AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION ON JULY 27, 2004

REGISTRATION NO. 333-111821

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

AMENDMENT NO. 5 TO

FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

LEXICON GENETICS INCORPORATED
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

DELAWARE	76-0474169
(STATE OR OTHER JURISDICTION OF INCORPORATION OR ORGANIZATION)	(I.R.S. EMPLOYER IDENTIFICATION NUMBER)

8800 TECHNOLOGY FOREST PLACE
THE WOODLANDS, TEXAS 77381
(281) 863-3000
(ADDRESS, INCLUDING ZIP CODE, AND TELEPHONE NUMBER, INCLUDING AREA CODE, OF REGISTRANT'S PRINCIPAL EXECUTIVE OFFICES)

ARTHUR T. SANDS, M.D., PH.D.
PRESIDENT AND CHIEF EXECUTIVE OFFICER
8800 TECHNOLOGY FOREST PLACE
THE WOODLANDS, TEXAS 77381
(281) 863-3000

(NAME, ADDRESS, INCLUDING ZIP CODE, AND TELEPHONE NUMBER, INCLUDING AREA CODE, OF AGENT FOR SERVICE)

COPIES TO:

DAVID P. OELMAN	JEFFREY L. WADE
VINSON & ELKINS L.L.P.	EXECUTIVE VICE PRESIDENT AND GENERAL COUNSEL
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HOUSTON, TEXAS 77002-6760	THE WOODLANDS, TEXAS 77381
(713) 758-3708	(281) 863-3000

APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC:
From time to time after this registration statement becomes effective, subject to market conditions and other factors.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, check the following box.[ ]

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. [X]

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.[ ]

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. [ ]

If delivery of the Prospectus is expected to be made pursuant to Rule 434, please check the following box.[ ]

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT WHICH SPECIFICALLY STATES THAT THIS REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(A) OF THE SECURITIES ACT OF 1933, AS AMENDED, OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(a), MAY DETERMINE.

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THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. THE SELLING STOCKHOLDER MAY NOT SELL THESE SECURITIES UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THIS PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES AND IT IS NOT SOLICITING AN OFFER TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

SUBJECT TO COMPLETION, DATED JULY 27, 2004

3,500,000 SHARES

[LEXICON LOGO]

LEXICON GENETICS INCORPORATED

COMMON STOCK

This prospectus relates to the offer and sale of previously issued shares of our common stock by a selling stockholder. The selling stockholder is offering up to 3,500,000 shares of our common stock. See "Selling Stockholder" beginning on page 17.

We will not receive any proceeds from the sale of the shares offered by the selling stockholder.

The selling stockholder may offer the shares from time to time through public or private transactions at prevailing market prices, at prices related to prevailing market prices or at privately negotiated prices.

Our common stock is listed on The Nasdaq National Market under the symbol "LEXG". The last reported sale price on July 23, 2004 was $5.99 per share.

INVESTING IN THE COMMON STOCK INVOLVES RISKS. SEE "RISK FACTORS" BEGINNING ON PAGE 5.

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

The date of this prospectus is July 27, 2004.

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GENERAL

Lexicon Genetics is a biopharmaceutical company focused on the discovery of breakthrough treatments for human disease. We use technology that enables us to disrupt, or "knock out," the function of a gene to systematically discover the physiological functions of genes in mice and to identify which corresponding human genes encode potential targets for pharmaceutical development, or drug targets. For those targets that we consider to have high pharmaceutical value, we engage in programs for the discovery and development of potential small molecule, antibody and protein drugs. Our physiology-based approach to understanding gene function and our use of mouse models in our drug discovery efforts allow us to make highly-informed decisions throughout the drug discovery and development process, which we believe will increase our likelihood of success in discovering breakthrough therapeutics.

We are using our gene knockout technology to discover the physiological functions of 5,000 genes from the human genome that belong to gene families that we consider to be pharmaceutically important. Our state-of-the-art animal facilities enable us to capitalize on our gene knockout and physiological analysis technologies by generating knockout mice and analyzing the physiological function of genes on a large scale. Using this physiological information, we select targets for our drug discovery programs that, when knocked out, exhibit favorable therapeutic profiles with potential for addressing large medical markets. We focus our discovery efforts in six therapeutic areas - metabolic disorders, cardiovascular disease, cancer, immune system disorders, neurological disorders and ophthalmic disease - and we have established significant internal expertise in each of these areas.

To date, we have advanced more than 40 targets into drug discovery programs. Our most advanced of these programs are in preclinical research. As of the date of this prospectus, none of our programs had yet advanced into clinical development.

We are working both independently and through strategic collaborations and alliances to commercialize our technology and turn our discoveries into drugs. We have established multiple collaborations with leading pharmaceutical and biotechnology companies, as well as research institutes and academic institutions. We are working with Bristol-Myers Squibb Company to discover and develop small molecule drugs in the neuroscience field. We are working with Genentech, Inc. to discover the functions of secreted proteins and potential antibody targets identified through Genentech's internal drug discovery research. We are working with Abgenix, Inc. to discover and develop antibody drugs for drug targets identified in our own research. We are also working with Incyte Corporation to discover and develop protein drugs. In addition, we have established collaborations and license agreements with many other leading pharmaceutical and biotechnology companies under which we receive fees and, in many cases, are eligible to receive milestone and royalty payments, in return for granting access to some of our technologies and discoveries for use in such companies' own drug discovery efforts.

Lexicon Genetics was incorporated in Delaware in July 1995, and commenced operations in September 1995. Our corporate headquarters are located at 8800 Technology Forest Place, The Woodlands, Texas 77381, and our telephone number is (281) 863-3000.

Our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 are made available free of charge on our corporate website located at www.lexicon-genetics.com as soon as reasonably practicable after the filing of those reports with the Securities and Exchange Commission. Information found on our website should not be considered part of this prospectus.

RECENT EVENTS

Bristol-Myers Squibb Alliance. We established a drug discovery alliance with Bristol-Myers Squibb in December 2003 to discover, develop and commercialize small molecule drugs in the neuroscience field. In the alliance, we are contributing a number of neuroscience drug discovery programs at various stages of development. We will continue to use our gene knockout technology to identify additional drug targets with promise in the neuroscience field. For those targets that are selected for the alliance, we and Bristol-Myers Squibb will work together, on an exclusive basis, to identify, characterize and carry out the preclinical development of small molecule drugs, and will share equally both in the costs and in the work attributable to those efforts. As drugs resulting from

the alliance enter clinical trials, Bristol-Myers Squibb will have the first option to assume full responsibility for clinical development and commercialization.

We received an upfront payment of $36 million under the agreement, and will receive a minimum of $30 million in research funding during the initial three years of the agreement. We may receive additional cash payments if we exceed specified research productivity levels. We will also receive clinical and regulatory milestone payments for each drug target for which Bristol-Myers Squibb develops a drug under the alliance and royalties on sales of drugs commercialized by Bristol-Myers Squibb. The target discovery portion of the alliance has a term of three years, subject to Bristol-Myers Squibb's option to extend the discovery portion of the alliance for an additional two years in exchange for further research funding payments.

