were treated at low doses. This data shows that all new lesions developed within the first six weeks on therapy, and no new lesions developed after six weeks of therapy. A detailed review of clinical data and disease progression among both cohorts is ongoing to better understand the potential of this compound to affect both metastatic spread and primary disease.

ARQ 501 and ARQ 171

We initiated a Phase 2 proof-of-principle program with ARQ 501 consisting of three separate clinical trials during 2006. These consist of monotherapy trials in leiomyosarcoma and in head and neck cancer, and a combination therapy trial with gemcitabine in pancreatic cancer. A Phase 1 trial was initiated in late 2006 with ARQ 171, a second-generation E2F-1 compound.

We have completed patient recruitment in all three Phase 2 trials with ARQ 501. The Phase 2 dose employed in the leiomyosarcoma and head and neck cancer trials is 450 mg per meter squared (mg/m^2), and the Phase 2 ARQ 501 dose in the pancreatic cancer trial is 400 mg/m^2.

ARQ 171 is currently in a Phase I dose escalation study. To date, single patient cohorts have been dosed between 24 and 192 mg/m^2. Dosing at 384 mg/m^2 is ongoing. Based on our current progress in that trial, and pending the outcome of successive future dosing and identification of dose-limiting toxicity levels, we expect to reach a recommended Phase 2 dose for ARQ 171 toward the end of 2007.

As defined in our Roche collaboration agreement, Roche has an option to license worldwide rights for the development and commercialization of any products resulting from the E2F-1 program. Roche must decide whether to exercise its option within a specified period following delivery of a clinical data package from the initial ARQ 501 Phase 1 trials, the ARQ 501 Phase 2 trials, and the Phase 1 trial with ARQ 171. We plan to submit the data package to Roche shortly after we complete the Phase

1 trial with ARQ 171. Roche will then initiate a defined scientific review period, after which they will make their decision whether to license the program.

Interim Phase 2 Results With ARQ 501

The primary endpoint for each of the ongoing Phase 2 trials with ARQ 501 is an objective response rate of 15 percent. Objective response rate is defined as the sum of complete responses and partial responses, and in the case of the leiomyosarcoma study, stable disease lasting more than 4 months was considered a partial response. Interim data is available from these trials. We expect to announce further data from these trials in the third quarter of 2007.

Interim data from the pancreatic cancer study show a 14.6 percent objective response rate among patients treated with ARQ 501 and with gemcitabine combination therapy. This percentage reflects 11 partial responses among 75 evaluable patients. One additional partial response from the remaining 17 patients awaiting evaluation is needed to achieve the protocol-defined endpoint of 15 percent, and we believe this endpoint is likely to be achieved based on the number of minor responses pending additional evaluation for partial response.

Interim data from the leiomyosarcoma study show a 17.5 percent objective response rate among patients to monotherapy treatment with ARQ 501. This reflects one patient with a partial response and 6 with stable disease. Consequently, the endpoint for this trial has been achieved upon this interim data analysis.

Interim data from the head and neck cancer study show a 2 percent objective response rate among patients to monotherapy treatment with ARQ 501. This reflects one patient with a partial response. Based on these results to date, we do not believe the endpoint for this trial will be achieved.

Regulatory and Clinical Plans For ARQ 501

Our Phase 2 program for ARQ 501 was designed to provide "proof-of-principle" regarding the risk-benefit profile of the compound in combination and monotherapy settings. Proof of principle data is intended to provide sufficient evidence to justify our decision to move a program into pivotal registration studies. Such registration studies, if positive, could subsequently form the basis of a New Drug Application to the FDA and equivalent global health authorities.

Based on the data available to date, we have concluded that we have seen positive proof of principle in both monotherapy in leiomyosarcoma and combination therapy in pancreatic cancer in combination with gemcitabine. We therefore are currently of the opinion that one or more compounds from the E2F-1 platform (currently comprising ARQ 501, ARQ 171 and ARQ 761, the newly modified version of ARQ 501) should be eventually progressed into registration studies, the timing of which will depend on the stage of development of the molecule.

A choice of which compound(s) to progress into such registration studies awaits final data and analysis from the ARQ 501 Phase 2 studies, completion of the ARQ 171 Phase 1 dose escalation study and further pre-clinical and required clinical work on ARQ 761, the modified version of ARQ 501. This choice will be made concurrently with the decision by Roche as to whether it will exercise its license rights to the E2F-1 program, currently anticipated in early 2008. If Roche exercises its licensing right, it will make the decisions on which compound(s) to advance, and on the nature and stage of subsequent clinical studies. If Roche declines the option to license the E2F-1 program, we intend to initiate a registration strategy for one or more compounds shortly after Roche's decision.

CORPORATE PARTNERSHIPS

Hoffmann-La Roche Alliance

In April 2004, we entered into an alliance with Roche to discover and develop drug candidates targeting the E2F biological pathway, including ARQ 501, which is currently in Phase 2 clinical testing, and ARQ 171, which is currently in Phase 1 clinical testing. Under the terms of the agreement, Roche has an option to license drugs resulting from our E2F program in the field of cancer therapy.

Roche provided immediate research funding of $15 million and continues to provide financial support for ongoing research and development. To date, we have received approximately $29.3 million in research and development support from Roche under this agreement.

Roche has an option to license worldwide rights for the development and commercialization of products resulting from the E2F-1 program based on a clinical data package from one of the ongoing Phase 2 ARQ 501 monotherapy trials, the Phase 2 ARQ 501-gemcitabine combination therapy trial and the Phase 1 trial with ARQ 171. In order to license these rights, Roche must pay an option fee. Based on our current progress in the ARQ 171 trial and pending the outcome of successive future dosing and achievement of dose-limiting toxicity, we expect to reach a recommended Phase 2 dose for ARQ 171 toward the end of 2007 and to submit the data package to Roche shortly thereafter. Roche will then initiate a defined scientific review period, after which they will make their decision, which we expect would be in early 2008.

Assuming Roche elects to license rights and the successful development and commercialization of a compound under the program, we could receive up to $276 million in milestone payments, plus royalties based on net sales.

Kyowa Hakko Kogyo Alliance

In April 2007, we entered into an exclusive license agreement with Kyowa to develop and commercialize ARQ 197, a small molecule, selective inhibitor of the c-Met receptor tyrosine kinase, in Japan and parts of Asia. The agreement includes $123 million in upfront and potential development milestone payments from Kyowa to us, including $30 million cash in upfront licensing payments. In addition, the agreement includes potential sales milestone payments. Upon commercialization, we will be entitled to receive double-digit royalties from Kyowa on net

sales of ARQ 197. Kyowa will be responsible for clinical development costs and commercialization of the compound in certain Asian countries, consisting of Japan, China (including Hong Kong), South Korea and Taiwan.

OUR BUSINESS STRATEGY

Our strategy is to build a fully integrated, commercial-stage biotechnology company that invents, develops, manufactures, markets and sells safe, innovative, and effective small molecule drugs, currently in the field of oncology, to create shareholder value. Specifically, we intend to accomplish this through the following activities:

- Using our proprietary drug discovery technology to invent novel drugs that have applicability in areas where no therapies exist or where we believe we can develop products with advantages over current therapies;
- Efficiently selecting and developing our most promising product candidates to minimize risk and maximize market opportunities;
- Pursuing partnerships or alliances with pharmaceutical and biotechnology companies where appropriate and consistent with our strategy, in order to offset spending, balance risk, and gain expertise;
- Maintaining and expanding our portfolio of patents, know-how and trade secrets; and
- Commercializing or co-commercializing our drugs in the United States and receiving royalties on sales in the rest of the world.

OUR CORPORATE INFORMATION

We are a Delaware corporation, incorporated in 1993. Our executive offices are located at 19 Presidential Way, Woburn, Massachusetts 01801, and our telephone number is (781) 994-0300. Our web site address is http://www.arqule.com. The information contained in, or that can be accessed through, our website is not part of this prospectus supplement or the accompanying prospectus and should not be considered part of this prospectus supplement or the accompanying prospectus.

The offering

Common stock offered by us	7,000,000 shares
Common stock to be outstanding after this offering	42,831,456 shares
Use of proceeds	We intend to use the net proceeds of this offering to fund our research and development efforts, including clinical trials, and for general corporate purposes, including working capital. See "Use of Proceeds."
Nasdaq Global Market Symbol	ARQL

The number of shares of our common stock to be outstanding after this offering is based on the number of shares of common stock outstanding as of March 31, 2007 and excludes:

- 4,610,118 shares issuable upon exercise of options outstanding as of March 31, 2007 at a weighted average exercise price of $6.62 per share, of which 2,375,202 were exercisable at March 31, 2007; and

- 2,488,106 shares of common stock reserved for future issuance under our equity incentive plan, director's plan and employee stock purchase plan.

Unless otherwise indicated, all information in this prospectus supplement assumes:

- no exercise of the underwriters' over-allotment option to purchase 1,050,000 additional shares of our common stock; and
- no exercise of outstanding options or warrants to purchase shares of common stock.

Summary financial data

The tables below present summary statement of operations and balance sheet data. The summary financial data for the years ended December 31, 2004, 2005 and 2006 are derived from our audited financial statements for those periods, which are incorporated by reference into this prospectus supplement. We derived the summary balance sheet data as of March 31, 2007 and the summary statement of operations data for the three months ended March 31, 2007 and 2006 from our unaudited financial statements, which are incorporated by reference into this prospectus supplement. All current year and comparative prior period amounts have been restated to reflect our discontinued chemistry services operations. See Note 2 to our Consolidated Financial Statements contained in our 2006 Annual Report on Form 10-K for further information concerning discontinued operations. The unaudited financial statement data includes, in our opinion, all normal recurring adjustments that are necessary for a fair statement of our financial position and results of operations for these periods. Operating results for the three months ended March 31, 2007 are not necessarily indicative of the results that may be expected for the fiscal year ending December 31, 2007.

The as adjusted balance sheet data gives effect to the issuance and sale by us of 7,000,000 shares of our common stock in this offering at a public offering price of $7.75 per share, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

This information is only a summary and should be read in conjunction with our historical financial statements and related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained in our periodic reports on file with the Securities and Exchange Commission or SEC, and incorporated by reference in this prospectus supplement and the accompanying prospectus.

	Year ended December 31,			Three months ended March 31,	
Statement of operations data:	**2004**	**2005**	**2006**	**2006**	**2007**
				(unaudited)	
	(in thousands, except per share data)				
Research and development revenue[a]	$ 5,012	$ 6,628	$ 6,626	$ 1,652	$ 1,652
Costs and expenses:					
Research and development	20,181	24,646	47,428	10,511	13,704
General and administrative	8,982	8,688	11,560	2,200	3,510
Restructuring credits[b]	(983)				
Total costs and expenses	28,180	33,334	58,988	12,711	17,214
Loss from continuing operations	(23,168)	(26,706)	(52,362)	(11,059)	(15,562)
Investment income, net	1,086	3,331	5,139	1,340	1,058
Loss on investment[c]		(250)			
Net loss from continuing operations	(22,082)	(23,625)	(47,223)	(9,719)	(14,504)

	Year ended December 31,			Three months ended March 31,	
Income from discontinued operations[(d)]	17,161	16,105	15,783	14,005	
Net loss[(e)]	$ (4,921)	$ (7,520)	$ (31,440)	$ (4,286)	$ (14,504)
Basic and diluted income (loss) per share:					
Net loss from continuing operations	$ (0.77)	$ (0.68)	$ (1.33)	$ (0.28)	$ (0.40)
Income from discontinued operations[(d)]	0.60	0.46	0.45	0.40	
	$ (0.17)	$ (0.22)	$ (0.88)	$ (0.12)	$ (0.40)
Weighted average common shares outstanding basic and diluted	28,819	34,619	35,539	35,330	35,823

*

As a result of the adoption of Statement of Financial Accounting Standards (SFAS) No. 123(R), "Share Based Payment", as of January 1, 2006, all share-based payments have been recognized in the statements of operations based on their fair values. The company adopted the modified prospective transition method permitted under SFAS No. 123(R) and, consequently, has not adjusted results from prior years. Stock-based compensation expense related to SFAS 123(R) was approximately $3.2 million for the year ended December 31, 2006.

	March 31, 2007	
Balance sheet data[(f)]:	**Actual**	**As adjusted**
	(unaudited)	
	(in thousands)	
Cash, cash equivalents and marketable securities	$ 83,727	$ 134,205
Working capital	67,465	117,943
Total assets	93,206	143,684
Long-term debt		
Accumulated deficit	(242,721)	(242,721)
Total stockholders' equity	66,946	117,424

(a)

In April 2004, we entered into an alliance with Roche to discover and develop drug candidates targeting the E2F biological pathway. Roche provided immediate research funding of $15 million, and is obligated to provide financial support for ongoing research and development. The cost associated with satisfying the Roche contract is included in research and development expense.

(b)

In the first quarter of 2004, we implemented a restructuring which necessitated a charge of approximately $0.5 million for termination benefits. In the third quarter of 2004, we subleased our abandoned California facility. Since the terms of the sublease were more favorable than we had previously estimated, we recorded a restructuring credit of approximately $1.5 million to reduce our restructuring accrual.

(c)

In the fourth quarter of 2003, the carrying value of an investment in a privately-held proteomic company was written down by $4.75 million to reflect the estimated fair value of the investment. Based on events affecting the financial condition of the company in the second quarter of 2005, we recorded a non-cash loss of $0.25 million to write-off the remaining carrying value of the investment.

(d)

In the fourth quarter of 2006, we completed our exit from our chemistry services operations and disposed of the related assets. Pursuant to Statement of Financial Accounting Standards No. 144, Accounting for the Impairment or Disposal of Long-Lived Assets, we have reported the results of the chemistry services operations as discontinued operations in 2006 since the related cash flows of our chemistry services operations were eliminated from our ongoing operations and we do not have any significant continuing involvement in the operations of the component or the assets that were disposed.

(e)

Net loss for 2004 includes a $0.6 million fourth quarter adjustment for a loss on the sublease of our Medford facility. See Note 15, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements appearing in Item 8 of our 2006 Annual Report on Form 10-K.

(f)

Does not include $27 million in upfront licensing payments received from Kyowa in the second quarter of 2007.