Synthetic Lease Refinancing. In April 2004, we purchased our facilities in The Woodlands, Texas from the lessor under our synthetic lease. In connection with such purchase, we repaid the $54.8 million funded under the synthetic lease with proceeds from a $34.0 million third-party mortgage financing and $20.8 million in cash. The mortgage has a ten-year term with a 20-year amortization and bears interest at a fixed rate of 8.23%. As a result of the refinancing, all restrictions on the cash and investments that had secured the obligations under the synthetic lease were lifted, leaving a total of $551,000 in restricted investments.

RISK FACTORS

An investment in our common stock involves risks. You should carefully consider the following risk factors, together with all of the other information included in, or incorporated by reference into, this prospectus in evaluating an investment in our common stock. We believe that each of the following risk factors describe material risks to an investment in our common stock. If any of the following risks were to occur, our business, financial condition or results of operations would likely suffer, possibly materially. In that case, the trading price of our common stock could decline and you could lose all or part of your investment.

RISKS RELATED TO OUR COMPANY AND BUSINESS

WE HAVE A HISTORY OF NET LOSSES, AND WE EXPECT TO CONTINUE TO INCUR NET LOSSES AND MAY NOT ACHIEVE OR MAINTAIN PROFITABILITY.

We have incurred net losses since our inception, including net losses of $35.2 million for the year ended December 31, 2001, $59.7 million for the year ended December 31, 2002 and $64.2 million for the year ended December 31, 2003. We incurred net losses of $15.5 million for the quarter ended March 31, 2004. As of March 31, 2004, we had an accumulated deficit of $229.4 million. We are unsure when we will become profitable, if ever. The size of our net losses will depend, in part, on the rate of growth, if any, in our revenues and on the level of our expenses.

We derive substantially all of our revenues from drug discovery alliances, subscriptions to our LexVision database and our OmniBank library and collaborations for the development and, in some cases, analysis of the physiological effects of genes altered in knockout mice and technology licenses, and will continue to do so for the foreseeable future. Our future revenues from alliances, database subscriptions and collaborations are uncertain because our existing agreements have fixed terms or relate to specific projects of limited duration. Our future revenues from technology licenses are uncertain because they depend, in part, on securing new agreements. Our ability to secure future revenue-generating agreements will depend upon our ability to address the needs of our potential future subscribers, collaborators and licensees, and to negotiate agreements that we believe are in our long-term best interests. We may determine that our interests are better served by retaining rights to our discoveries and advancing our therapeutic programs to a later stage, which could limit our near-term revenues. Given the early-stage nature of our operations, we do not currently derive any revenues from sales of pharmaceuticals.

A large portion of our expenses is fixed, including expenses related to facilities, equipment and personnel. In addition, we expect to spend significant amounts to fund research and development and to enhance our core technologies. As a result, we expect that our operating expenses will continue to increase significantly in the near term and, consequently, we will need to generate significant additional revenues to achieve profitability. Even if we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis.

WE WILL NEED ADDITIONAL CAPITAL IN THE FUTURE AND, IF IT IS NOT AVAILABLE, WE WILL HAVE TO CURTAIL OR CEASE OPERATIONS.

As of March 31, 2004, we had cash, cash equivalents and short-term investments (net of restricted cash and investments) of $87.9 million. We anticipate that our existing capital resources and the revenues we expect to derive from drug discovery alliances, subscriptions to our databases, collaborations for the development and, in some cases, analysis of the physiological effects of genes altered in knockout mice and technology licenses will enable us to fund our currently planned operations for approximately the next two years. Our currently planned operations for that time period consist of the continuation of our efforts to discover the physiological functions of 5,000 human genes that we consider to be pharmaceutically important and the expansion of our medicinal chemistry and preclinical research operations in preparation for the initiation of clinical trials. However, we caution you that we may generate less revenues or incur expenses more rapidly than we currently anticipate.

Although difficult to accurately predict, the amount of our future capital requirements will be substantial and will depend on many factors, including:

- our ability to obtain alliance, database subscription, collaboration and technology license agreements;

- the amount and timing of payments under such agreements;

- the level and timing of our research and development expenditures;

- market acceptance of products that we successfully develop and commercially launch; and

- the resources we devote to developing and supporting such products.

Our capital requirements will increase substantially to the extent we advance potential therapeutics into preclinical and clinical development. Our capital requirements will also be affected by any expenditures we make in connection with license agreements and acquisitions of and investments in complementary products and technologies. For all of these reasons, our future capital requirements cannot easily be quantified.

If our capital resources are insufficient to meet future capital requirements, we will have to raise additional funds to continue the development of our technologies and complete the commercialization of products, if any, resulting from our technologies. We cannot be certain that additional financing, whether debt or equity, will be available in amounts or on terms acceptable to us, if at all. We may be unable to raise sufficient additional capital; if so, we will have to curtail or cease operations.

ANY SALE OF ADDITIONAL EQUITY SECURITIES IN THE FUTURE MAY BE DILUTIVE TO OUR STOCKHOLDERS.

If we raise additional capital by issuing equity securities, our then-existing stockholders will experience dilution and the terms of any new equity securities may have preferences over our common stock.

WE ARE AN EARLY-STAGE COMPANY, AND WE MAY NOT SUCCESSFULLY DEVELOP OR COMMERCIALIZE ANY THERAPEUTICS OR DRUG TARGETS THAT WE HAVE IDENTIFIED.

Our business strategy of using our technology platform and, specifically, the discovery of the functions of genes using knockout mice to select promising drug targets and developing and commercializing drugs based on our discoveries, in significant part through collaborations and alliances, is unproven. Our success will depend upon our ability to successfully develop potential therapeutics for drug targets we consider to have pharmaceutical value, whether on our own or through collaborations, and to select an appropriate commercialization strategy for each potential therapeutic we choose to pursue.

Biotechnology and pharmaceutical companies have successfully developed and commercialized only a limited number of genomics-derived pharmaceutical products to date. We have not proven our ability to develop or commercialize therapeutics or drug targets that we identify, nor have we advanced any drug candidates to clinical trials. We do not know that any pharmaceutical products based on our drug target discoveries can be successfully commercialized. In addition, we may experience unforeseen technical complications in the processes we use to generate knockout mice, conduct in vivo analyses, generate compound libraries, develop screening assays for drug targets or conduct screening of compounds against those drug targets. These complications could materially delay or limit the use of those resources, substantially increase the anticipated cost of generating them or prevent us from implementing our processes at appropriate quality and throughput levels. Finally, the information that we learn from knockout mice may prove not to be useful in identifying pharmaceutically-important drug targets or safe and effective therapies.

WE FACE SUBSTANTIAL COMPETITION IN THE DISCOVERY OF THE DNA SEQUENCES OF GENES AND THEIR FUNCTIONS AND IN OUR DRUG DISCOVERY AND PRODUCT DEVELOPMENT EFFORTS.

We face significant competition in each of the aspects of our business from companies such as Human Genome Sciences, Inc., Millennium Pharmaceuticals, Inc., Exelixis, Inc. and other similar companies that engage in programs for the discovery and development of drugs utilizing a genetics-based approach to target discovery and validation.

There are a finite number of genes in the human genome, and we believe that the majority of such genes have been identified and that virtually all will be identified within the next few years. We face substantial competition in our efforts to discover and patent the sequence and other information derived from such genes from entities using

alternative, and in some cases higher volume and larger scale, approaches for the same purpose. These alternative approaches may ultimately prove superior, in some or all respects, to the use of knockout mice.

We also face competition from other companies in our efforts to discover the functions of genes. The Human Genome Project and a large number of universities and other not-for-profit institutions, many of which are funded by the United States and foreign governments, are also conducting research to discover the functions of genes. Competitors could discover and establish patents on genes or gene products that we identify as promising drug targets, which might hinder or prevent our ability to capitalize on such targets.

We face significant competition from other companies, as well as from universities and other not-for-profit institutions, in our drug discovery and product development efforts. Many of our competitors have substantially greater financial, scientific and human resources than we do. As a result, our competitors may succeed in developing products earlier than we do, obtaining regulatory approvals faster than we do and developing products that are more effective or safer than any that we may develop.

WE RELY HEAVILY ON OUR COLLABORATORS TO DEVELOP AND COMMERCIALIZE PHARMACEUTICAL PRODUCTS BASED ON GENES THAT WE IDENTIFY AS PROMISING CANDIDATES FOR DEVELOPMENT AS DRUG TARGETS, AND OUR COLLABORATORS' EFFORTS MAY FAIL TO YIELD PHARMACEUTICAL PRODUCTS ON A TIMELY BASIS, IF AT ALL.

It is our strategy to develop drug candidates on our own as well as developing drug candidates in collaboration with third parties, particularly when such collaborations enable us to obtain access to technology and expertise that we do not possess internally or is complementary to our own.

Since we do not currently possess the resources necessary to develop, obtain approvals for or commercialize potential pharmaceutical products based on all of the genes that we identify as promising candidates for development as drug targets, we must enter into collaborative arrangements to develop and commercialize some of these products. We have limited or no control over the resources that any collaborator may devote to this effort. Any of our present or future collaborators may not perform their obligations as expected. These collaborators may breach or terminate their agreements with us or otherwise fail to conduct product discovery, development or commercialization activities successfully or in a timely manner. Further, our collaborators may elect not to develop pharmaceutical products arising out of our collaborative arrangements or may not devote sufficient resources to the development, approval, manufacture, marketing or sale of these products. If any of these events occurs, we may not be able to develop or commercialize potential pharmaceutical products.

Some of our existing collaboration agreements contain, and collaborations that we enter into in the future may contain, exclusivity agreements or other limitations on our activities. These agreements may have the effect of limiting our flexibility and may cause us to forego attractive business opportunities.

WE RELY ON SEVERAL KEY COLLABORATORS FOR A SIGNIFICANT PORTION OF OUR REVENUES, THE LOSS OF ANY OF WHICH WOULD NEGATIVELY IMPACT OUR BUSINESS TO THE EXTENT SUCH LOSSES ARE NOT OFFSET BY ADDITIONAL COLLABORATORS.

Most of our revenues in a given year have been derived from a limited number of collaborators. For the fiscal year ended December 31, 2003, for example, Incyte Corporation accounted for approximately 23% of our revenues, Amgen, Inc. accounted for approximately 15% of our revenues and Bristol-Myers Squibb Company and Genentech, Inc. each accounted for approximately 14% of our revenues. In general, we cannot predict with certainty which, if any, of our major collaborators will continue to generate revenues for us. If our relationship terminates with any of these collaborators, our revenues will be negatively impacted to the extent such losses are not offset by additional collaboration agreements.

CANCELLATIONS BY OR CONFLICTS WITH OUR COLLABORATORS COULD HARM OUR BUSINESS.

Our alliance and collaboration agreements may not be renewed and may be terminated in the event either party fails to fulfill its obligations under these agreements. Failures to renew or cancellations by collaborators could mean a significant loss of revenues and could harm our reputation in the business and scientific communities.

In addition, we may pursue opportunities in fields that could conflict with those of our collaborators. Moreover, disagreements could arise with our collaborators over rights to our intellectual property or our rights to share in any of the future revenues of compounds or therapeutic approaches developed by our collaborators. These kinds of

disagreements could result in costly and time consuming litigation. Conflicts with our collaborators could reduce our ability to obtain future collaboration agreements and could have a negative impact on our relationship with existing collaborators, materially impairing our business and revenues. Some of our collaborators are also potential competitors or may become competitors in the future. Our collaborators could develop competing products, preclude us from entering into collaborations with their competitors or terminate their agreements with us prematurely. Any of these events could harm our product development efforts.

WE MAY BE UNSUCCESSFUL IN DEVELOPING AND COMMERCIALIZING PHARMACEUTICAL PRODUCTS ON OUR OWN.

Our ability to develop and commercialize pharmaceutical products on our own will depend on our ability to internally develop preclinical, clinical, regulatory and sales and marketing capabilities, or enter into arrangements with third parties to provide these functions. It will be expensive and will require significant time for us to develop these capabilities internally. We may not be successful in developing these capabilities or entering into agreements with third parties on favorable terms, or at all. Further, our reliance upon third parties for these capabilities could reduce our control over such activities and could make us dependent upon these parties. Our inability to develop or contract for these capabilities would significantly impair our ability to develop and commercialize pharmaceutical products.

WE LACK THE CAPABILITY TO MANUFACTURE COMPOUNDS FOR PRECLINICAL STUDIES, CLINICAL TRIALS OR COMMERCIAL SALES AND WILL RELY ON THIRD PARTIES TO MANUFACTURE OUR POTENTIAL PRODUCTS, WHICH MAY HARM OR DELAY OUR PRODUCT DEVELOPMENT AND COMMERCIALIZATION EFFORTS.

We currently do not have the manufacturing capabilities or experience necessary to produce materials for preclinical studies, clinical trials or commercial sales and intend to rely on collaborators and third-party contractors to produce such materials. We will rely on selected manufacturers to deliver materials on a timely basis and to comply with applicable regulatory requirements, including the current Good Manufacturing Practices of the United States Food and Drug Administration, or FDA, which relate to manufacturing and quality control activities. These manufacturers may not be able to produce material on a timely basis or manufacture material at the quality level or in the quantity required to meet our development timelines and applicable regulatory requirements. In addition, there are a limited number of manufacturers that operate under the FDA's current Good Manufacturing Practices and that are capable of producing such materials, and we may experience difficulty finding manufacturers with adequate capacity for our needs. If we are unable to contract for the production of sufficient quantity and quality of materials on acceptable terms, our product development and commercialization efforts may be delayed. Moreover, noncompliance with the FDA's current Good Manufacturing Practices can result in, among other things, fines, injunctions, civil and criminal penalties, product recalls or seizures, suspension of production, failure to obtain marketing approval and withdrawal, suspension or revocation of marketing approvals.

WE MAY ENGAGE IN FUTURE ACQUISITIONS, WHICH MAY BE EXPENSIVE AND TIME CONSUMING AND FROM WHICH WE MAY NOT REALIZE ANTICIPATED BENEFITS.

We may acquire additional businesses, technologies and products if we determine that these businesses, technologies and products complement our existing technology or otherwise serve our strategic goals. We currently have no commitments or agreements with respect to any acquisitions. If we do undertake any transactions of this sort, the process of integrating an acquired business, technology or product may result in operating difficulties and expenditures and may not be achieved in a timely and non-disruptive manner, if at all, and may absorb significant management attention that would otherwise be available for ongoing development of our business. If we fail to integrate acquired businesses, technologies or products effectively or if key employees of an acquired business leave, the anticipated benefits of the acquisition would be jeopardized. Moreover, we may never realize the anticipated benefits of any acquisition, such as increased revenues and earnings or enhanced business synergies. Future acquisitions could result in potentially dilutive issuances of our equity securities, the incurrence of debt and contingent liabilities and amortization expenses related to intangible assets, which could materially impair our results of operations and financial condition.