Risk factors

Investing in our common stock involves a high degree of risk. You should carefully consider the risks described in this prospectus supplement and the accompanying prospectus and the other information in this prospectus supplement and the accompanying prospectus. If any of these risks occur, our business could be materially harmed, and our financial condition and results of operations could be materially and adversely affected. As a result, the price of our common stock could decline, and you could lose all or part of your investment.

RISKS RELATING TO OUR INDUSTRY AND BUSINESS STRATEGY

Development of our products is at an early stage and is based on scientific platforms that are unproven. We may not successfully develop a drug candidate that becomes a commercially viable drug.

We have no commercial products. The discovery and development of drugs is inherently risky and involves a high rate of failure. Discovering and developing commercial drugs are relatively new to us. Our drug candidates and drug research programs are in early stages and require significant, time-consuming and costly research and development, testing and regulatory approvals.

One of our clinical-stage product candidates, ARQ 197, is based on our c-Met/Cancer Survival platform. Two of our other product candidates in clinical trials, ARQ 501 and ARQ 171, are based on our proprietary ACT platform. Although drugs have been approved that inhibit the activity of kinases and other enzymes, to our knowledge no company has received regulatory approval for a drug based on an approach similar to our c-Met/Cancer Survival platform. To our knowledge no company has received regulatory approval for a drug based on an approach similar to our ACT platform. Our approaches may not lead to the development of approvable or marketable drugs.

In addition to our clinical-stage programs, we have a limited number of pre-clinical and research-stage programs in our pipeline. Our viability as a company depends, in part, on our ability to continue to create drug candidates for ourselves and our collaborators. Numerous significant factors will affect the success of our drug research and development efforts, including the biology and chemistry complexity involved, availability of appropriate technologies, the uncertainty of the scientific process and the capabilities and performance of our scientists. Our research and development capabilities may not be adequate to develop additional, viable drug candidates.

We must show the safety and efficacy of our product candidates through expensive, time consuming preclinical and clinical trials, the results of which are uncertain and governed by exacting regulations.

Our product candidates are in clinical or preclinical stages of development and may not prove to be sufficiently safe or effective in more advanced human clinical trials. We will need to conduct extensive further testing of all of our product candidates, expend significant additional resources and possibly partner with another company or companies to realize commercial value from any of our product candidates.

Before obtaining regulatory approvals for the commercial sale of our products, we must demonstrate through preclinical studies (laboratory or animal testing) and clinical trials (human testing) that our proposed products are safe and effective for use in each target indication. This testing is expensive and time-consuming, and failure can occur at any stage. If we terminate a preclinical or clinical program, we will have expended resources in an effort that will not provide a return on our investment and missed the opportunity to have allocated those resources to potentially more productive uses.

Clinical trials must meet FDA and foreign regulatory requirements. We have limited experience in designing, conducting and managing the preclinical studies and clinical trials necessary to obtain regulatory approval for our product candidates in any country. We or our collaborative partners may encounter problems in clinical trials that may cause us or the FDA or foreign regulatory agencies to delay, suspend or terminate our clinical trials at any phase. These problems could include our inability to manufacture or obtain sufficient quantities of materials produced in accordance with current Good Manufacturing Practice, or cGMP, for use in our clinical trials, conduct clinical trials at our preferred sites, enroll a sufficient number of patients for our clinical trials at one or more sites, or begin or successfully complete clinical trials in a timely fashion, if at all. Furthermore, we, the FDA or foreign regulatory agencies may suspend clinical trials of our product candidates at any time if we or they believe the subjects participating in the trials are being exposed to unacceptable health risks as a result of adverse events occurring in our trials or if we or they find deficiencies in the clinical trial process or conduct of the investigation.

Acceptable results from initial preclinical studies and clinical trials of products under development are not necessarily indicative of results that will be obtained from subsequent or more extensive preclinical studies and clinical testing in humans. Clinical trials may not demonstrate sufficient safety and efficacy to obtain the required regulatory approvals or result in marketable products. The failure to adequately demonstrate the safety and efficacy of a product under development will delay and could prevent its regulatory approval.

A number of companies in the pharmaceutical industry, including biotechnology companies, have suffered significant setbacks in advanced clinical trials, even after generating promising results in earlier trials.

Though it is part of our strategy to pursue clinical development to take advantage of available accelerated regulatory approval processes, there is no guarantee that our product candidates will show the evidence predictive of clinical benefit necessary to qualify for such regulatory treatment.

Delays in clinical testing could result in increased costs to us and delay our ability to obtain regulatory approval and commercialize our product candidates.

Clinical trials typically take several years to complete. The duration and cost of clinical trials will vary greatly depending on the nature, complexity, and intended use of the drug being tested. We may not complete clinical testing within the time frame we have planned, or at all. At any time, a clinical trial can be placed on "clinical hold", or temporarily or permanently stopped for a variety of reasons, principally for safety concerns. We may experience numerous unforeseen events during, or as a result of, the clinical trial process that could delay or prevent us from receiving regulatory approval or commercializing our product candidates, including the following:

> our clinical trials may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical and/or pre-clinical testing or to abandon programs;

> trial results may not meet the level of statistical significance required by the FDA or other regulatory agencies;

> enrollment in our clinical trials for our product candidates may be slower than we anticipate, resulting in significant delays;

> we, or regulators, may suspend or terminate our clinical trials if the participating patients are being exposed to unacceptable health risks;

> the effects of our product candidates on patients may not be the desired effects or may include undesirable side effects or other characteristics that may delay or preclude regulatory approval or limit their commercial use, if approved; and

> the FDA or other regulatory agencies may lack experience in evaluating the safety and efficacy of drugs based on our c-Met or ACT platforms, which could lengthen the regulatory review process.

Completion and duration of clinical trials depends on, among other things, our ability to enroll a sufficient number of patients, which is a function of many factors, including:

- the incidence among the general population of diseases which contain therapeutic endpoints chosen for evaluation;
- the eligibility criteria defined in the protocol;
- the size of the patient population required for analysis of the trial's therapeutic endpoints;
- our ability to recruit clinical trial investigators and sites with the appropriate competencies and experience;
- our ability to obtain and maintain patient consents; and
- competition for patients by clinical trial programs for other treatments.

We have limited clinical development and commercialization experience.

We have limited experience conducting clinical trials and have never obtained regulatory approvals for any drug. To date, we have filed 3 IND applications and initiated 5 Phase 1 clinical trials, and 3 Phase 2 clinical trials. We have not conducted a Phase 3, or pivotal, clinical trial, filed an NDA or commercialized a drug. We have no experience as a company in the sale, marketing or distribution of pharmaceutical products and do not currently have a sales and marketing organization. Developing commercialization capabilities will be expensive and time-consuming, could delay any product launch, and we may not be able to develop a successful commercial organization. To the extent we are unable or determine not to acquire these resources internally, we would be forced to rely on third-party clinical investigators, clinical research or marketing organizations. If we were unable to establish adequate capabilities independently or with others, our drug development and commercialization efforts could fail and we may be unable to generate product revenues.

If our drug discovery and development programs do not progress as anticipated, our revenue and stock price could be negatively impacted.

We estimate the timing of a variety of preclinical, clinical, regulatory and other milestones for planning purposes, including when a drug candidate is expected to enter clinical trials, when a clinical trial will be completed or when an application for regulatory approval will be filed. We base our estimates on facts that are currently known to us and on a variety of assumptions, many of which are beyond our control. If we or our collaborators do not achieve milestones when anticipated, we will not receive the corresponding revenue, and our stock price could decline. In addition, our research and clinical testing may be delayed or abandoned if we or our competitors subsequently discover other compounds that we believe show significantly improved safety or efficacy compared to our product candidates, which could limit our ability to generate revenues, cause us to incur additional expense and cause the market price of our common stock to decline significantly.

RISKS RELATED TO OUR FINANCIAL CONDITION

We have incurred significant losses since our inception and anticipate that we will incur significant continued losses for the next several years, and our future profitability is uncertain.

From our inception in 1993 through March 31, 2007, we have incurred cumulative losses of approximately $243 million. These losses have resulted principally from the costs of our research activities, acquisitions, enhancements to our technology and early-stage clinical trials. In the past we derived our revenue primarily from license and technology transfer fees and payments for compound deliveries associated with our discontinued chemistry services operations; research and development funding paid under our agreements with collaboration partners; and to a limited extent, milestone payments.

We expect our expenses to increase significantly as we spend additional amounts to fund research, development, clinical testing and commercialization of our drug candidates. We currently have three product candidates in various stages of clinical development, and we anticipate filing an IND application for an additional product candidate within the next 24 months. As a result, we will need significant capital resources to achieve profitability.

To attain profitability, we will need to develop clinical products successfully and market and sell them effectively, either by ourselves or with collaborators. We have never generated revenue from the commercialization of our product candidates, and there is no guarantee that we will be able to do so. Even if were to generate product revenues and achieve profitability, we may not be able to maintain or increase profitability. Because of the numerous risks and uncertainties associated with developing drugs, we are unable to predict the extent of any future losses or when we will become profitable, if at all. If we fail to become profitable, or if we are unable to fund our continuing losses, we may be unable to continue our business.

We may need substantial additional funding and may be unable to raise capital when needed, or on terms favorable to us, which could force us to delay, reduce or eliminate our drug discovery, product development and commercialization activities.

Developing drugs, conducting clinical trials, and commercializing products is expensive. Our future funding requirements will depend on many factors, including:

> the progress and cost of our ongoing and future collaborative and independent clinical trials and other research and development activities and our ability to share such costs of our clinical development efforts with third parties;

> the costs and timing of obtaining regulatory approvals;

> the costs of filing, prosecuting, maintaining, defending and enforcing any patent applications, claims, patents and other intellectual property rights;

> the cost and timing of securing manufacturing capabilities for our clinical product candidates and commercial products, if any;

> the costs and timing of commercializing our product candidates including establishing or contracting for sales, marketing and distribution capabilities, if any such candidates receive regulatory approval for commercial sale; and

> the costs of any acquisitions of or investments in businesses, products and technologies.

We may seek the capital necessary to fund our operations through public or private equity offerings, debt financings, and collaboration and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, our stockholders' ownership interests will be diluted and the terms of such securities may include liquidation or other preferences that adversely affect our stockholders' rights. Other debt-financing arrangements may require us to pledge certain assets and enter into covenants that would restrict certain business activities or our ability to incur further indebtedness. If we raise additional funds through collaboration and licensing arrangements with third parties, we may have to relinquish rights to certain product candidates that we might otherwise seek to develop or commercialize independently, or grant licenses on terms that are not favorable to us. There can be no assurance that sufficient funds will be available to us when required, on satisfactory terms, or at all. If we are unable to obtain additional funds when needed, we may have to delay, reduce the scope of or eliminate some of our development and commercialization programs, or obtain funds through other arrangements on unattractive terms, which could prevent us from successfully executing our business strategy.

RISKS RELATED TO REGULATORY APPROVAL

Our product candidates are subject to a lengthy and uncertain regulatory process that may not result in the necessary regulatory approvals, which would adversely affect our ability to commercialize products. We have only limited experience in regulatory affairs.

Our product candidates, as well as the activities associated with their research, development and commercialization, are subject to extensive regulation by the FDA and other regulatory agencies in the United States and by comparable authorities in other countries. Failure to obtain regulatory approval for a product candidate would prevent us from commercializing that product candidate. We have not received regulatory approval to market any of our product candidates in any jurisdiction and have only limited experience in preparing and filing the applications necessary to gain regulatory approvals. The process of obtaining regulatory approvals is expensive, often takes many years, if approval is obtained at all, and can vary substantially based upon the type, complexity and novelty of the product candidates involved.

Before a new drug application can be filed with the FDA, the product candidate must undergo extensive clinical trials. Any clinical trial may fail to produce results satisfactory to the FDA, typically for lack of safety or efficacy. For example, the FDA could determine that the design of a clinical trial is inadequate to produce reliable results. The regulatory approval process also requires preclinical testing. Data obtained from preclinical and clinical activities are susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. Delays or rejections may be encountered based upon changes in regulatory policy for product approval during the period of product development and regulatory agency review. Changes in regulatory approval policy, regulations or statutes or the process for regulatory review during the development or approval periods of our product candidates may cause delays in the approval or rejection of an application. We are currently in Phase 2 clinical testing of ARQ 501 and Phase 1 clinical testing of ARQ 197 and ARQ 171. We have never conducted a Phase 3, or pivotal, clinical trial, nor have we filed or prosecuted the applications necessary to gain regulatory approvals.

Even if our drug candidates obtain regulatory approval, we and our collaborators will be subject to ongoing government regulation.

Even if regulatory authorities approve any of our drug candidates, the manufacture, marketing and sale of these drugs will be subject to strict and ongoing regulation. Compliance with such regulations

may consume substantial financial and management resources and expose us and our collaborators to the potential for other adverse circumstances. For example, approval for a drug may be conditioned on costly post-marketing follow-up studies. Based on these studies, if a regulatory authority does not believe that the drug demonstrates a clinical benefit to patients, it could limit the indications for which a drug may be sold or revoke the drug's marketing approval. In addition, identification of certain side effects after a drug is on the market may result in the subsequent withdrawal of approval, reformulation of a drug, additional preclinical and clinical trials and changes in labeling. Any of these events could delay or prevent us from generating revenue from the commercialization of these drugs and cause us to incur significant additional costs.

Even if we or our collaborators bring products to market, we may be unable to effectively price our products or obtain adequate reimbursement for sales of our products, which would have an adverse effect on our revenues.

Third party payors, such as government and private insurance plans, frequently require companies to provide rebates and predetermined discounts from list prices and are increasingly challenging the prices charged for pharmaceuticals and other medical products. Our products may not be considered cost-effective, and reimbursement to the patient may not be available or be sufficient to allow the sale of our products on a competitive basis. We, or our collaborators, may not be able to negotiate favorable reimbursement rates for our products. If we, or our collaborators, fail to obtain an adequate level of reimbursement for our products by third-party payors, sales of the drugs would be adversely affected or there may be no commercially viable market for the products.

We face potential liability related to the privacy of health information we obtain from research institutions.

Most health care providers, including research institutions from which we or our collaborators obtain patient information, are subject to privacy regulations promulgated under the Health Insurance Portability and Accountability Act of 1996, or HIPAA. Although we are not directly regulated by HIPAA, we could face substantial criminal penalties if we knowingly receive individually identifiable health information from a health care provider or research institution that has not satisfied HIPPA's disclosure standards. In addition, certain state privacy laws may apply directly to our operations and/or those of our collaborators and may impose restrictions on our use and dissemination of individuals' health information. Moreover, patients about whom we or our collaborators obtain information, as well as the providers who share this information with us, may have contractual rights that limit our ability to use and disclose the information. Claims that we have violated individuals' privacy rights or breached our contractual obligations, even if we are not found liable, could be expensive and time-consuming to defend and could result in adverse publicity that could harm our business.

RISKS RELATED TO COLLABORATIONS

Part of our business strategy involves collaborative out-licensing of our drug candidates while retaining commercialization or co-promotional rights in parts of the world. We may not be able to find collaborators or successfully form suitable collaborations to further our drug development and commercialization efforts.

We may seek collaborators for our drug development and commercialization efforts. We may enter into these collaborations to obtain external financing for drug development and to obtain access to drug development and commercialization expertise. The availability of partners depends on the willingness of pharmaceutical and biotechnology companies to collaborate in drug discovery activities.

Only a limited number of pharmaceutical and biotechnology companies would fit our requirements. The number could decline further through consolidation, or the number of collaborators with interest in our drugs could decline. If the number of our potential collaborators were to decline, the remaining collaborators may be able to negotiate terms less favorable to us.

We face significant competition in seeking drug development collaborations, both from other biotechnology companies and from the internal capabilities and compound pipelines of the pharmaceutical and biotechnology companies themselves. This competition is particularly intense in the oncology field. Our ability to interest such companies in forming co-development and commercialization arrangements with us will be influenced by, among other things:

> the compatibility of technologies;

> the potential partner's acceptance of our approach to drug discovery;

> the novelty, quality and commercial potential of any drug candidate we may succeed in developing; and

> our ability, and collaborators' perceptions of our ability, to achieve intended results in a timely fashion, with acceptable quality and cost.

Even if we are able to gain the interest of potential drug development partners, the negotiation, documentation and implementation of collaborative arrangements are complex and time-consuming. Collaborations may not be available on commercially acceptable terms and, if formed, may not be commercially successful or, if successful, may not realize sufficient return for us. If we are unable to form collaborations, we may not gain access to the financial resources and industry expertise necessary to develop and commercialize drug products or successfully market any products we develop on our own and, therefore, be unable to generate revenue from our products.

In fiscal year 2006, our collaboration with Roche accounted for all of our research and development revenue (approximately $6.6 million). If Roche were to terminate its collaboration with us, our revenue would significantly decrease.

Our success depends in part on the efforts of our current and possible future collaborators, who will likely have substantial control and discretion over the continued development and commercialization of drug candidates which are the subjects of our collaborations.

If Roche exercises its option to acquire rights to ARQ 501 and ARQ 171 or if we were successful in establishing additional collaborations, our collaborators would have significant discretion in determining the efforts and amount of resources that they dedicate to our collaborations. Our collaborators may determine not to proceed with clinical development or commercialization of a particular drug candidate for a number of reasons that are beyond our control, even under circumstances where we might have continued such a program. In addition, our rights to receive milestone payments and royalties from our collaborators will depend on our collaborators' abilities to establish the safety and efficacy of our drug candidates, obtain regulatory approvals and achieve market acceptance of products developed from our drug candidates. We may also depend on our collaborators to manufacture clinical scale quantities of some of our drug candidates and would depend on them in the future for commercial scale manufacture, distribution and direct sales. Our collaborators may not be successful in manufacturing our drug candidates on a commercial scale or in successfully commercializing them.

We face additional risks in connection with our existing and future collaborations, including the following:

> our collaborators may develop and commercialize, either alone or with others, products that are similar to or competitive with the products that are the subject of the collaboration with us;

> our collaborators may underfund or not commit sufficient resources to the testing, marketing, distribution or other development of our drug candidates;

- our collaborators may not properly maintain or defend our intellectual property rights or they may utilize our proprietary information in such a way as to invite litigation that could jeopardize or potentially invalidate our intellectual property or proprietary information or expose us to potential liability;

- our collaborators may encounter conflicts of interest, changes in business strategy or other business issues which could adversely affect their willingness or ability to fulfill their obligations to us (for example, pharmaceutical and biotechnology companies historically have re-evaluated their priorities following mergers and consolidations, which have been common in recent years in these industries); and

- disputes may arise between us and our collaborators delaying or terminating the research, development or commercialization of our drug candidates, resulting in significant litigation or arbitration that could be time-consuming and expensive, or causing collaborators to act in their own self-interest and not in the interest of our stockholders.

We may not receive any further milestone, royalty or license payments under our current collaboration.

Although we have received license fees, milestone fees and other payments to date under our current drug development collaboration with Roche, we may not receive any royalty payments or additional license and milestone fees under such agreement. Our receipt of any future milestone, royalty or license payments depends on many factors, including whether our collaborator wants or is able to continue to pursue a potential drug candidate, intellectual property issues, unforeseen complications in the development or commercialization process, and the ultimate commercial success of the drug.

RISKS RELATED TO RELATIONSHIPS WITH THIRD PARTY VENDORS

We rely heavily on third parties such as contract research organizations, to conduct clinical trials and perform research and analysis services for us. If third parties upon which we rely do not perform as contractually required or expected, we may not be able to develop further, obtain regulatory approval for or commercialize our product candidates.

We do not have the ability to perform all of the testing or conduct all of the clinical trials that are necessary in connection with the development of our product candidates. We are using third-party clinical research organizations to oversee many of our ongoing clinical trials and expect to use the same or similar organizations for certain of our future clinical trials. We may face delays outside of our control if these parties do not perform their obligations in a timely or competent fashion or if we are forced to change service providers or if the quality or accuracy of the data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements or for other reasons. These risks are heightened if we conduct clinical trials outside of the United States, where it may be more difficult to ensure that studies are conducted in compliance with FDA requirements. Any third party that we hire to conduct clinical trials may also provide services to our

competitors, which could compromise the performance of their obligations to us. If we experience significant delays in the progress of our clinical trials and in our plans to file NDAs, the commercial prospects for product candidates could be harmed and our ability to generate product revenue would be delayed or prevented.

We have limited manufacturing experience. We primarily rely on third parties to provide sufficient quantities of our product candidates to conduct pre-clinical and clinical studies. We have no control over our manufacturers' and suppliers' compliance with manufacturing regulations, and their failure to comply could result in an interruption in the supply of our product candidates.

To date, our product candidates have been manufactured in relatively small quantities for preclinical and clinical trials. We have no experience in manufacturing any of our product candidates on a large scale and have contracted with third party manufacturers to provide material for clinical trials and to assist in the development and optimization of our manufacturing processes and methods. Our ability to conduct clinical trials and commercialize our product candidates will depend on the ability of such third parties to manufacture our products on a large scale at a competitive cost and in accordance with cGMP and other regulatory requirements. Significant scale-up of manufacturing may require additional validation studies, which the FDA must review and approve. If we are not able to obtain contract cGMP manufacturing on commercially reasonable terms, obtain or develop the necessary materials and technologies for manufacturing, or obtain intellectual property rights necessary for manufacturing, we may not be able to conduct or complete clinical trials or commercialize our product candidates. There can be no assurance that we will be able to obtain such requisite terms, materials, technologies and intellectual property necessary to successfully manufacture our

product candidates for clinical trials or commercialization. Our product candidates require precise, high-quality manufacturing. The failure to achieve and maintain these high manufacturing standards, including the incidence of manufacturing errors, could result in patient injury or death, product recalls or withdrawals, delays or failures in product testing or delivery, cost overruns or other problems that could seriously hurt our business.

The facilities used by our contract manufacturers must undergo inspections by the FDA for compliance with cGMP regulations before our product candidates produced there can receive marketing approval. If these facilities do not receive a satisfactory cGMP inspection result in connection with the manufacture of our product candidates, we may need to conduct additional validation studies, or find alternative manufacturing facilities, either of which would result in significant cost to us as well as a delay of up to several years in obtaining approval for any affected product candidate. In addition, after approval of a product candidate for commercial use our contract manufacturers, and any alternative contract manufacturer we may utilize, will be subject to ongoing periodic inspection by the FDA and corresponding state and foreign agencies for compliance with cGMP regulations, similar foreign regulations and other regulatory standards. We do not have control over our contract manufacturers' compliance with these regulations and standards. Any failure by our third-party manufacturers or suppliers to comply with applicable regulations could result in sanctions being imposed on them (including fines, injunctions and civil penalties), failure of regulatory authorities to grant marketing approval of our product candidates, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or products, operating restrictions and criminal prosecution.

Materials necessary to manufacture our product candidates currently under development may not be available on commercially reasonable terms, or at all, which may delay our development and commercialization of these drugs.

Some of the materials necessary for the manufacture of our product candidates currently under development may, from time to time, be available either in limited quantities, or from a limited number of manufacturers, or both. We and/or our collaborators need to obtain these materials for our clinical trials and, potentially, for commercial distribution when and if we obtain marketing approval for these compounds. Suppliers may not sell us these materials at the time we need them or on commercially reasonable terms. If we are unable to obtain the materials needed for the conduct of our clinical trials, product testing and potential regulatory approval could be delayed, adversely impacting our ability to develop the product candidates. If it becomes necessary to change suppliers for any of these materials or if any of our suppliers experience a shutdown or disruption in the facilities used to produce these materials, due to technical, regulatory or other problems, it could significantly hinder or prevent manufacture of our drug candidates and any resulting products.

RISKS RELATING TO COMPETITION

The drug research and development industry is highly competitive, and we compete with some companies that offer a broader range of capabilities and have better access to resources than we do.

The pharmaceutical and biotechnology industries are characterized by rapid and continuous technological innovation. We compete with companies worldwide that are engaged in the research and discovery, licensing, development and commercialization of drug candidates, including, in the area of small molecule anti-cancer therapeutics, Ariad Pharmaceuticals, Inc.; Array BioPharma Inc.; Cell Therapeutics, Inc.; Curis, Inc.; Exelixis, Inc.; Onyx Pharmaceuticals, Inc.; OSI Pharmaceuticals, Inc.; Oxigene, Inc.; Pharmacopeia; SGX Pharmaceuticals; Telik, Inc.; Kosan Biosciences, Inc.; and Vion Pharmaceuticals, Inc. With respect to ARQ 197, we are aware of a number of companies that are pursuing approaches to c-Met inhibition, including Exelixis, Amgen Inc., Pfizer Inc. and Methylgene Inc.

Even if we are successful in bringing products to market, we face substantial competitive challenges in effectively marketing and distributing our products. Companies and research institutions, including large pharmaceutical companies with much greater financial resources, and more experience in developing products, conducting clinical trials, obtaining FDA and foreign regulatory approvals and bringing new drugs to market are developing products within the field of oncology. Some of these entities already have competitive products on the market or product candidates in clinical trials or in more advanced preclinical studies than we do. By virtue of having or introducing competitive products on the market before us, these entities may gain a competitive advantage. In addition, there may be product candidates of which we are not aware at an earlier stage of development that may compete with our product candidates. Some of our competitors have entered into collaborations with leading companies within our target markets.

We are in a rapidly evolving field of research. Consequently, our technology may be rendered non-competitive or obsolete by approaches and methodologies discovered by others, both before and after we have gone to market with our products. We also face competition from existing therapies that are currently accepted in the marketplace, and the impact of adverse events in our field that may affect regulatory approval or public perception.

We anticipate that we will face increased competition in the future as new companies enter the market and advanced technologies become available. If we are unable to successfully compete in our chosen field, we will not become profitable.

We may not be able to recruit and retain the scientists and management we need to compete.

Our success depends on our ability to attract, retain and motivate highly skilled scientific personnel and management, and our ability to develop and maintain important relationships with leading academic institutions, clinicians and scientists. We are highly dependent on our senior management and scientific staff, and the loss of the services of one or more of our other key employees could delay or have an impact on the successful completion of our clinical trials or the commercialization of our product candidates.

We compete intensely with pharmaceutical and biotechnology companies, including our collaborators, medicinal chemistry outsourcing companies, contract research companies, and academic and research institutions to recruit scientists and management. The shortage of personnel with experience in drug development could lead to increased recruiting, relocation and compensation costs, which may exceed our expectations and resources. If we cannot hire additional qualified personnel, the workload may increase for both existing and new personnel. If we are unsuccessful in our recruitment efforts, we may be unable to execute our strategy.

RISKS RELATED TO INTELLECTUAL PROPERTY

Our patents and other proprietary rights may fail to protect our business. If we are unable to adequately protect our intellectual property, third parties may be able to use our technology, which could adversely affect our ability to compete in the market.

To be successful and compete, we must obtain and protect patents on our products and technology and protect our trade secrets. Where appropriate, we seek patent protection for certain aspects of the technology we are developing, but patent protection may not be available for some of our product candidates, or their use, synthesis, formulations and technologies. The patent position of biotechnology firms is highly uncertain, involves complex legal and factual questions, and has recently been the subject of much litigation. No consistent policy has emerged from the U.S. Patent and Trademark Office or the courts regarding the breadth of claims allowed or the degree of protection afforded under many biotechnology patents. In addition, there is a substantial backlog of biotechnology patent applications at the U.S. Patent and Trademark Office, and the approval or rejection of patent applications may take several years.

We do not know whether our patent applications will result in issued patents. In addition, the receipt of a patent might not provide much practical protection. If we receive a patent with a narrow scope, then it will be easier for competitors to design products that do not infringe our patent. We cannot be certain that we will receive any additional patents, that the claims of our patents will offer significant protection for our technology, or that our patents will not be challenged, narrowed, invalidated or circumvented.

Competitors may interfere with our patent protection in a variety of ways. Competitors may claim that they invented the claimed invention prior to us. Competitors may also claim that we are infringing on their patents and that, therefore, we cannot practice our technology as claimed under our patents. Competitors may also contest our patents by showing the patent examiner that the invention was not original, was not novel or was obvious. In litigation, a competitor could claim that our issued patents are not valid for a number of reasons. If a court agrees, our patents could be narrowed, invalidated or rendered unenforceable, or we may be forced to stop using the technology covered by these patents or to license the technology from third parties. As a company, we have no meaningful experience with competitors interfering with our patents or patent applications and therefore may not have the experience we would need to aggressively protect our patents should such action become necessary.