IF WE LOSE OUR KEY PERSONNEL OR ARE UNABLE TO ATTRACT AND RETAIN ADDITIONAL PERSONNEL, WE MAY BE UNABLE TO PURSUE COLLABORATIONS OR DEVELOP OUR OWN PRODUCTS.

We are highly dependent on Arthur T. Sands, M.D., Ph.D., our president and chief executive officer, as well as other principal members of our management and scientific staff. We do not carry key man insurance on Dr. Sands

or any other key personnel. The loss of any of these personnel could negatively impact our business, financial condition or results of operations and could inhibit our product development and commercialization efforts. Although we have entered into employment agreements with some of our key personnel, including Dr. Sands, these employment agreements are all at will. In addition, not all key personnel have employment agreements.

Recruiting and retaining qualified scientific personnel to perform future research and development work will be critical to our success. Competition for experienced scientists is intense. Failure to recruit and retain scientific personnel on acceptable terms could prevent us from achieving our business objectives.

BECAUSE ALL OF OUR TARGET VALIDATION OPERATIONS ARE LOCATED AT A SINGLE FACILITY, THE OCCURRENCE OF A DISASTER COULD SIGNIFICANTLY DISRUPT OUR BUSINESS.

Our OmniBank mouse clone library and its backup are stored in liquid nitrogen freezers located at our facility in The Woodlands, Texas, and our knockout mouse research operations are carried out entirely at the same facility. While we have developed redundant and emergency backup systems to protect these resources and the facilities in which they are stored, they may be insufficient in the event of a severe fire, flood, hurricane, tornado, mechanical failure or similar disaster. If such a disaster significantly damages or destroys the facility in which these resources are maintained, our business could be disrupted until we could regenerate the affected resources and, as a result, our stock price could decline. Our business interruption insurance may not be sufficient to compensate us in the event of a major interruption due to such a disaster.

OUR QUARTERLY OPERATING RESULTS HAVE BEEN AND LIKELY WILL CONTINUE TO FLUCTUATE, AND WE BELIEVE THAT QUARTER-TO-QUARTER COMPARISONS OF OUR OPERATING RESULTS ARE NOT A GOOD INDICATION OF OUR FUTURE PERFORMANCE.

Our operating results and, in particular, our ability to generate additional revenues are dependent on many factors, including:

- our ability to establish new database subscriptions, research collaborations and technology licenses, and the timing of such arrangements;

- the expiration or other termination of database subscriptions and research collaborations with our collaborators, which may not be renewed or replaced;

- the success rate of our discovery efforts leading to opportunities for new research collaborations and licenses, as well as milestone payments and royalties;

- the timing and willingness of our collaborators to commercialize pharmaceutical products that would result in milestone payments and royalties; and

- general and industry-specific economic conditions, which may affect our and our collaborators' research and development expenditures.

Because of these and other factors, including the risks and uncertainties described in this section, our quarterly operating results have fluctuated in the past and are likely to do so in the future. Due to the likelihood of fluctuations in our revenues and expenses, we believe that quarter-to-quarter comparisons of our operating results are not a good indication of our future performance.

RISKS RELATED TO OUR INDUSTRY

OUR ABILITY TO PATENT OUR INVENTIONS IS UNCERTAIN BECAUSE PATENT LAWS AND THEIR INTERPRETATION ARE HIGHLY UNCERTAIN AND SUBJECT TO CHANGE.

The patent positions of biotechnology firms generally are highly uncertain and involve complex legal and factual questions that will determine who has the right to develop or use a particular technology or product. No clear policy has emerged regarding the scope of protection provided in biotechnology patents. The biotechnology patent situation outside the United States is similarly uncertain. Changes in, or different interpretations of, patent laws in the United States or other countries might allow others to use our inventions or to develop and

commercialize any technologies or products that we may develop without any compensation to us. We anticipate that these uncertainties will continue for a significant period of time.

OUR PATENT APPLICATIONS MAY NOT RESULT IN PATENT RIGHTS AND, AS A RESULT, THE PROTECTION AFFORDED TO OUR SCIENTIFIC DISCOVERIES MAY BE INSUFFICIENT.

Our disclosures in our patent applications may not be sufficient to meet the statutory requirements for patentability. Our ability to obtain patent protection based on genes or gene sequences will depend, in part, upon identification of a use for the gene or gene sequences sufficient to meet the statutory requirements that an invention have utility and that a patent application enable one to make and use the invention. While the United States Patent and Trademark Office has issued guidelines for the examination of patent applications claiming gene sequences, their therapeutic uses and novel proteins encoded by such genes, the impact of these guidelines is uncertain and may delay or negatively affect our patent position. Furthermore, biologic data in addition to that obtained by our current technologies may be required for issuance of patents covering any potential human therapeutic products that we may develop. If required, obtaining such biologic data could delay, add substantial costs to, or affect our ability to obtain patent protection for such products. There can be no assurance that the disclosures in our current or future patent applications, including those we may file with our collaborators, will be sufficient to meet these requirements. Even if patents are issued, there may be current or future uncertainty as to the scope of the coverage or protection provided by any such patents.

Some court decisions indicate that disclosure of a partial sequence may not be sufficient to support the patentability of a full-length sequence. These decisions have been confirmed by recent pronouncements of the United States Patent and Trademark Office. We believe that these court decisions and the uncertain position of the United States Patent and Trademark Office present a significant risk that the United States Patent and Trademark Office will not issue patents based on patent disclosures limited to partial gene sequences. In addition, we are uncertain about the scope of the coverage, enforceability and commercial protection provided by any patents issued primarily on the basis of gene sequence information.

IF OTHER COMPANIES AND INSTITUTIONS OBTAIN PATENTS RELATING TO OUR DRUG TARGET OR PRODUCT CANDIDATE DISCOVERIES, WE MAY BE UNABLE TO OBTAIN PATENTS FOR OUR INVENTIONS BASED UPON THOSE DISCOVERIES AND MAY BE BLOCKED FROM USING OR DEVELOPING SOME OF OUR TECHNOLOGIES AND PRODUCTS.

Many other entities have filed or may file patent applications on genes or gene sequences, uses of those genes or gene sequences, gene products and drug targets, assays for identifying potential therapeutic products, potential therapeutic products and methods of treatment which are identical or similar to some of our filings. Some of these applications attempt to assign biologic function to the genes and proteins based on predictions of function based upon similarity to other genes and proteins or patterns of gene expression. There is the significant possibility that patents claiming the functional uses of such genes and gene products will be issued to our competitors based on such information. If any such patents are issued to other entities, we will be unable to obtain patent protection for the same or similar discoveries that we make. Moreover, we may be blocked from using or developing some of our existing or proposed technologies and products, or may be required to obtain a license that may not be available on reasonable terms, if at all.

Alternatively, the United States Patent and Trademark Office could decide competing patent claims in an interference proceeding. Any such proceeding would be costly, and we may not prevail. In this event, the prevailing party may require us or our collaborators to stop using a particular technology or pursuing a potential product or may require us to negotiate a license arrangement to do so. We may not be able to obtain a license from the prevailing party on acceptable terms, or at all.

The Human Genome Project, as well as many companies and institutions, have identified genes and deposited partial gene sequences in public databases and are continuing to do so. The entire human genome and the entire mouse genome are now publicly known. These public disclosures might limit the scope of our claims or make unpatentable subsequent patent applications on partial or full-length genes or their uses.

ISSUED OR PENDING PATENTS MAY NOT FULLY PROTECT OUR DISCOVERIES, AND OUR COMPETITORS MAY BE ABLE TO COMMERCIALIZE TECHNOLOGIES OR PRODUCTS SIMILAR TO THOSE COVERED BY OUR ISSUED OR PENDING PATENTS.

Pending patent applications do not provide protection against competitors because they are not enforceable until they issue as patents. Issued patents may not provide commercially meaningful protection. If anyone infringes upon our or our collaborators' patent rights, enforcing these rights may be difficult, costly and time-consuming and, as a result, it may not be cost-effective or otherwise expedient to pursue litigation to enforce those patent rights. Others may be able to design around these patents or develop unique products providing effects similar to any products that we may develop. Other companies or institutions may challenge our or our collaborators' patents or independently develop similar products that could result in an interference proceeding in the United States Patent and Trademark Office or a legal action.

In addition, others may discover uses for genes, drug targets or therapeutic products other than those covered in our issued or pending patents, and these other uses may be separately patentable. Even if we have a patent claim on a particular gene, drug target or therapeutic product, the holder of a patent covering the use of that gene, drug target or therapeutic product could exclude us from selling a product that is based on the same use of that product.

WE MAY BE INVOLVED IN PATENT LITIGATION AND OTHER DISPUTES REGARDING INTELLECTUAL PROPERTY RIGHTS AND MAY REQUIRE LICENSES FROM THIRD PARTIES FOR OUR DISCOVERY AND DEVELOPMENT AND PLANNED COMMERCIALIZATION ACTIVITIES. WE MAY NOT PREVAIL IN ANY SUCH LITIGATION OR OTHER DISPUTE OR BE ABLE TO OBTAIN REQUIRED LICENSES.

Our discovery and development efforts as well as our potential products and those of our collaborators may give rise to claims that they infringe the patents of others. This risk will increase as the biotechnology industry expands and as other companies and institutions obtain more patents covering the sequences, functions and uses of genes and the drug targets they encode. We are aware that other companies and institutions have conducted research on many of the same targets that we have identified and have filed patent applications potentially covering many of the genes and encoded drug targets that are the focus of our drug discovery programs. In some cases, patents have issued from these applications. In addition, many companies and institutions have well-established patent portfolios directed to common techniques, methods and means of developing, producing and manufacturing pharmaceutical products. Other companies or institutions could bring legal actions against us or our collaborators for damages or to stop us or our collaborators from engaging in certain discovery or development activities or from manufacturing and marketing any resulting therapeutic products. If any of these actions are successful, in addition to our potential liability for damages, these entities would likely require us or our collaborators to obtain a license in order to continue engaging in the infringing activities or to manufacture or market the resulting therapeutic products or may force us to terminate such activities or manufacturing and marketing efforts.

We may need to pursue litigation against others to enforce our patents and intellectual property rights and may be the subject of litigation brought by third parties to enforce their patent and intellectual property rights. In addition, we may become involved in litigation based on intellectual property indemnification undertakings that we have given to certain of our collaborators. Patent litigation is expensive and requires substantial amounts of management attention. The eventual outcome of any such litigation is uncertain and involves substantial risks.

We believe that there will continue to be significant litigation in our industry regarding patent and other intellectual property rights. We have expended and many of our competitors have expended and are continuing to expend significant amounts of time, money and management resources on intellectual property litigation. If we become involved in future intellectual property litigation, it could consume a substantial portion of our resources and could negatively affect our results of operations.

Furthermore, in light of recent United States Supreme Court precedent, our ability to enforce our patents against state agencies, including state sponsored universities and research laboratories, is limited by the Eleventh Amendment to the United States Constitution. In addition, opposition by academicians and the government may hamper our ability to enforce our patents against academic or government research laboratories. Finally, enforcement of our patents may cause our reputation in the academic community to be injured.

WE USE INTELLECTUAL PROPERTY THAT WE LICENSE FROM THIRD PARTIES. IF WE DO NOT COMPLY WITH THESE LICENSES, WE COULD LOSE OUR RIGHTS UNDER THEM.

We rely, in part, on licenses to use certain technologies that are important to our business, such as certain gene targeting technology licensed from GenPharm International, Inc. and conditional knockout technology licensed from DuPont Pharmaceuticals Company. We do not own the patents that underlie these licenses. Most of these licenses, however, including those from GenPharm and DuPont, have terms that extend for the life of the licensed patents. Our rights to use these technologies and practice the inventions claimed in the licensed patents are subject to our abiding by the terms of those licenses and the licensors not terminating them. We are currently in compliance with all requirements of these licenses. In many cases, we do not control the filing, prosecution or maintenance of the patent rights to which we hold licenses and rely upon our licensors to prosecute infringement of those rights. The scope of our rights under our licenses may be subject to dispute by our licensors or third parties.

WE HAVE NOT SOUGHT PATENT PROTECTION OUTSIDE OF THE UNITED STATES FOR SOME OF OUR INVENTIONS, AND SOME OF OUR LICENSED PATENTS ONLY PROVIDE COVERAGE IN THE UNITED STATES. AS A RESULT, OUR INTERNATIONAL COMPETITORS COULD BE GRANTED FOREIGN PATENT PROTECTION WITH RESPECT TO OUR DISCOVERIES.

We have decided not to pursue patent protection with respect to some of our inventions outside the United States, both because we do not believe it is cost-effective and because of confidentiality concerns. Accordingly, our international competitors could develop, and receive foreign patent protection for, genes or gene sequences, uses of those genes or gene sequences, gene products and drug targets, assays for identifying potential therapeutic products, potential therapeutic products and methods of treatment for which we are seeking United States patent protection. In addition, most of our gene trapping patents and our licensed gene targeting patents cover only the United States and do not apply to discovery activities conducted outside of the United States or, in some circumstances, to importing into the United States products developed using this technology.

WE MAY BE UNABLE TO PROTECT OUR TRADE SECRETS.

Significant aspects of our intellectual property are not protected by patents. As a result, we seek to protect the proprietary nature of this intellectual property as trade secrets through proprietary information agreements and other measures. While we have entered into proprietary information agreements with all of our employees, consultants, advisers and collaborators, we may not be able to prevent the disclosure of our trade secrets. In addition, other companies or institutions may independently develop substantially equivalent information and techniques.

OUR EFFORTS TO DISCOVER, EVALUATE AND VALIDATE POTENTIAL TARGETS FOR DRUG INTERVENTION AND OUR DRUG DISCOVERY PROGRAMS ARE SUBJECT TO EVOLVING DATA AND OTHER RISKS INHERENT IN THE DRUG DISCOVERY PROCESS.

We are employing our knockout technology and integrated drug discovery platform to systematically discover, evaluate and validate potential targets for drug intervention and to develop drugs to address those targets. The drug discovery and development process involves significant risks of delay or failure due, in part, to evolving data and the uncertainties involved with the applications of new technologies. As we refine and advance our efforts, it is likely that the resulting data will cause us to change our targets from time to time and, therefore, that the targets that we believe at any time to be promising may prove not to be so. These developments can occur at any stage of the drug discovery and development process.