The laws of some foreign countries do not protect intellectual property rights to the same extent as the laws of the United States, and many companies have encountered significant problems in protecting and defending such rights in foreign jurisdictions. Many countries, including certain countries in Europe, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of the patent. Compulsory licensing of life-saving drugs is also becoming increasingly popular in developing countries either through direct legislation or international initiatives. Such compulsory licenses could be extended to include some of our product candidates, which could limit our potential revenue opportunities. Moreover, the legal systems of certain countries, particularly certain developing countries, do not favor the aggressive enforcement of patent and other intellectual property protection, which makes it difficult to stop infringement.

Drug candidates we develop that are approved for commercial marketing by the FDA would be subject to the provisions of the Drug Price Competition and Patent Term Restoration Act of 1984, known as the "Hatch-Waxman Act." The Hatch-Waxman Act provides companies with marketing exclusivity for varying time periods during which generic versions of a drug may not be marketed and allows companies to apply to extend patent protection for up to five additional years. It also provides a means for approving generic versions of a drug once the marketing exclusivity period has ended and all relevant patents have expired. The period of exclusive marketing, however, may be shortened if a patent is successfully challenged and defeated, which could reduce the amount of revenue we receive for such product.

Agreements we have with our employees, consultants and collaborators may not afford adequate protection for our trade secrets, confidential information and other proprietary information.

In addition to patent protection, we also rely on copyright and trademark protection, trade secrets, and know-how. It is unclear whether our trade secrets and know-how will prove to be adequately protected. To protect our trade secrets and know-how, we require our employees, consultants and advisors to execute agreements regarding the confidentiality and ownership of such proprietary information. We cannot guarantee, however, that these agreements will provide us with adequate protection against improper use or disclosure of confidential information and there may not be adequate remedies in the event of unauthorized use or disclosure. Our employees, consultants or advisors may unintentionally or willfully disclose our information to competitors. In addition, in some situations, these agreements may conflict with, or be subject to, the rights of third parties with whom our employees, consultants or advisors had or have previous employment or consulting relationships. Like patent litigation, enforcing a claim that a third party illegally obtained and is using our trade secrets is expensive and time-consuming, and the outcome is unpredictable. In addition, courts outside the United States are sometimes less willing than our federal and state courts to protect trade secrets. Furthermore, others may independently develop substantially equivalent knowledge, methods and know-how. Our failure or inability to protect our proprietary information and techniques may inhibit or limit our ability to compete effectively, or exclude certain competitors from the market.

Our success will depend partly on our ability to operate without infringing on or misappropriating the proprietary rights of others.

There are many patents in our field of technology and we cannot guarantee that we do not infringe on those patents or that we will not infringe on patents granted in the future. If a patent holder believes a product of ours infringes on its patent, the patent holder may sue us even if we have received patent protection for our technology.

We have been contacted by third parties who purport to be joint owners of patents and patent applications relating to a combination therapy of a tyrosine kinase inhibitor and a DNA-damaging agent (e.g., a chemotherapy drug). These parties offered to license us these patent rights in connection with ARQ-197, a molecule that inhibits c-Met, a type of tyrosine kinase. We believe that the patent could potentially apply to any company that develops a tyrosine kinase inhibitor that is used in combination with a chemotherapy drug. If the patent is not invalidated, and we successfully develop ARQ-197 as a combination therapy in addition to a monotherapy, we may need to acquire a license if it potentially infringes on a valid claim of an issued patent. We may not be able to acquire a license on commercially reasonable terms.

If we do not prevail in litigation or if other parties have filed or in the future should file, patent applications covering products and technologies that we have developed or intend to develop, we may have to obtain licenses from third parties, which may not be available on commercially reasonable terms, or at all, and may require us to pay substantial royalties, grant a cross-license to some of our patents to another patent holder or change the formulation of a product candidate so that we do not infringe third-party patents, which reformulation may be impossible to achieve or which may require substantial time and expense. If we are unable to cost-effectively redesign our products so they do not infringe a patent, we may be unable to sell some of our products. Any of these occurrences will result in lost revenues and profits for us.

The drug research and development industry has a history of patent and other intellectual property litigation, and we may be involved in costly intellectual property lawsuits.

The drug research and development industry has a history of patent and other intellectual property litigation, and we believe these lawsuits are likely to continue. Legal proceedings relating to intellectual property would be expensive, take significant time and divert management's attention from other business concerns. We face potential patent infringement suits by companies that control patents for drugs or potential drugs similar to our product candidates or other suits alleging infringement of their intellectual property rights. There could be issued patents of which we are not aware that our products infringe or patents that we believe we do not infringe that we are ultimately found to infringe. The publication of discoveries in the scientific or patent literature frequently occurs substantially later than the date on which the underlying discoveries were made and patent applications were filed. Because patent applications can take many years to issue, there may be currently pending applications of which we are unaware that may later result in issued patents that we infringe with our drug candidates or resulting products. In addition, technology created under our research and development collaborations may infringe the intellectual property rights of third parties, in which case we may not receive milestone or royalty revenue from those collaborations.

If we do not prevail in an infringement lawsuit brought against us, we might have to pay substantial damages, including triple damages, and we could be required to stop the infringing activity or obtain a license to use the patented technology or redesign our products so as not to infringe the patent. We may not be able to enter into licensing arrangements at a reasonable cost or effectively redesign our products. Any inability to secure licenses or alternative technology could delay the introduction of our products or prevent us from manufacturing or selling products.

RISKS RELATED TO EMPLOYEES AND FACILITIES

Our operations could be interrupted by damage to our laboratory facilities.

Our operations are dependent upon the continued use of our specialized laboratories and equipment in Woburn, Massachusetts. Catastrophic events, including fires or explosions, could damage our

laboratories, equipment, scientific data, work in progress or inventories of chemical compounds and biological materials and may materially interrupt our business. We employ safety precautions in our laboratory activities in order to reduce the likelihood of the occurrence of these catastrophic events; however, we cannot eliminate the chance that such an event will occur. Rebuilding our facilities could be time consuming and result in substantial delays in fulfilling our agreements with our collaborators.

Security breaches may disrupt our operations and harm our operating results.

Our network security and data recovery measures may not be adequate to protect against computer viruses, break-ins, and similar disruptions from unauthorized tampering with our computer systems. The misappropriation, theft, sabotage or any other type of security breach with respect to any of our proprietary and confidential information that is electronically stored, including research or clinical data, could have a material adverse impact on our business, operating results and financial condition. Additionally, any break-in or trespass of our facilities that results in the misappropriation, theft, sabotage or any other type of security breach with respect to our proprietary and confidential information, including research or clinical data, or that results in damage to our research and development equipment and assets could have a material adverse impact on our business, operating results, and financial condition.

RISKS RELATED TO PRODUCT LIABILITY

If our use of chemical and biological materials and hazardous materials violates applicable laws or causes personal injury, we may be liable for damages.

Our drug discovery activities, including the analysis and synthesis of chemical compounds, involve the controlled use of chemicals, including flammable, combustible, toxic and radioactive materials that are potentially hazardous if misused. Federal, state and local laws and regulations govern our use, storage, handling and disposal of these materials. These laws and regulations include the Resource Conservation and Recovery Act, the Occupational Safety and Health Act and local fire and building codes, and regulations promulgated by the Department of Transportation, the Drug Enforcement Agency, the Department of Energy, the Department of Health and Human Services, and the laws of Massachusetts, where we conduct our operations. We may incur significant costs to comply with these laws and regulations in the future and current or future environmental laws and regulations may impair our research, development and production efforts. Notwithstanding our extensive safety procedures for handling and disposing of such materials, the risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of an accident, our business could be disrupted and we could be liable for damages and our liability may exceed our insurance coverage and our total assets, and have a negative impact on our financial condition and results of operations.

We may be exposed to potential liability related to the development, testing or manufacturing of compounds we develop.

We are developing, clinically testing and manufacturing therapeutic products for use in humans. In connection with these activities, we could be liable if persons are injured or die while using these drugs. We may have to pay substantial damages and/or incur legal costs to defend claims resulting from injury or death, and we may not receive expected royalty or milestone payments if commercialization of a drug is limited or ended as a result of such claims. We have product liability and clinical trial insurance that contains customary exclusions and provides coverage per occurrence at levels, in the aggregate, which we believe are customary and commercially reasonable in our industry given our current stage of drug development. Our product liability insurance does not cover every type of product liability claim that we may face or loss we may incur and may not adequately compensate us for the entire amount of covered claims or losses or for the harm to our business reputation. Also,

we may be unable to maintain our current insurance policies or obtain and maintain necessary additional coverage at acceptable costs, or at all.

RISKS RELATED TO OUR COMMON STOCK AND THE OFFERING

Because our stock price may be extremely volatile, our stock price could experience substantial decline.

The trading price of our common stock has been highly volatile. We believe the trading price of our common stock will remain highly volatile and may fluctuate substantially due to factors such as:

- adverse results or delays in clinical trials;
- announcement of FDA approval or non-approval, or delays in the FDA review process, of our or our collaborators' product candidates or those of our competitors or actions taken by regulatory agencies with respect to our, our collaborators' or our competitors' clinical trials;
- announcement of new products by us or our competitors;
- quarterly variations in our or our competitors' results of operations, including as a result of recognition of upfront licensing or other fees, the timing and amount of expenses incurred for clinical development, regulatory approval and commercialization of our product candidates;
- litigation, including intellectual property infringement lawsuits, involving us;
- financing transactions;
- developments in the biotechnology and pharmaceutical industries;
- departures of key personnel or board members;
- developments concerning current or future collaborations;
- FDA or international regulatory actions affecting our industry generally; and
- third-party reimbursement policies.

This volatility coupled with market declines in our industry over the past several years have affected the market prices of securities issued by many companies, often for reasons unrelated to their operating performance, and may adversely affect the price of our common stock. In the past, securities class action litigation has often been instituted following periods of volatility in the market price of a company's securities. A securities class action suit against us could result in potential liabilities, substantial costs and the diversion of management's attention and resources, regardless of the outcome of the action.

Some of our existing stockholders can exert control over us, and their interests could conflict with the best interests of our other stockholders.

Due to their combined stock holdings, our officers, directors and principal stockholders (stockholders holding more than 5% of our common stock), acting together, may be able to exert significant influence over all matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. In addition, this concentration of ownership may delay or prevent a change in

control of our company, even when a change may be in the best interests of our stockholders. Furthermore, the interests of these stockholders may not always coincide with our interests as a company or the interests of other stockholders. Accordingly, these stockholders could cause us to enter into transactions or agreements that would not be widely viewed as beneficial.

If our officers, directors or principal stockholders sell substantial amounts of our common stock (including shares issued upon the exercise of options and warrants) in the public market, the market

price of our common stock could fall. These sales also might make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deemed appropriate.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent or deter attempts by our stockholders to replace or remove our current management.

Provisions in our corporate charter and bylaws and Delaware law may discourage, delay or prevent an acquisition of our company, a change in control, or attempts by our stockholders to replace or remove members of our current Board of Directors. Because our Board of Directors is responsible for appointing the members of our management team, these provisions could in turn affect any attempt by our stockholders to replace current members of our management team. These provisions include:

- a Board of Directors having three classes of directors with a three-year term of office that expires as to one class each year, commonly referred to as a "staggered board";
- a prohibition on actions by our stockholders by written consent;
- the inability of our stockholders to call special meetings of stockholders;
- the ability of our Board of Directors to issue preferred stock without stockholder approval, which could be used to institute a "poison pill" that would work to dilute the stock ownership of a potential hostile acquirer, effectively preventing acquisitions that have not been approved by our Board of Directors;
- limitations on the removal of directors; and
- advance notice requirements for director nominations and stockholder proposals.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which prohibits a person who owns in excess of 15% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner. As a result, it is difficult for a third party to acquire control of us without the approval of our Board of Directors and, therefore, mergers and acquisitions of us that our stockholders may consider in their best interests may not occur.

Because we do not intend to pay dividends, stockholders will benefit from an investment in our common stock only if it appreciates in value.

We have never declared or paid any cash dividends on our common stock. We currently intend to retain our future earnings, if any, to finance the expansion of our business and do not expect to pay any cash dividends in the foreseeable future. As a result, the success of an investment in our common stock will depend entirely upon any future appreciation. There is no guarantee that our common stock will appreciate in value or even maintain the price at which stockholders have purchased their shares.

Future sales of our common stock may depress our stock price.

The market price of our common stock could decline as a result of sales of substantial amounts of our common stock in the public market after the closing of this offering, or the perception that these sales could occur. In addition, these factors could make it more difficult for us to raise funds through future offerings of common stock. There are 35,831,456 shares of common stock outstanding as of

March 31, 2007. All of the shares sold in this offering and not held by our affiliates will be freely transferable without restriction or further registration under the Securities Act of 1933, as amended.

We have an aggregate of 2,488,106 shares of common stock remaining as of March 31, 2007 that have been registered or are freely tradable under an exemption from registration and are reserved for issuance upon exercise of options granted or reserved for grant under our stock option plan and our employee stock purchase plan. Stockholders can sell these shares in the public market upon issuance, subject to restrictions under securities laws. The number of shares we have reserved for issuance under our stock option plan may increase based on our issued and outstanding shares of common stock and we may increase the number of shares reserved for issuance under our employee stock purchase plan. We may register such additional shares in the future. In addition, some of our existing stockholders will be entitled to register their shares of common stock after this offering.

We have broad discretion in the use of the net proceeds from this offering, and we may not use these proceeds effectively.

We have not determined the specific allocation of the net proceeds of this offering. Our management will have broad discretion in the application of the net proceeds from this offering and could spend the proceeds in ways that do not necessarily improve our results of operations or enhance the value of our common stock. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business or financial condition, cause the price of our common stock to decline and delay product development.

You will experience immediate dilution in the book value per share of the common stock you purchase.

Since the price per share of our common stock being offered is substantially higher than the book value per share of our common stock, you will suffer substantial dilution in the net tangible book value of the common stock you purchase in this offering. If you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of $5.01 per share in the net tangible book value of the common stock. See the section entitled "Dilution" below for a more detailed discussion of the dilution you will incur if you purchase common stock in this offering.

A substantial number of shares of our outstanding common stock may be sold in this offering, which could cause the price of our common stock to decline.