OUR INDUSTRY IS SUBJECT TO EXTENSIVE AND UNCERTAIN GOVERNMENT REGULATORY REQUIREMENTS, WHICH COULD SIGNIFICANTLY HINDER OUR ABILITY, OR THE ABILITY OF OUR COLLABORATORS, TO OBTAIN, IN A TIMELY MANNER OR AT ALL, GOVERNMENT APPROVAL OF PRODUCTS BASED ON GENES THAT WE IDENTIFY, OR TO COMMERCIALIZE SUCH PRODUCTS.

We or our collaborators must obtain approval from the FDA in order to conduct clinical trials and sell our future product candidates in the United States and from foreign regulatory authorities in order to conduct clinical trials and sell our future product candidates in other countries. In order to obtain regulatory approvals for the commercial sale of any products that we may develop, we will be required to complete extensive clinical trials in humans to demonstrate the safety and efficacy of our drug candidates. We or our collaborators may not be able to obtain authority from the FDA or other equivalent foreign regulatory agencies to initiate or complete any clinical trials. In addition, we have limited internal resources for making regulatory filings and dealing with regulatory authorities.

The results from preclinical testing of a drug candidate that is under development may not be predictive of results that will be obtained in human clinical trials. In addition, the results of early human clinical trials may not be predictive of results that will be obtained in larger scale, advanced stage clinical trials. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials, even after achieving positive results in earlier trials. Negative or inconclusive results from a preclinical study or a clinical trial could cause us, one of our collaborators or the FDA to terminate a preclinical study or clinical trial or require that we repeat it. Furthermore, we, one of our collaborators or a regulatory agency with jurisdiction over the trials may suspend clinical trials at any time if the subjects or patients participating in such trials are being exposed to unacceptable health risks or for other reasons.

Any preclinical or clinical test may fail to produce results satisfactory to the FDA or foreign regulatory authorities. Preclinical and clinical data can be interpreted in different ways, which could delay, limit or prevent regulatory approval. The FDA or institutional review boards at the medical institutions and healthcare facilities where we sponsor clinical trials may suspend any trial indefinitely if they find deficiencies in the conduct of these trials. Clinical trials must be conducted in accordance with the FDA's current Good Clinical Practices. The FDA and these institutional review boards have authority to oversee our clinical trials, and the FDA may require large numbers of test subjects. In addition, we must manufacture, or contract for the manufacture of, the product candidates that we use in our clinical trials under the FDA's current Good Manufacturing Practices.

The rate of completion of clinical trials is dependent, in part, upon the rate of enrollment of patients. Patient accrual is a function of many factors, including the size of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the study, the nature of the study, the existence of competitive clinical trials and the availability of alternative treatments. Delays in planned patient enrollment may result in increased costs and prolonged clinical development, which in turn could allow our competitors to bring products to market before we do and impair our ability to commercialize our products or potential products.

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

IF OUR POTENTIAL PRODUCTS RECEIVE REGULATORY APPROVAL, WE OR OUR COLLABORATORS WILL REMAIN SUBJECT TO EXTENSIVE AND RIGOROUS ONGOING REGULATION.

If we or our collaborators obtain initial regulatory approvals from the FDA or foreign regulatory authorities for any products that we may develop, we or our collaborators will be subject to extensive and rigorous ongoing domestic and foreign government regulation of, among other things, the research, development, testing, manufacture, labeling, promotion, advertising, distribution and marketing of our products and product candidates. The failure to comply with these requirements or the identification of safety problems during commercial marketing could lead to the need for product marketing restrictions, product withdrawal or recall or other voluntary or regulatory action, which could delay further marketing until the product is brought into compliance. The failure to comply with these requirements may also subject us or our collaborators to stringent penalties.

Moreover, several of our product development areas involve relatively new technology and have not been the subject of extensive product testing in humans. The regulatory requirements governing these products and related clinical procedures remain uncertain and the products themselves may be subject to substantial review by foreign governmental regulatory authorities that could prevent or delay approval in those countries. Regulatory requirements ultimately imposed on any products that we may develop could limit our ability to test, manufacture and, ultimately, commercialize such products.

THE UNCERTAINTY OF PHARMACEUTICAL PRICING AND REIMBURSEMENT MAY DECREASE THE COMMERCIAL POTENTIAL OF ANY PRODUCTS THAT WE OR OUR COLLABORATORS MAY DEVELOP AND AFFECT OUR ABILITY TO RAISE CAPITAL.

Our ability and the ability of our collaborators to successfully commercialize pharmaceutical products will depend, in part, on the extent to which reimbursement for the cost of such products and related treatment will be available from government health administration authorities, private health coverage insurers and other organizations. The pricing, availability of

distribution channels and reimbursement status of newly approved

pharmaceutical products is highly uncertain. As a result, adequate third-party coverage may not be available for us to maintain price levels sufficient for realization of an appropriate return on our investment in product discovery and development.

In certain foreign markets, pricing or profitability of healthcare products is subject to government control. In the United States, there have been, and we expect that there will continue to be, a number of federal and state proposals to implement similar governmental control. In addition, an increasing emphasis on managed care in the United States has increased and will continue to increase the pressure on pharmaceutical pricing. While we cannot predict the adoption of any such legislative or regulatory proposals or the effect such proposals or managed care efforts may have on our business, the announcement of such proposals or efforts could harm our ability to raise capital, and the adoption of such proposals or efforts could harm our results of operations. Further, to the extent that such proposals or efforts harm other pharmaceutical companies that are our prospective collaborators, our ability to establish corporate collaborations would be impaired. In addition, third-party payers are increasingly challenging the prices charged for medical products and services. We do not know whether consumers, third-party payers and others will consider any products that we or our collaborators develop to be cost-effective or that reimbursement to the consumer will be available or will be sufficient to allow us or our collaborators to sell such products on a profitable basis.

WE USE HAZARDOUS CHEMICALS AND RADIOACTIVE AND BIOLOGICAL MATERIALS IN OUR BUSINESS; ANY DISPUTES RELATING TO IMPROPER HANDLING, STORAGE OR DISPOSAL OF THESE MATERIALS COULD BE TIME CONSUMING AND COSTLY.

Our research and development processes involve the use of hazardous materials, including chemicals and radioactive and biological materials. Our operations also produce hazardous waste products. We cannot eliminate the risk of accidental contamination or discharge or any resultant injury from these materials. Federal, state and local laws and regulations govern the use, manufacture, storage, handling and disposal of these materials. We could be subject to civil damages in the event of an improper or unauthorized release of, or exposure of individuals to, these hazardous materials. In addition, claimants may sue us for injury or contamination that results from our use or the use by third parties of these materials, and our liability may exceed our total assets. Compliance with environmental laws and regulations may be expensive, and current or future environmental regulations may impair our research, development or production efforts. We do not currently maintain insurance coverage that would cover these types of environmental liabilities.

WE MAY BE SUED FOR PRODUCT LIABILITY.

We or our collaborators may be held liable if any product that we or our collaborators develop, or any product that is made with the use or incorporation of any of our technologies, causes injury or is found otherwise unsuitable during product testing, manufacturing, marketing or sale. Although we currently have and intend to maintain product liability insurance, this insurance may become prohibitively expensive or may not fully cover our potential liabilities. Our inability to obtain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims could prevent or inhibit the commercialization of products developed by us or our collaborators. If we are sued for any injury caused by our or our collaborators' products, our liability could exceed our total assets.