In this offering, assuming the underwriter's option to purchase up to 1,050,000 additional shares from us is exercised in full, we will sell 8,050,000 shares, or approximately 22.5% of our outstanding common stock as of March 31, 2007. This sale and any future sales of a substantial number of shares of our common stock in the public market, or the perception that such sales may occur, could adversely affect the price of our common stock. We cannot predict the effect, if any, that market sales of those shares of common stock or the availability of those shares of common stock for sale will have on the market price of our common stock.

Forward-looking statements

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference in these documents include 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. We have based these forward-looking statements on our current expectations and projections about future events. Our actual results could differ materially from those discussed in, or implied by, these forward-looking statements. These forward-looking statements are generally identified by words such as "believe," "anticipate," "estimate," "expect," "intend," "plan," "will," "may" and other similar expressions. In addition, any statements that refer to expectations, projections or other characterizations of future events or circumstances are forward-looking statements. Forward-looking statements include, but are not necessarily limited to, those relating to:

- statements regarding interim Phase 2 results for ARQ 501 and our ability to meet the study's primary endpoints;
- future product research and development activities, including the timing and success of clinical trials, and status of product development;
- technical feasibility of our research and product candidates;
- scope of coverage and validity of our issued patents and the likelihood of issuances of our pending patent applications;
- plans for regulatory filings and receipt of future regulatory approvals including those relating to our future clinical protocols;
- implementation of our corporate strategy; and
- future financial condition.

Factors that could cause actual results or conditions to differ from those anticipated by these and other forward-looking statements include those more fully described in the "Risk factors" section of this prospectus supplement and elsewhere in this prospectus supplement and in the reports we file with the SEC that are incorporated by reference into this prospectus supplement and the accompanying prospectus. We undertake no obligation to update or revise these forward-looking statements to reflect events or circumstances after the date of this prospectus supplement except as required by law.

Use of proceeds

We estimate that the net proceeds to us from this offering will be approximately $50.5 million (or approximately $58.1 million if the underwriters' over-allotment option is exercised in full), after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering to fund our research and development efforts, including clinical trials for our proprietary candidates, and for general corporate purposes, including working capital. We may also use a portion of the net proceeds to acquire or invest in complementary businesses, technologies, drugs, drug candidates or other intellectual property, although we have no present commitments or agreements to do so.

The amounts and timing of these expenditures will depend on a number of factors, such as the timing and progress of our research and development efforts, technological advances and the competitive environment for our drug candidates. As of the date of this prospectus supplement, we cannot specify with certainty all of the particular uses for the net proceeds to us from this offering. Accordingly, we will retain broad discretion over the use of these proceeds. Pending these uses, we intend to invest the net proceeds in investment-grade, interest-bearing securities.

Price range of our common stock

Our common stock is traded on the NASDAQ Global Market under the symbol "ARQL". The following table sets forth, for the periods indicated, the reported high and low sales prices per share of our common stock as reported by the NASDAQ Global Market:

Year Ended December 31, 2005	High	Low
First Quarter	$ 6.75	$ 4.56
Second Quarter	6.86	4.69
Third Quarter	8.43	6.30
Fourth Quarter	7.90	6.05

Year Ended December 31, 2006	High	Low
First Quarter	$ 6.28	$ 5.03
Second Quarter	6.41	4.01
Third Quarter	5.85	3.99
Fourth Quarter	7.09	3.83

Year Ending December 31, 2007	High	Low
First Quarter	$ 7.72	$ 5.78
Second Quarter (through June 13)	10.59	7.26

On June 13, 2007, the closing price of our common stock as reported by the NASDAQ Global Market was $7.91 per share. As of March 6, 2007, there were approximately 131 shareholders of record and 6,261 beneficial shareholders of our common stock.

Dividend policy

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

Capitalization

The following table sets forth our cash, cash equivalents, and marketable securities and capitalization as of March 31, 2007:

- on an actual basis; and
- on an as adjusted basis to give effect to the sale of 7,000,000 shares by us in this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

This table should be read with "Management's discussion and analysis of financial condition and results of operations" and our financial statements and notes thereto incorporated by reference in this prospectus supplement and the accompanying prospectus.

	As of March 31, 2007	
	Actual	As adjusted
	(in thousands, except per share data)	
Cash, cash equivalents, and marketable securities	$ 83,727	$ 134,205

	As of March 31, 2007	
Total liabilities	$ 26,260	$ 26,260
Stockholders' equity:		
Preferred stock, par value $0.01 per share; 1,000,000 shares; no shares issued or outstanding		
Common stock, par value $0.01 per share; 100,000,000 shares authorized; 35,831,456 shares issued and outstanding, actual; and 42,831,456 shares issued and outstanding, as adjusted	358	428
Additional paid-in-capital	309,382	359,790
Accumulated deficit	(242,721)	(242,721)
Accumulated other comprehensive loss	(73)	(73)
Total stockholders' equity	66,946	117,424
Total capitalization	$ 93,206	$ 143,684

The table above does not include $27 million in upfront licensing payments received from Kyowa in the second quarter of 2007.

The outstanding shares of our common stock outstanding excludes as of March 31, 2007:

- 4,610,118 shares issuable upon exercise of outstanding options at a weighted average exercise price of $6.62 per share; and
- 2,488,106 shares of common stock reserved for future issuance under our equity incentive plan, director's plan and employee stock purchase plan.

Dilution

The net tangible book value of our common stock as of March 31, 2007 was approximately $66.9 million, or $1.87 per share. Net tangible book value per share is equal to the amount of our total tangible assets, less total liabilities, divided by the number of shares of our common stock outstanding. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately afterwards. After giving effect to our sale of the 7,000,000 shares of common stock we are offering through this prospectus supplement and the accompanying prospectus, at a public offering price of $7.75 per share, and after deducting underwriting discounts and commissions and estimated offering expenses, our net tangible book value as of March 31, 2007 would have been approximately $117.4 million, or $2.74 per share. This represents an immediate increase in net tangible book value of $0.87 per share to existing stockholders and an immediate dilution of $5.01 per share to new investors purchasing shares of common stock in this offering. The following table illustrates this dilution:

Public offering price per share		$ 7.75
Net tangible book value per share as of March 31, 2007	$ 1.87	
Increase per share attributable to new investors	0.87	
As adjusted net tangible book value per share after giving effect to this offering		2.74
Dilution per share to new investors		$ 5.01

The number of shares of our common stock in the calculations above are based on 35,831,456 shares outstanding as of March 31, 2007, assumes no exercise of the underwriters' over-allotment option to purchase up to 1,050,000 additional shares of common stock from us, and excludes, as of that date:

- 4,610,118 shares issuable upon exercise of outstanding options at a weighted average exercise price of $6.62 per share; and

- 2,488,106 shares of common stock reserved for future issuance under our equity incentive plan, director's plan and employee stock purchase plan.

If the underwriters exercise the over-allotment option granted by us in full, the as adjusted net tangible book value as of March 31, 2007 will increase to approximately $2.85 per share, representing an increase to existing stockholders of approximately $0.98 per share, and there will be an immediate dilution of approximately $4.90 per share to new investors.

Material United States federal income and estate tax considerations for non-United States holders

To ensure compliance with U.S. Treasury Department Circular 230, prospective investors are hereby notified that: (1) any discussion of U.S. federal tax issues in this prospectus supplement is not intended or written by us to be relied upon, and cannot be relied upon, by investors for the purpose of avoiding U.S. federal tax penalties that may be imposed on investors under the Internal Revenue Code of 1986, as amended, (the "Code"), (2) such discussion is included herein by us in connection with the promotion or marketing (within the meaning of Circular 230) by us and the underwriters of our common stock, and (3) prospective investors should seek advice based on their particular circumstances from an independent tax advisor.

GENERAL

The following is a general summary of material U.S. federal income and estate tax considerations related to the acquisition, ownership and disposition of our common stock by a non-U.S. holder that acquires our common stock pursuant to this offering. The discussion is based on provisions of the Code, applicable U.S. Treasury regulations promulgated thereunder and administrative and judicial interpretations, all as in effect on the date of this prospectus supplement, and all of which are subject to change at any time, possibly on a retroactive basis. The summary is limited to non-U.S. holders that hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code. No assurances can be given that any changes in these laws or authorities will not affect the accuracy of the discussions set forth in this summary. As used in this discussion, the term "non- U.S. holder" means a beneficial owner of our common stock that is not, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;

- a corporation or a partnership, including any entity treated as a corporation or partnership for U.S. federal income tax purposes, created or organized in or under the laws of the United States or any State of the United States or the District of Columbia;

- an estate, the income of which is subject to U.S. federal income taxation regardless of its source; or

- a trust (1) if a U.S. court is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust, or (2) that has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

This summary does not consider all of the tax considerations that may be relevant to non-U.S. holders in light of their particular circumstances and does not consider:

- U.S. federal gift tax consequences, or U.S. state or local or non-U.S. tax consequences;

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specific facts and circumstances that may be relevant to a particular non-U.S. holder's tax position, including, if the non-U.S. holder is a partnership, that the U.S. tax consequences of holding and disposing of our common stock may be affected by certain determinations made at the partner level;

> the tax consequences for partnerships or persons who hold their interests through a partnership or other entity classified as a partnership for U.S. federal income tax purposes;

> the tax consequences for the stockholders or beneficiaries of a non-U.S. holder;

> all of the U.S. federal tax considerations that may be relevant to a non-U.S. holder in light of its particular circumstances or to non-U.S. holders that may be subject to special treatment under U.S. federal tax laws, such as financial institutions, insurance companies, regulated investment companies, pension funds, tax-exempt organizations, certain trusts, hybrid entities, dual residents, certain former citizens or residents of the United States, holders subject to U.S. federal alternative minimum tax, broker-dealers, dealers or traders in securities or currencies, and traders who elect to mark to market their securities; or

> special tax rules that may apply to a non-U.S. holder that holds our common stock as part of a "straddle," "hedge," "conversion transaction," "synthetic security," or other integrated investment.

This discussion is for general purposes only. Prospective investors are urged to consult their own tax advisors regarding the application of the U.S. federal income and estate tax laws to their particular situations and the consequences under foreign, state, and local tax and other laws and tax treaties.

DIVIDENDS

As previously discussed, we do not anticipate paying cash or other dividends on our common stock in the foreseeable future. See "Dividend policy." If we pay dividends, in cash or other property, on our common stock, those payments will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those dividends exceed our current and accumulated earnings and profits, the dividends will constitute a return of capital and first reduce the non-U.S. holder's basis, but not below zero, and then will be treated as gain from the sale of stock.

We generally will have to withhold U.S. federal income tax at a rate of 30%, or a lower rate under an applicable income tax treaty, from the gross amount of the dividends paid to a non-U.S. holder, unless the dividend is effectively connected with the conduct of a trade or business of a non-U.S. holder within the United States or, if an income tax treaty applies, attributable to a permanent establishment maintained by the non-U.S. holder within the United States, and the non-U.S. holder has satisfied certain certification requirements under applicable U.S. Treasury regulations.

Under applicable U.S. Treasury regulations, a non-U.S. holder claiming the benefit of a lower rate of U.S. withholding tax with respect to dividends will be required to satisfy certain certification requirements. Non-U.S. holders should consult their tax advisors regarding their entitlement to benefits under a relevant income tax treaty.

Dividends that are effectively connected with a non-U.S. holder's conduct of a trade or business in the United States or, if an income tax treaty applies, attributable to a permanent establishment of the non-U.S. holder in the United States, will be taxed at the regular graduated U.S. federal income tax rates generally applicable to a U.S. person (as defined in the Code), net of allowable deductions and credits, assuming that the non-U.S. holder complies with applicable certification and disclosure requirements.

In addition, a "branch profits tax" may be imposed at a 30% rate, or a lower rate under an applicable income tax treaty, on dividends received by a non-U.S. holder that is a foreign corporation (for U.S. federal income tax purposes) that are effectively connected with such non-U.S. holder's conduct of a trade or business in the United States.

In order to claim the benefit of an income tax treaty or to claim exemption from withholding because the income is effectively connected with the conduct of a trade or business in the United States, a non-U.S. holder must generally provide a properly executed IRS Form W-8BEN, for

treaty benefits, or

W-8ECI, for effectively connected income, respectively (or such successor forms as the IRS designates), prior to the payment of dividends. These forms must be updated periodically.

A non-U.S. holder that is eligible for a reduced rate of U.S. federal withholding tax under an income tax treaty may obtain a refund of any excess amounts withheld by filing with the IRS an appropriate claim for a refund together with the required information.

GAIN ON DISPOSITION OF COMMON STOCK

A non-U.S. holder generally will not be subject to U.S. federal income or withholding tax with respect to gain realized on a sale or other disposition of our common stock unless one of the following applies:

- the gain is effectively connected with the non-U.S. holder's conduct of a trade or business in the United States or, alternatively, if an income tax treaty applies, is attributable to a permanent establishment maintained by the non-U.S. holder in the United States; in these cases, the non-U.S. holder generally will be taxed on its net gain derived from the disposition at the regular graduated rates and generally in the manner applicable to U.S. persons and, if the non-U.S. holder is a foreign corporation, the "branch profits tax" described above may also apply;

- the non-U.S. holder is an individual who is present in the United States for 183 days or more in the taxable year of the disposition and certain other conditions are met; in this case, the non-U.S. holder will be subject to a 30% tax (unless an applicable income tax treaty provides for an exemption or reduced rate) on the gain derived from the disposition, which may be offset by the amount of certain U.S. source losses; or

- our common stock constitutes a United States real property interest by reason of our status as a "United States real property holding corporation," or a "USRPHC," for U.S. federal income tax purposes at any time during the shorter of the 5-year period ending on the date of such disposition or the period that the non-U.S. holder held our common stock. The determination of whether we are a USRPHC generally depends on the fair market value of our United States real property interests relative to the fair market value of our other business assets. There can be no assurance that we are not currently and will not become a USRPHC in the future. As long as our common stock is "regularly traded on an established securities market" within the meaning of Section 897(c)(3) of the Code, however, our common stock will be treated as United States real property interest only with respect to a non-U.S. holder who owned directly or indirectly more than 5 percent of our common stock during the shorter of the 5-year period ending on the date of disposition or the period that the non-U.S. holder held our common stock and we were a USRPHC during that period. If we are or were to become a USRPHC and a non-U.S. holder owned directly or indirectly more than 5 percent of our common stock during the period described above or our common stock were not "regularly traded on an established securities market," then a non-U.S. holder would generally be subject to U.S. federal income tax on its net gain derived from the disposition of our common stock at regular graduated rates.

FEDERAL ESTATE TAX

Common stock owned or treated as owned by an individual who is a non-U.S. holder (as specially defined for U.S. federal estate tax purposes) at the time of death or who has made certain lifetime transfers of our common stock will be included in the individual's gross estate for U.S. federal estate tax purposes, unless an applicable estate tax or other treaty provides otherwise and, therefore, may be subject to U.S. federal estate tax.

INFORMATION REPORTING AND BACKUP WITHHOLDING TAX

The amount of dividends paid to a non-U.S. holder and the tax withheld from those dividends will be reported annually to the IRS and to each non-U.S. holder. These reporting requirements apply regardless of whether withholding was reduced or eliminated by an applicable income tax treaty. Copies of the information returns reporting those dividends and withholding also may be made available under the provisions of an applicable income tax treaty or agreement to the tax authorities in the country in which a non-U.S. holder is a resident.

Under some circumstances, U.S. Treasury regulations require backup withholding and additional information reporting on reportable payments on common stock. The gross amount of dividends paid to a non-U.S. holder that fails to certify its non-U.S. holder status in accordance with applicable U.S. Treasury regulations generally will be subject to a backup withholding at the applicable rate (currently 28%). Certain holders (including corporations) are not subject to backup withholding. Prospective investors should consult their tax advisors as to their qualification for exemption from backup withholding and the procedure for obtaining an exemption.

The payment of the proceeds of the sale or other disposition of common stock made to a non-U.S. holder by or through the U.S. office of any broker, U.S. or non-U.S., generally will be reported to the IRS and reduced by backup withholding, unless the non-U.S. holder either certifies its status as a non-U.S. holder under penalties of perjury or otherwise establishes an exemption. The payment of the proceeds from the disposition of common stock made to a non-U.S. holder by or through a non-U.S. office of a non-U.S. broker generally will not be reduced by backup withholding or reported to the IRS, unless the non-U.S. broker has certain enumerated connections with the United States. In general, the payment of proceeds from the disposition of common stock made to a non-U.S. holder by or through a non-U.S. office of a broker that is a U.S. person or has certain enumerated connections with the United States will be reported to the IRS and may be reduced by backup withholding unless the broker receives a statement from the non-U.S. holder that certifies its status as a non-U.S. holder under penalties of perjury or the broker has documentary evidence in its files that the holder is a non-U.S. holder.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules from a payment to a non-U.S. holder can be refunded or credited against the non-U.S. holder's U.S. federal income tax liability, if any, provided that the required information is furnished to the IRS in a timely manner. These backup withholding and information reporting rules are complex and non-U.S. holders are urged to consult their own tax advisors regarding the application of these rules to them.

The foregoing discussion of U.S. federal income and estate tax considerations is for general information only and is not intended to constitute a complete analysis of all U.S. income tax consequences which could be relevant to non-U.S. holders relating to their acquisition, ownership, and disposition of our common stock. Accordingly, each prospective non-U.S. holder of our common stock should consult its own tax advisor with respect to the U.S. federal, state, local and non-U.S. tax consequences of the acquisition, ownership and disposition of our common stock.

Underwriting

We are offering the shares of our common stock described in this prospectus supplement through the underwriters named below. UBS Securities LLC, CIBC World Markets Corp., Leerink Swann & Co., Inc., Fortis Securities LLC and Rodman & Renshaw, LLC are the representatives of the underwriters. UBS Securities LLC and CIBC World Markets Corp. are the joint book-running managers of the offering. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, each of the underwriters has severally agreed to purchase the number of shares of common stock listed next to its name in the following table:

Underwriters	Number of shares
UBS Securities LLC	2,390,244
CIBC World Markets Corp.	2,390,244
Leerink Swann & Co., Inc.	1,365,853
Fortis Securities LLC	682,927
Rodman & Renshaw, LLC	170,732
Total	7,000,000

The underwriting agreement provides that the underwriters must buy all of the shares if they buy any of them. However, the underwriters are not required to take or pay for the shares covered by the underwriters' over-allotment option described below.

Our common stock is offered subject to a number of conditions, including:

- receipt and acceptance of our common stock by the underwriters; and

- the underwriters' right to reject orders in whole or in part.

In connection with this offering, certain of the underwriters or securities dealers may distribute prospectus electronically. Sales of shares made outside of the United States may be made by affiliates of the underwriters.

OVER-ALLOTMENT OPTION

We have granted the underwriters an option to buy up to 1,050,000 additional shares of our common stock. The underwriters may exercise this option solely for the purpose of covering over-allotments, if any, made in connection with this offering. The underwriters have 30 days from the date of this prospectus supplement to exercise this option. If the underwriters exercise this option, they will each purchase additional shares approximately in proportion to the amounts specified in the table above.

COMMISSIONS AND DISCOUNTS

Shares sold by the underwriters to the public will initially be offered at the initial offering price set forth on the cover of this prospectus supplement. Any shares sold by the underwriters to securities dealers may be sold at a discount of up to $0.28 per share from the initial public offering price. Any of these securities dealers may resell any shares purchased from the underwriters to other brokers or dealers at a discount of up to $0.10 per share from the initial public offering price. If all the shares are not sold at the initial public offering price, the underwriters may change the offering price and the other selling terms. Upon execution of the underwriting agreement, the underwriters will be obligated to purchase the shares at the prices and upon the terms stated therein and, as a result, will thereafter bear any risk associated with changing the offering price to the public or other selling terms.

The following table shows the per share and total underwriting discounts and commissions we will pay to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase up to an additional 1,050,000 shares:

	No exercise	Full exercise
Per share	$ 0.48	$ 0.48
Total	$ 3,336,375	$ 3,836,831

We estimate that the total expenses of this offering payable by us, not including the underwriting discounts and commissions, will be approximately $435,625.

NO SALES OF SIMILAR SECURITIES

We and our executive officers and certain of our directors have entered into lock-up agreements with the underwriters. Our remaining directors will enter into lock-up agreements by the closing of this offering. Under these agreements, subject to certain exceptions, we and each of these persons may not, without the prior written approval of UBS Securities LLC and CIBC World Markets Corp., offer, sell, contract to sell or otherwise dispose of, or hedge our common stock or securities convertible into or exercisable or exchangeable for our common stock. These restrictions will be in effect for a period of 90 days after the date of this prospectus supplement (the Lock-Up Period). The permitted exceptions include issuance of our common stock upon the exercise of outstanding options or warrants; issuance of employee stock options not exercisable during the Lock-Up Period; issuance of our common stock pursuant to our employment stock purchase plan, provided that such common stock does not vest during the Lock-Up Period; and issuance of our common stock, not to exceed approximately 10.7 million shares, in connection with any license or strategic alliance, provided that the recipient shall be subject to a similar lock-up provision for the remainder of the Lock-Up Period. In addition, Dr. Hill may establish a 10b5-1 plan during the Lock-Up Period, provided that such plan does not provide for the disposition of securities in the first 45 days of the Lock-Up Period. At any time and without public notice, UBS Securities LLC and CIBC World Markets Corp. may in their sole discretion release all or some of the securities from these lock-up agreements.

INDEMNIFICATION AND CONTRIBUTION

We have agreed to indemnify the underwriters and their controlling persons against certain liabilities, including liabilities under the Securities Act. If we are unable to provide this indemnification, we will contribute to payments the underwriters and their controlling persons may be required to make in respect of those liabilities.

NASDAQ GLOBAL MARKET QUOTATION

Our common stock is quoted on the Nasdaq Global Market under the symbol "ARQL."

PRICE STABILIZATION, SHORT POSITIONS, PASSIVE MARKET MAKING

In connection with this offering, the underwriters may engage in activities that stabilize, maintain or otherwise affect the price of our common stock, including:

- stabilizing transactions;
- short sales;
- purchases to cover positions created by short sales;

- imposition of penalty bids;
- syndicate covering transactions; and
- passive market making.

Stabilizing transactions consist of bids or purchases made for the purpose of preventing or retarding a decline in the market price of our common stock while this offering is in progress. These transactions may also include making short sales of our common stock, which involve the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering. Short sales may be "covered short sales," which are short positions in an amount not greater than the underwriters' over-allotment option referred to above, or may be "naked short sales," which are short positions in excess of that amount.

The underwriters may close out any covered short position either by exercising their over-allotment option, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market, compared to the price at which they may purchase shares through the over-allotment option.

Naked short sales are sales in excess of the over-allotment option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchased in this offering.

The underwriters also may impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of that underwriter in stabilizing or short covering transactions.

As a result of these activities, the price of our common stock may be higher than the price that otherwise might exist in the open market. If these activities are commenced, they may be discontinued by the underwriters at any time. The underwriters may carry out these transactions on the Nasdaq Global Market, in the over-the-counter market or otherwise.

In addition, in connection with this offering, certain of the underwriters (and selling group members) may engage in passive market making transactions in our common stock on the Nasdaq Global Market prior to the pricing and completion of this offering. Passive market making consists of displaying bids on the Nasdaq Global Market no higher than the bid prices of independent market makers and making purchases at prices no higher than these independent bids and effected in response to order flow. Net purchases by a passive market maker on each day are generally limited to a specified percentage of the passive market maker's average daily trading volume in the common stock during a specified period and must be discontinued when such limit is reached. Passive market making may cause the price of our common stock to be higher than the price that otherwise would exist in the open market in the absence of these transactions. If passive market making is commenced, it may be discontinued at any time.

AFFILIATIONS

Certain of the underwriters and their affiliates have provided and may provide commercial banking, financial advisory and investment banking services for us for which they receive fees.

Notice to investors

EUROPEAN ECONOMIC AREA

In relation to each Member State of the European Economic Area, or EEA, which has implemented the Prospectus Directive (each, a Relevant Member State), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, or the Relevant Implementation Date, our common stock will not be offered to the public in that Relevant Member State prior to the publication of a prospectus in relation to our common stock that has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the competent authority in that Relevant Member State, all in accordance with the Prospectus Directive, except that, with effect from and including the Relevant Implementation Date, our common stock may be offered to the public in that Relevant Member State at any time:

- to legal entities which are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;
- to any legal entity which has two or more of (1) an average of at least 250 employees during the last financial year; (2) a total balance sheet of more than €43,000,000 and (3) an annual net turnover of more than €50,000,000, as shown in its last annual or consolidated accounts; or
- in any other circumstances which do not require the publication by us of a prospectus pursuant to Article 3 of the Prospectus Directive.

As used above, the expression "offered to the public" in relation to any of our common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and our common stock to be offered so as to enable an investor to decide to purchase or subscribe for our common stock, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State and the expression "Prospectus Directive" means Directive 2003/71/ EC and includes any relevant implementing measure in each Relevant Member State.

The EEA selling restriction is in addition to any other selling restrictions set out below.

UNITED KINGDOM

Our common stock may not be offered or sold and will not be offered or sold to any persons in the United Kingdom other than to persons whose ordinary activities involve them in acquiring, holding, managing or disposing of investments (as principal or as agent) for the purposes of their businesses and in compliance with all applicable provisions of the Financial Services and Markets Act 2000, or the FSMA, with respect to anything done in relation to our common stock in, from or otherwise involving the United Kingdom. In addition, each underwriter has only communicated or caused to be communicated and will only communicate or cause to be communicated any invitation or inducement to engage in investment activity (within the meaning of Section 21 of the FSMA) received by it in connection with the issue or sale of our common stock in circumstances in which Section 21(1) of the FSMA does not apply to us. Without limitation to the other restrictions referred to herein, this prospectus is directed only at (1) persons outside the United Kingdom, (2) persons having professional experience in matters relating to investments who fall within the definition of "investment professionals" in Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005; or (3) high net worth bodies corporate, unincorporated associations and partnerships and trustees of high value trusts as described in Article 49(2) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005. Without limitation to the other restrictions referred to

herein, investment or investment activity to which this prospectus relates is available only to, and will be engaged in only with, such persons, and persons within the United Kingdom who receive this communication (other than persons who fall within (2) or (3) above) should not rely or act upon this communication.

FRANCE

No prospectus (including any amendment, supplement or replacement thereto) has been prepared in connection with the offering of our common stock that has been approved by the Autorité des marchés financiers or by the competent authority of another State that is a contracting party to the Agreement on the European Economic Area and notified to the Autorité des marchés financiers; no common stock has been offered or sold and will be offered or sold, directly or indirectly, to the public in France except to permitted investors, consisting of persons licensed to provide the investment service of portfolio management for the account of third parties, qualified investors (investisseurs qualifiés) acting for their own account and/or corporate investors meeting one of the four criteria provided in Article 1 of Decree N7 2004-1019 of September 28, 2004 and belonging to a limited circle of investors (cercle restreint d'investisseurs) acting for their own account, with "qualified investors" and "limited circle of investors" having the meaning ascribed to them in Article L. 411-2 of the French Code Monétaire et Financier and applicable regulations thereunder; none of this prospectus or any other materials related to the offer or information contained therein relating to our common stock has been released, issued or distributed to the public in France except to Permitted Investors; and the direct or indirect resale to the public in France of any common stock acquired by any Permitted Investors may be made only as provided by articles L. 412-1 and L. 621-8 of the French Code Monétaire et Financier and applicable regulations thereunder.

ITALY

The offering of shares of our common stock has not been cleared by the Italian Securities Exchange Commission (Commissione Nazionale per le Società e la Borsa, or the CONSOB) pursuant to Italian securities legislation and, accordingly, shares of our common stock may not and will not be offered, sold or delivered, nor may or will copies of this prospectus or any other documents relating to shares of our common stock or the offering be distributed in Italy other than to professional investors (operatori qualificati), as defined in Article 31, paragraph 2 of CONSOB Regulation No. 11522 of July 1, 1998, as amended, or Regulation No. 11522.

Any offer, sale or delivery of shares of our common stock or distribution of copies of this prospectus or any other document relating to shares of our common stock or the offering in Italy may and will be effected in accordance with all Italian securities, tax, exchange control and other applicable laws and regulations, and, in particular, will be: (i) made by an investment firm, bank or financial intermediary permitted to conduct such activities in Italy in accordance with the Legislative Decree No. 385 of September 1, 1993, as amended, or the Italian Banking Law, Legislative Decree No. 58 of February 24, 1998, as amended, Regulation No. 11522, and any other applicable laws and regulations; (ii) in compliance with Article 129 of the Italian Banking Law and the implementing guidelines of the Bank of Italy; and (iii) in compliance with any other applicable notification requirement or limitation which may be imposed by CONSOB or the Bank of Italy.