PUBLIC PERCEPTION OF ETHICAL AND SOCIAL ISSUES MAY LIMIT OR DISCOURAGE THE USE OF OUR TECHNOLOGIES, WHICH COULD REDUCE OUR REVENUES.

Our success will depend, in part, upon our ability to develop products discovered through our knockout mouse technologies. Governmental authorities could, for ethical, social or other purposes, limit the use of genetic processes or prohibit the practice of our knockout mouse technologies. Claims that genetically engineered products are unsafe for consumption or pose a danger to the environment may influence public perceptions. The subject of genetically modified organisms, like knockout mice, has received negative publicity and aroused public debate in some countries. Ethical and other concerns about our technologies, particularly the use of genes from nature for commercial purposes and the products resulting from this use, could reduce the likelihood of maintaining market acceptance of our technologies.

RISKS RELATED TO THIS OFFERING

OUR STOCK PRICE COULD BE EXTREMELY VOLATILE, AND YOU MAY NOT BE ABLE TO RESELL YOUR SHARES AT OR ABOVE YOUR PURCHASE PRICE.

The stock market has experienced significant price and volume fluctuations, and the market prices of technology companies, particularly life science companies such as ours, have been highly volatile. Since January 1, 2001, the market price of our common stock has ranged from a high of $17.25 on January 2, 2001 to a low of $2.97 on October 7, 2002. In addition, broad market and industry fluctuations that are not within our control may significantly lower the trading price of our common stock. As a result, you may not be able to resell your shares at or above your purchase price.

CONCENTRATION OF OWNERSHIP AMONG OUR DIRECTORS AND EXECUTIVE OFFICERS ENABLES THEM TO SIGNIFICANTLY INFLUENCE IMPORTANT CORPORATE DECISIONS.

Our directors and executive officers beneficially own, or have voting rights with respect to, approximately 12.9% of our outstanding common stock. These stockholders as a group will be able to exert significant influence on the election of our directors and officers, the management and affairs of our company and the outcome of most matters requiring the approval of our stockholders, including any merger, consolidation or sale of all or substantially all of our assets and any other significant corporate transaction. This concentration of ownership may also prevent a change of control of our company at a premium price if these stockholders oppose it.

PROVISIONS CONTAINED IN OUR CHARTER DOCUMENTS AND DELAWARE LAW MAY PREVENT OR FRUSTRATE ATTEMPTS BY OUR STOCKHOLDERS TO CHANGE OUR MANAGEMENT AND MAY INHIBIT A TAKEOVER ATTEMPT, WHICH COULD REDUCE OR ELIMINATE THE LIKELIHOOD OF A CHANGE OF CONTROL TRANSACTION AND, THEREFORE, THE ABILITY OF OUR STOCKHOLDERS TO SELL THEIR SHARES FOR A PREMIUM.

Provisions in our corporate charter and bylaws and applicable provisions of the Delaware General Corporation Law may make it more difficult for a third party to acquire control of us without the approval of our board of directors. These provisions may also prevent or frustrate attempts by our stockholders to replace or remove our management. These provisions include:

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

These provisions may discourage transactions that otherwise could involve the payment of a premium over prevailing market prices of our common stock. In addition, any efforts by stockholders to replace or remove the members of our board of directors would take a minimum of three years.

THE AVAILABILITY OF SHARES OF OUR COMMON STOCK FOR FUTURE SALE COULD DEPRESS OUR STOCK PRICE.

As of March 30, 2004, we had outstanding an aggregate of 63,313,965 shares of common stock, assuming no exercise of outstanding options or warrants. Of these shares, 56,750,574 shares are freely tradable or may be sold under an effective registration statement. The holders of the remaining 6,563,391 shares have demand and piggyback registration rights with respect to such shares.

Sales of a substantial number of shares of our common stock in the public markets following this offering, or the perception that such sales might occur, could significantly lower the price of our common stock or could impair our future ability to obtain capital through offerings of our equity securities.

OUR FORMER INDEPENDENT PUBLIC ACCOUNTANT, ARTHUR ANDERSEN LLP, WAS FOUND GUILTY OF A FEDERAL OBSTRUCTION OF JUSTICE CHARGE, AND YOU MAY BE UNABLE TO EXERCISE EFFECTIVE REMEDIES AGAINST IT IN ANY LEGAL ACTION.

Our former independent public accountant, Arthur Andersen LLP, provided us with auditing services for prior fiscal periods through December 31, 2001, including issuing an audit report with respect to our audited consolidated financial statements for the year ended December 31, 2001 included in our Annual Report on Form 10-K for the year ended December 31, 2003 and incorporated by reference in this prospectus. On June 15, 2002, a jury in Houston, Texas found Arthur Andersen LLP guilty of a federal obstruction of justice charge arising from the federal government's investigation of Enron Corp. On August 31, 2002, Arthur Andersen LLP ceased practicing before the Securities and Exchange Commission, or the SEC.

We were unable to obtain Arthur Andersen LLP's consent to include its report with respect to our audited consolidated financial statements for the year ended December 31, 2001 in our Annual Report on Form 10-K for the year ended December 31, 2003 or to incorporate by reference such report in this prospectus. Rule 437a under the Securities Act of 1933, or the Securities Act, permits us to dispense with the requirement to file their consent. As a result, you may not have an effective remedy against Arthur Andersen LLP in connection with a material misstatement or omission with respect to our audited consolidated financial statements that are incorporated by reference in this prospectus or any other filing we may make with the SEC, including, with respect to this offering or any other offering registered under the Securities Act, any claim under Section 11 of the Securities Act. In addition, even if you were able to assert such a claim, as a result of its conviction and other lawsuits, Arthur Andersen LLP may fail or otherwise have insufficient assets to satisfy claims made by investors or by us that might arise under federal securities laws or otherwise relating to any alleged material misstatement or omission with respect to our audited consolidated financial statements.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference into this prospectus contain certain information regarding our financial projections, plans and strategies that are forward-looking statements within the meaning of Section 27A of the Securities Act and 21E of the Securities Exchange Act of 1934. We have attempted to identify forward-looking statements by terminology including "anticipate," "believe," "can," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "should" or "will" or the negative of these terms or other comparable terminology. These statements, which are only predictions and involve known and unknown risks, uncertainties and other important factors may include, among other things, statements which address our strategy and operating performance, events or developments that we expect or anticipate will occur in the future, such as projections of our future results of operations or of our financial condition, the status of any collaborative agreements, our research and development efforts and anticipated trends in our business.

We have based these forward-looking statements on our current expectations and projections about future events. However, there may be events in the future that we are not able to predict accurately or which we do not fully control that could cause actual results to differ materially from those expressed or implied in our forward-looking statements. Many important factors could cause actual results to differ materially from those expressed or implied by these forward-looking statements, including those discussed under "Risk Factors" in this prospectus and other sections of the documents incorporated by reference into this prospectus. We undertake no obligation to publicly release any revisions to the forward-looking statements or reflect events or circumstances after the date of this prospectus.

USE OF PROCEEDS

All of the shares offered by this prospectus are being offered and sold by the selling stockholder. We will not receive any proceeds from the sale of the shares of common stock offered by the selling stockholder.