Any investor purchasing shares of our common stock in the offering is solely responsible for ensuring that any offer or resale of shares of common stock it purchased in the offering occurs in compliance with applicable laws and regulations.

This prospectus and the information contained herein are intended only for the use of its recipient and are not to be distributed to any third party resident or located in Italy for any reason. No person resident or located in Italy other than the original recipients of this document may rely on it or its content.

In addition to the above (which shall continue to apply to the extent not inconsistent with the implementing measures of the Prospective Directive in Italy), after the implementation of the Prospectus Directive in Italy, the restrictions, warranties and representations set out under the heading "European Economic Area" above shall apply to Italy.

GERMANY

Shares of our common stock may not be offered or sold or publicly promoted or advertised by any underwriter in the Federal Republic of Germany other than in compliance with the provisions of the German Securities Prospectus Act (Wertpapierprospektgestz WpPG) of June 22, 2005, as amended, or of any other laws applicable in the Federal Republic of Germany governing the issue, offering and sale of securities.

SPAIN

Neither the common stock nor this prospectus have been approved or registered in the administrative registries of the Spanish National Securities Exchange Commission (Comisión Nacional del Mercado de Valores). Accordingly, our common stock may not be offered in Spain except in circumstances which do not constitute a public offer of securities in Spain within the meaning of articles 30bis of the Spanish Securities Markets Law of 28 July 1988 (Ley 24/1988, de 28 de Julio, del Mercado de Valores), as amended and restated, and supplemental rules enacted thereunder.

SWEDEN

This is not a prospectus under, and has not been prepared in accordance with the prospectus requirements provided for in, the Swedish Financial Instruments Trading Act [lagen (1991:980) om handel med finasiella instrument] nor any other Swedish enactment. Neither the Swedish Financial Supervisory Authority nor any other Swedish public body has examined, approved, or registered this document.

SWITZERLAND

The common stock may not and will not be publicly offered, distributed or re-distributed on a professional basis in or from Switzerland and neither this prospectus nor any other solicitation for investments in our common stock may be communicated or distributed in Switzerland in any way that could constitute a public offering within the meaning of Articles 1156 or 652a of the Swiss Code of Obligations or of Article 2 of the Federal Act on Investment Funds of March 18, 1994. This prospectus may not be copied, reproduced, distributed or passed on to others without the underwriters' prior written consent. This prospectus is not a prospectus within the meaning of Articles 1156 and 652a of the Swiss Code of Obligations or a listing prospectus according to article 32 of the Listing Rules of the Swiss Exchange and may not comply with the information standards required thereunder. We will not apply for a listing of our common stock on any Swiss stock exchange or other Swiss regulated market and this prospectus may not comply with the information required under the relevant listing rules. The common stock offered hereby has not and will not be registered with the Swiss Federal Banking Commission and has not and will not be authorized under the Federal Act on Investment Funds of March 18, 1994. The investor protection afforded to acquirers of

investment fund certificates by the Federal Act on Investment Funds of March 18, 1994 does not extend to acquirers of our common stock.

ISRAEL

In the State of Israel, the common stock offered hereby may not be offered to any person or entity other than the following:

(a) a fund for joint investments in trust (i.e., mutual fund), as such term is defined in the Law for Joint Investments in Trust, 5754-1994, or a management company of such a fund;

(b) a provident fund as defined in Section 47(a)(2) of the Income Tax Ordinance of the State of Israel, or a management company of such a fund;

(c) an insurer, as defined in the Law for Oversight of Insurance Transactions, 5741-1981,

(d) a banking entity or satellite entity, as such terms are defined in the Banking Law (Licensing), 5741-1981, other than a joint services company, acting for their own account or for the account of investors of the type listed in Section 15A(b) of the Securities Law 1968;

(e) a company that is licensed as a portfolio manager, as such term is defined in Section 8(b) of the Law for the Regulation of Investment Advisors and Portfolio Managers, 5755-1995, acting on its own account or for the account of investors of the type listed in Section 15A(b) of the Securities Law 1968;

(f) a company that is licensed as an investment advisor, as such term is defined in Section 7(c) of the Law for the Regulation of Investment Advisors and Portfolio Managers, 5755-1995, acting on its own account;

(g) a company that is a member of the Tel Aviv Stock Exchange, acting on its own account or for the account of investors of the type listed in Section 15A(b) of the Securities Law 1968.

(h) an underwriter fulfilling the conditions of Section 56(c) of the Securities Law, 5728-1968;

(i) a venture capital fund (defined as an entity primarily involved in investments in companies which, at the time of investment, (i) are primarily engaged in research and development or manufacture of new technological products or processes and (ii) involve above-average risk);

(j) an entity primarily engaged in capital markets activities in which all of the equity owners meet one or more of the above criteria; and

(k) an entity, other than an entity formed for the purpose of purchasing [securities] in this offering, in which the shareholders equity (including pursuant to foreign accounting rules, international accounting regulations and U.S. generally accepted accounting rules, as defined in the Securities Law Regulations (Preparation of Annual Financial Statements), 1993) is in excess of NIS 250 million.

Any offeree of the common stock offered hereby in the State of Israel shall be required to submit written confirmation that it falls within the scope of one of the above criteria. This prospectus supplement will not be distributed or directed to investors in the State of Israel who do not fall within one of the above criteria.

Legal matters

The validity of the securities offered by this prospectus supplement and the accompanying prospectus will be passed upon for us by Arnold & Porter LLP, Washington, DC. Dewey Ballantine LLP, New York, New York is counsel for the underwriters in connection with this offering.

Experts

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this prospectus supplement by reference to the Annual Report on Form 10-K for the year ended December 31, 2006 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

Where you can find more information

This prospectus supplement and the accompanying prospectus are part of certain registration statements on Form S-3 we filed with the SEC under the Securities Act of 1933, as amended, and do not contain all the information set forth in the registration statements. Whenever a reference is made in this prospectus supplement or the accompanying prospectus to any of our contracts, agreements or other documents, the reference may not be complete and you should refer to the exhibits that are a part of the registration statement or the exhibits to the reports or other documents incorporated by reference in this prospectus supplement and the accompanying prospectus for a copy of such contract, agreement or other document.

Because we are subject to the information and reporting requirements of the Securities Exchange Act of 1934, as amended, we file annual, quarterly and special reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's web site at http://www.sec.gov. You may also read and copy any document we file at the SEC's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room.

Incorporation of certain information by reference

The SEC allows us to "incorporate by reference" the information we file with them, which means that we can disclose important information to you by referring you to these documents instead of having to repeat the information in this prospectus supplement. The information incorporated by reference is an important part of this prospectus supplement and the accompanying prospectus, and information that we file later with the SEC will automatically update and supersede this information. Our periodic reports are filed with the SEC under SEC File Number 000-21429. We hereby incorporate by reference the following:

(1) our Annual Report filed on Form 10-K for the fiscal year ended December 31, 2006 filed with the SEC on March 12, 2007, including information incorporated by reference from our Definitive Proxy Statement on Schedule 14A for our annual meeting of stockholders filed with the SEC on April 16, 2007;

(2) our Quarterly Report on Form 10-Q for the quarter ended March 31, 2007 filed with the SEC on May 10, 2007;

(3) our Current Reports on Form 8-K filed with the SEC on January 19, 2007, February 1, 2007, March 7, 2007, March 28, 2007, April 27, 2007, May 29, 2007, June 5, 2007 and June 7, 2007;

(4) the description of our common stock contained in our Registration Statement on Form 8-A filed with the SEC on September 25, 1996, including any amendment or report filed for the purpose of updating such description; and

(5) any future filings made with the SEC under Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 until this offering is completed.

Unless specifically stated to the contrary, none of the information that we disclose under Items 2.02 or 7.01 of any Current Report on Form 8-K that we may from time to time furnish to the SEC will be incorporated by reference into, or otherwise included in, this prospectus supplement. All information incorporated by reference is part of this prospectus supplement, unless and until that information is updated and superseded by the information contained in this prospectus supplement, the accompanying prospectus, or any information later incorporated.

We will furnish to you, upon written or oral request, a copy of all of the documents that have been incorporated by reference in this prospectus, other than the exhibits to such documents unless the exhibits are specifically incorporated by reference but not delivered with this prospectus. Requests should be directed to:

William B. Boni, Vice President,
Investor Relations and Corporate Communications
ArQule, Inc.
19 Presidential Way
Woburn, MA 01801
(781) 994-0300
wboni@arqule.com

You should rely only on the information incorporated by reference or provided in this prospectus supplement and the accompanying prospectus. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus supplement and the accompanying prospectus is accurate as of any date other than the date on the front page of those documents.

PROSPECTUS

UP TO $100,000,000 OF OUR
COMMON STOCK
PREFERRED STOCK
WARRANTS

We may offer from time to time up to $100,000,000 in total of

- shares of our common stock,
- shares of our preferred stock,
- warrants to purchase shares of common stock or preferred stock, or
- any combination of our common stock, preferred stock or warrants.

We may offer the common stock, preferred stock and warrants (collectively, the "securities") separately or together, in separate series, in amounts, at prices and on terms to be set forth in one or more supplements to this prospectus. When we decide to issue securities, we will provide you with the specific terms and the public offering price of the securities in prospectus supplements. You should read this prospectus and the prospectus supplements carefully before you invest. This prospectus may not be used to offer or sell securities unless accompanied by a prospectus supplement.

Our common stock is quoted on the Nasdaq Global Market and traded under the symbol "ARQL." We may sell these securities to or through underwriters and also to other purchasers or through agents. We will set forth the names of any underwriters or agents in the applicable prospectus supplement.

Our principal executive offices are located at 19 Presidential Way, Woburn, Massachusetts 01801-5140 and our telephone number is (781) 994-0300.

An investment in our common stock involves a high degree of risk. See "Risk Factors" beginning on page 3 for information regarding certain material factors that you should consider in connection with an investment in our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is May 31, 2007

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ARQULE, INC.

SUMMARY

This summary contains a general summary of the information contained in this prospectus. It may not include all the information that is important to you. You should read the entire prospectus, the prospectus supplement delivered with the prospectus, and the documents incorporated by reference before making an investment decision.

We are a clinical-stage biotechnology company organized as a Delaware Corporation in 1993 and are engaged in the research and development of cancer therapeutics. Our mission is to research, develop and commercialize broadly effective, targeted cancer drugs with reduced toxicities compared to conventional cancer chemotherapeutics. Our expertise in molecular biology enables us to understand certain biological processes that are responsible for numerous types of human cancers and to discover novel drug candidates for these diseases. Our chemistry capabilities derived from our history of providing chemistry services for the pharmaceutical and biotechnology industries enable us to generate product candidates possessing certain pre-selected drug-like properties and a high degree of specificity for cancer cells. We believe that these qualities, when present from the earliest stages of product development, increase the likelihood of producing safe, effective and marketable drugs.

Our lead products are in clinical-stage development. We are conducting human clinical trials with three product candidates, designated as: ARQ 197, ARQ 501 and ARQ 171. We retain proprietary rights to ARQ 197, except for certain Asian countries where we have a collaboration with Kyowa Hakko Kogyo Co., Ltd. ("Kyowa") and we are developing ARQ 501 and ARQ 171 pursuant to a collaboration with Hoffmann-La Roche ("Roche").

ARQ 197 is the lead product from our Cancer Survival Pathways Program. ARQ 197 blocks the activity of c-Met, an enzyme believed to play key roles in human cancer, including cancer cell growth, survival, angiogenesis, invasion and metastasis. We believe the inappropriate expression of c-Met in most cancers and its role in controlling multiple signal transduction pathways involved in tumor growth and metastasis render it a highly compelling target for cancer therapy.

ARQ 501 and ARQ 171, the lead products from our Activated Checkpoint Therapy® (ACT) program, are designed to kill cancer cells selectively while sparing normal cells through direct activation of DNA damage response/checkpoint pathways. These compounds are believed to activate checkpoint pathways regulated by the E2F-1 regulatory protein thereby restoring the cell's natural defense mechanism against DNA damage and initiating the process of apoptosis, or programmed cell death, in these cells.

In addition, we maintain a number of pre-clinical programs directed toward molecular targets that we believe play critical roles in the development of human cancers. The targets, mechanisms of action and chemistry related to compounds generated from these programs differ, offering the potential for multiple therapeutic opportunities. We are applying a broad spectrum of chemistry capabilities developed and validated in the course of multiple collaborations with large pharmaceutical companies to our internal oncology drug discovery and development efforts. These capabilities are designed to facilitate the progression of our programs from initial discovery through pre-clinical development.

Securities We are Offering

We may offer any of the following securities from time to time:

shares of our common stock;

shares of our preferred stock;

warrants to purchase shares of our preferred stock or common stock; or

any combination of our common stock, preferred stock, or warrants.

When we use the term "securities" in this prospectus, we mean any of the securities we may offer with this prospectus, unless we say otherwise. The total dollar amount of all securities that we may issue will not exceed $100,000,000. This prospectus, including the following summary, describes the general terms that may apply to the securities; the specific terms of any particular securities that we may offer will be described in a separate supplement to this prospectus.

Common Stock. We may offer shares of our common stock. Our common stock currently is listed on the Nasdaq Global Market under the symbol "ARQL."

Preferred Stock. We may offer our preferred stock in one or more series. For any particular series we offer, the applicable prospectus supplement will describe the specific designation; the aggregate number of shares offered; the rate and periods, or manner of calculating the rate and periods, for dividends, if any; the stated value and liquidation preference amount, if any; the voting rights, if any; the terms on which the series will be convertible into or exchangeable for other securities or property, if any; the redemption terms, if any; and any other specific terms.

Warrants. We may offer warrants to purchase our common stock and preferred stock. For any particular warrants we offer, the applicable prospectus supplement will describe the underlying security; the expiration date; the exercise price or the manner of determining the exercise price; the amount and kind, or the manner of determining the amount and kind, of any security to be delivered by us upon exercise; and any other specific terms. We may issue the warrants under warrant agreements between us and one or more warrant agents.

Listing. If any securities are to be listed or quoted on a securities exchange or quotation system, the applicable prospectus supplement will say so.

RISK FACTORS

An investment in our securities involves a high degree of risk. You should carefully consider the specific risks set forth under the caption "Risk Factors" in the applicable prospectus supplement before making an investment decision. The risks and uncertainties described in the prospectus supplement are not the only ones we face. Additional risks and uncertainties that we are unaware of or that we believe are not material at the time could also materially adversely affect our business, financial condition or results of operations. In any case, the value of our common stock, preferred stock or warrants could decline, and you could lose all or part of your investment. You should also refer to the other information contained in this prospectus or incorporated herein by reference, including our consolidated financial statements and the notes to those statements and the risks and uncertainties described in Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2006. See also the information contained under the heading "Special Note Regarding Forward-Looking Statements" immediately below.

SPECIAL NOTE REGARDING FORWARD LOOKING STATEMENTS

This prospectus and any accompanying prospectus supplement contains and incorporates by reference certain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements also may be included in other statements that we make. All statements that are not descriptions of historical facts are forward-looking statements, based on management's estimates, assumptions and projections that are subject to risks and uncertainties. These statements can generally be identified by the use of forward-looking terminology such as "believes," "expects," "intends," "may," "will," "should," or "anticipates" or similar terminology. Although we believe that the expectations reflected in our forward-looking statements are reasonable as of the date made, actual results could differ materially from those currently anticipated due to a

number of factors, including risks relating to the early stage of products under development; uncertainties relating to clinical trials; dependence on third parties; future capital needs; and risks relating to the commercialization, if any, of our product candidates (such as marketing, safety, regulatory, patent, product liability, supply, competition and other risks). Additional important factors that could cause actual results to differ materially from our current expectations are identified in other filings with the Securities and Exchange Commission. Our forward-looking statements are based on information available to us today, and we will not update these statements, except as may be required by law.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the "SEC" or the "Commission") using a "shelf" registration process. Under this shelf process, we may from time to time offer up to $100,000,000 in total of (a) shares of common stock, $0.01 par value per share, (b) shares of preferred stock, $0.01 par value per share, in one or more series, (c) warrants to purchase shares of common stock or preferred stock or (d) any combination of our common stock, preferred stock or warrants, either individually or as units consisting of one or more of the foregoing, each at prices and on terms to be determined at the time of sale. The common stock, preferred stock and warrants are collectively referred to in this prospectus as "securities." The securities offered pursuant to this prospectus may be one or more series of issuances and the total offering price of the securities will not exceed $100,000,000 (or its equivalent based on the applicable exchange rate at the time of the sale in one or more foreign currencies, currency units or composite currencies that we may designate).

This prospectus provides you with a general description of the securities we may offer. Each time we sell securities, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement may also add, update or change information contained in this prospectus. You should read both this prospectus and any prospectus supplement together with the additional information described below under the heading "Where You Can Find More Information."

The registration statement that contains this prospectus, including the exhibits to the registration statement and the information incorporated by reference, provides additional information about the securities offered under this prospectus. That registration statement can be read at the SEC web site or at the SEC public reference room as discussed below under the heading "Where You Can Find More Information."

You should rely only on the information provided in the registration statement, this prospectus and in any prospectus supplement, including the information incorporated by reference. We have not authorized anyone to provide you with different information. You should not assume that the information in this prospectus or any supplement to this prospectus is accurate at any date other than the date indicated on the cover page of these documents.

USE OF PROCEEDS

We will use the net proceeds received from the sale of the securities for development of our drug discovery approach and potential product candidates, clinical trials, working capital and general corporate purposes, at the discretion of management.

PLAN OF DISTRIBUTION

We may sell the securities being offered by this prospectus separately or together through any of the following methods:

- directly to purchasers;
- through agents;
- to or through one or more underwriters or dealers;
- through a block trade in which the broker or dealer engaged to handle the block trade will attempt to sell the securities as agent, but may position and resell a portion of the block as principal to facilitate the transaction; or
- through a combination of any of these methods of sale.

In addition, we may issue the securities being offered by this prospectus as a dividend or distribution.

We may effect the distribution of the securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed from time to time;
- at market prices prevailing at the times of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

We will describe the method of distribution of the securities in the applicable prospectus supplement.

We may directly solicit offers to purchase the securities offered by this prospectus. Agents designated by us from time to time may solicit offers to purchase the securities. We will name any agent involved in the offer or sale of the securities and set forth any commissions payable by us to an agent in the applicable prospectus supplement. Unless otherwise indicated in the applicable prospectus supplement, any agent will be acting on a best efforts basis for the period of his or her appointment. Any agent may be deemed to be an "underwriter" of the securities as that term is defined in the Securities Act of 1933, as amended (the "Securities Act").

If we use an underwriter or underwriters in the sale of securities, we will execute an underwriting agreement with the underwriter or underwriters at the time we reach an agreement for sale. We will set forth in the applicable prospectus supplement the names of the specific managing underwriter or underwriters, as well as any other underwriters, and the terms of the transactions, including compensation of the underwriters and dealers. This compensation may be in the form of discounts, concessions or commissions. Underwriters and others participating in any offering of the securities may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. We will describe any of these activities in the applicable prospectus supplement.

If a dealer is used in the sale of the securities, we or an underwriter will sell securities to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale. The applicable prospectus supplement will set forth the name of the dealer and the terms of the transactions.

We may directly solicit offers to purchase the securities, and we may sell directly to institutional investors or others. These persons may be deemed to be underwriters within the meaning of the Securities Act with respect to any resale of the securities. The applicable prospectus supplement will describe the terms of any direct sales, including the terms of any bidding or auction process.

Agreements we enter into with agents, underwriters and dealers may entitle them to indemnification by us against specified liabilities, including liabilities under the Securities Act, or to contribution by us to payments they may be required to make in respect of these liabilities. The applicable prospectus supplement will describe the terms and conditions of indemnification or contribution.

We may authorize underwriters, dealers and agents to solicit offers by certain institutional investors to purchase offered securities under contracts providing for payment and delivery on a future date specified in the applicable prospectus supplement. The applicable prospectus supplement will also describe the public offering price for the securities and the commission payable for solicitation of these delayed delivery contracts. Delayed delivery contracts will contain definite fixed price and quantity terms. The obligations of a purchaser under these delayed delivery contracts will be subject to only two conditions:

- that the institution's purchase of the securities at the time of delivery of the securities is not prohibited under the law of any jurisdiction to which the institution is subject; and

- that we shall have sold to the underwriters the total principal amount of the offered securities, less the principal amount covered by the delayed delivery contracts.

To the extent permitted by and in accordance with Regulation M under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), in connection with an offering an underwriter may engage in over-allotments, stabilizing transactions, short covering transactions and penalty bids. Over-allotments involve sales in excess of the offering size, which creates a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum. Short covering transactions involve purchases of the securities in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would be otherwise. If commenced, the underwriters may discontinue any of these activities at any time.

To the extent permitted by and in accordance with Regulation M under the Exchange Act, any underwriters who are qualified market makers on the Nasdaq National Market may engage in passive market making transactions in the securities on the Nasdaq National Market during the business day prior to the pricing of an offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

No securities may be sold under this prospectus without delivery, in paper format, in electronic format on the Internet, or both, of the applicable prospectus supplement describing the method and terms of the offering.

DESCRIPTION OF COMMON STOCK

Authorized and Outstanding Capital Stock

As of May 4, 2007, we had 100,000,000 shares of common stock authorized, of which 35,922,771 shares were outstanding.

Listing

Our common stock is quoted on the NASDAQ Global Market and traded under the symbol "ARQL."

Dividends

Our Board of Directors may authorize, and we may make, distributions to our common stockholders, subject to any restriction in our Amended and Restated Certificate of Incorporation and to those limitations prescribed by law. However, we have never paid cash dividends on our common stock or any other securities, and we do not anticipate paying any cash dividends in the foreseeable future. We currently intend to retain future earnings, if any, for use in our business.

Fully Paid and Non-Assessable

All shares of our outstanding common stock are fully paid and non-assessable. Any additional shares of common stock that we issue will be fully paid and non-assessable.

Voting Rights

Each share of our common stock is entitled to one vote in each matter submitted to a vote at a meeting of stockholders including in all elections for directors; stockholders are not entitled to cumulative voting in the election for directors. Our stockholders may vote either in person or by proxy.

Preemptive and Other Rights

Holders of our common stock have no preemptive rights and have no other rights to subscribe for additional securities of our company under Delaware law. Nor does the common stock have any conversion rights or rights of redemption. Upon liquidation, all holders of our common stock are entitled to participate pro rata in our assets available for distribution, subject to the rights of any class of preferred stock then outstanding.

Meetings; Stockholder Action by Written Consent

Our By-Laws provide that we must hold an annual meeting of stockholders. Special meetings of our stockholders may be called at any time only by a majority of our Board of Directors or by our President.

All actions must be taken at an annual or special meeting. Our Certificate of Incorporation provides that stockholders may not take action by written consent without a meeting.

Staggered Board of Directors

Our Board of Directors is divided into three classes, the members of each of which serve for staggered three-year terms. Our stockholders may elect only one-third of the directors each year; therefore, it is more difficult for a third party to gain control of our Board of Directors than if our Board was not staggered.

Transfer Agent and Registrar

American Stock Transfer & Trust Company is our transfer agent and registrar.

DESCRIPTION OF PREFERRED STOCK

Our Amended and Restated Certificate of Incorporation authorizes our Board of Directors, without further stockholder action, to provide for the issuance of up to 1,000,000 shares of preferred

stock, in one or more classes or series and to fix the rights, preferences, privileges, and restrictions thereof, including dividend rights, dividend rates, conversion rights, voting rights, terms of redemption, redemption prices, liquidation preferences and the number of shares constituting any series of the designation of such series, without further vote or action by the stockholders. We may amend from time to time our Certificate of Incorporation to increase the number of authorized shares of preferred stock. Any such amendment would require the approval of the holders of a majority of the voting power of the shares entitled to vote thereon. As of the date of this prospectus, we have 1,000,000 shares of preferred shares authorized, but no shares of preferred stock outstanding.

The particular terms of any series of preferred stock being offered by us under this shelf registration statement will be described in the prospectus supplement relating to that series of preferred stock. Those terms may include:

- the title and liquidation preference per share of the preferred stock and the number of shares offered;
- the purchase price of the preferred stock;
- the dividend rate (or method of calculation), the dates on which dividends will be paid and the date from which dividends will begin to accumulate;
- any redemption or sinking fund provisions of the preferred stock;
- any conversion provisions of the preferred stock;
- the voting rights, if any, of the preferred stock; and
- any additional dividend, liquidation, redemption, sinking fund and other rights, preferences, privileges, limitations and restrictions of the preferred stock.

The preferred stock will, when issued, be fully paid and non-assessable.

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of shares of our common stock or preferred stock. Warrants may be issued independently or together with the shares of common stock or preferred stock offered by any prospectus supplement to this prospectus and may be attached to or separate from such shares. Further terms of the warrants will be set forth in the applicable prospectus supplement.

The applicable prospectus supplement will describe the terms of the warrants in respect of which this prospectus is being delivered, including, where applicable, the following:

- the title of such warrants;
- the aggregate number of such warrants;
- the price or prices at which such warrants will be issued;
- the designation, terms and number of shares of common stock or preferred stock purchasable upon exercise of such warrants;

the designation and terms of the shares of common stock or preferred stock with which such warrants are issued and the number of such warrants issued with such shares;

the date on and after which such warrants and the related common stock or preferred stock will be separately transferable, including any limitations on ownership and transfer of such warrants;

the price at which each share of common stock or preferred stock purchasable upon exercise of such warrants may be purchased;

the date on which the right to exercise such warrants shall commence and the date on which such right shall expire;

the minimum or maximum amount of such warrants that may be exercised at any one time;

information with respect to book-entry procedures, if any;

a discussion of certain federal income tax consequences; and

any other terms of such warrants, including terms, procedures and limitations relating to the exchange and exercise of such warrants.

LEGAL MATTERS

Arnold & Porter LLP has rendered an opinion that the securities offered hereby, when sold, will be legally issued, fully paid and non-assessable.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control over Financial Reporting) incorporated in this Registration Statement by reference to the Annual Report on Form 10-K for the year ended December 31, 2006 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference the information that we file with the SEC, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. These documents may include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as Proxy Statements. Any documents that we subsequently file with the SEC will automatically update and replace the information previously filed with the SEC. Thus, for example, in the case of a conflict or inconsistency between information set forth in this prospectus and information incorporated by reference into this prospectus, you should rely on the information contained in the document that was filed later.

This prospectus incorporates by reference the documents listed below that we previously have filed with the SEC and any additional documents that we may file with the SEC (File No.000-21429) under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this prospectus and the termination of the offering of the securities. These documents contain important information about us.

1. Our Annual Report on Form 10-K for the year ended December 31, 2006 filed with the Commission on March 12, 2007;

2. Our Quarterly Report on Form 10-Q for the period ended March 31, 2007, filed with the Commission on May 10, 2007;

3. Our Current Reports on Form 8-K filed with the Commission on January 19, 2007, February 1, 2007, March 7, 2007, March 28, 2007 and April 27, 2007; and

4. The description of our common stock contained in our Registration Statement on Form 8-A filed with the SEC on September 25, 1996, including any amendment or report filed for the purpose of updating such description.

You can obtain a copy of any or all of the documents, at no cost, by requesting them in writing, by email or by telephone at the following address:

William B. Boni, Vice President,
Investor Relations and Corporate Communications
ArQule, Inc.
19 Presidential Way
Woburn, MA 01801
(781) 994-0300
wboni@arqule.com

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement under the Securities Act that registers the distribution of the securities offered under this prospectus. The registration statement, including the attached exhibits and schedules and the information incorporated by reference, contains additional relevant information about us and the securities. The rules and regulations of the SEC allow us to omit from this prospectus certain information included in the registration statement.

In addition, we file annual, quarterly and special reports, proxy statements and other information with the SEC. You may read and copy this information and the registration statement at the SEC public reference room located at 107 F Street, N.E., Washington D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the public reference room.

In addition, any information we file with the SEC, including the documents incorporated by reference into this prospectus, is also available on the SEC's website at http://www.sec.gov. We also maintain a web site at http://www.arqule.com, which provides additional information about our company and through which you can also access our SEC filings. The information set forth on our web site is not part of this prospectus.