We will pay all expenses for the registration of the selling stockholder's offer and sale of the shares of common stock covered by this prospectus, including registration fees, the costs and expenses of our counsel and independent public accountants and the reasonable fees of one counsel for the selling stockholder. The selling stockholder will pay any underwriting discounts and commissions, brokerage fees and other similar expenses which it incurs in selling shares of our common stock.

SELLING STOCKHOLDER

We issued the shares of common stock covered by this prospectus in private placements to Gordon A. Cain completed in the period from September 1995 to July 1997. Mr. Cain, who served as a member of our board of directors until his death in October 2002, subsequently transferred some of the shares by gift to The Gordon and Mary Cain Foundation. On December 23, 2003 and January 7, 2004, Acqua Wellington Opportunity I Limited purchased the shares offered by this prospectus from the Estate of Gordon A. Cain and The Gordon and Mary Cain Foundation in private placements that were exempt from registration under the Securities Act of 1933.

The selling stockholder exercised its rights to cause us to register the offer and sale of the shares of common stock described in this prospectus under a registration rights agreement in which we agreed to use commercially reasonable best efforts to keep the registration statement effective for five years or until the distribution contemplated by the registration statement is complete. All of the shares to be offered by the selling stockholder using this prospectus were originally issued by us in transactions exempt from the registration requirements of the Securities Act of 1933.

The selling stockholder, or its donees of 500 or fewer shares, may offer the shares of common stock covered by this prospectus from time to time. Our registration of the selling stockholder's offer and sale of such shares does not necessarily mean that the selling stockholder will sell any or all of its shares. We do not know when or in what amounts the selling stockholder may offer shares for sale. Because the selling stockholder may offer all or some of the shares pursuant to this offering, and because there are currently no agreements, arrangements or understandings with respect to the sale of any of the shares, we cannot estimate the number of the shares that will be held by the selling stockholder after completion of the offering.

If the selling stockholder transfers more than 500 shares of common stock by gift, pledge or other non-sale transfer after the effective date of the registration statement of which this prospectus is a part, the donee, pledgee or transferee may make no offer or sale under this prospectus unless and until a supplement to this prospectus has been filed or an amendment to the related registration statement has become effective.

The table below sets forth the beneficial ownership of all common stock held by the selling stockholder as of January 7, 2004 and the number of such shares of common stock offered by this prospectus. Percentage of ownership is based on 63,313,965 shares of common stock outstanding on March 30, 2004.

We prepared this table based on information supplied to us by the selling stockholder named in the table, and we have not sought to independently verify such information.

	BENEFICIAL OWNERSHIP PRIOR TO OFFERING		
NAME OF SELLING STOCKHOLDER	NUMBER OF SHARES BENEFICIALLY OWNED	PERCENTAGE OWNERSHIP	SHARES OFFERED HEREBY
Acqua Wellington Opportunity I Limited	3,500,000	5.5%	3,500,000

PLAN OF DISTRIBUTION

The shares covered by this prospectus may be offered and sold from time to time by the selling stockholder. The term "selling stockholder" includes donees selling 500 or fewer shares received from the selling stockholder as a gift after the effective date of the registration statement of which this prospectus is a part. The selling stockholder will act independently of us in making decisions with respect to the timing, manner and size of each sale. Such sales may be made on one or more exchanges or in the over-the-counter market or otherwise, at prices and under terms then prevailing or at prices related to the then current market price or in negotiated transactions. The selling stockholder has advised us that it may offer and sell the shares of common stock offered by this prospectus in one or more of, or a combination of, the following methods:

- purchases by a broker-dealer as principal and resale by such broker-dealer for its own account pursuant to this prospectus;
- ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- block trades in which the broker-dealer so engaged will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- an over-the-counter distribution in accordance with the rules of the Nasdaq National Market;
- through the Nasdaq National Market or any other securities exchange or association that quotes the common stock;
- in privately negotiated transactions; and
- in options transactions.

In addition, the selling stockholder has advised us that it may sell shares of common stock in compliance with Rule 144, if available, or pursuant to other available exemptions from the registration requirements under the Securities Act, rather than pursuant to this prospectus.

To the extent required, this prospectus may be amended or supplemented from time to time to describe a specific plan of distribution. In connection with distributions of the shares or otherwise, the selling stockholder has advised us that it may enter into hedging transactions with broker-dealers or other financial institutions. In connection with such transactions, broker-dealers or other financial institutions may engage in short sales of the common stock in the course of hedging the positions they assume with the selling stockholder. The selling stockholder has advised us that it may also sell the common stock short and redeliver the shares to close out such

short positions. The selling stockholder has advised us that it may also enter into option or other transactions with broker-dealers or other financial institutions which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). The selling stockholder has advised us that it may also pledge shares to a broker-dealer or other financial institution, and, upon a default, such broker-dealer or other financial institution may effect sales of the pledged shares pursuant to this prospectus (as supplemented or amended to reflect such transaction).

In effecting sales, broker-dealers or agents engaged by the selling stockholder may arrange for other broker-dealers to participate. Broker-dealers or agents may receive commissions, discounts or concessions from the selling stockholder in amounts to be negotiated immediately prior to the sale.

In offering the shares covered by this prospectus, the selling stockholder and any broker-dealers who execute sales for such selling stockholder may be deemed to be "underwriters" within the meaning of the Securities Act in connection with such sales. Any profits realized by the selling stockholder and the compensation of any broker-dealer may be deemed to be underwriting discounts and commissions.

In order to comply with the securities laws of certain states, if applicable, the shares must be sold in such jurisdictions only through registered or licensed brokers or dealers. In addition, in certain states the shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

The selling stockholder has advised us that it may sell its shares at market prices prevailing at the time of sale, at prices related to such prevailing market prices, at negotiated prices or at fixed prices and that the transactions listed above may include cross or block transactions.

We have advised the selling stockholder that the anti-manipulation rules of Regulation M under the Securities Exchange Act of 1934 may apply to its sales of common stock and to the activities of the selling stockholder and its affiliates. In addition, we will make copies of this prospectus available to the selling stockholder for the purpose of satisfying the prospectus delivery requirements of the Securities Act of 1933. The selling stockholder has advised us that it may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

At the time a particular offer of shares is made, if required, a prospectus supplement will be distributed that will set forth the number of shares being offered and the terms of the offering, including the name of any underwriter, dealer or agent, the purchase price paid by any underwriter, any discount, commission and other item constituting compensation, any discount, commission or concession allowed or reallowed or paid to any dealer, and the proposed selling price to the public.

We have agreed to indemnify the selling stockholder against certain liabilities, including certain liabilities under the Securities Act.

All shares offered by this prospectus by the selling stockholder will be sold subject to the terms and conditions of the registration rights agreement described in the section entitled "Selling Stockholder."

LEGAL MATTERS

The validity of the common stock offered by this prospectus has been passed upon for us by Vinson & Elkins L.L.P., Houston, Texas.

EXPERTS

The consolidated financial statements of Lexicon Genetics Incorporated included in our annual report on Form 10-K for the years ended December 31, 2003 and 2002 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon (which contains one explanatory paragraph describing the audit procedures relating to a revision to the 2001 financial statements for a reclassification adjustment that was applied to revise the 2001 financial statements described in Note 4 to the consolidated financial statements; the 2001 financial statements were audited by other auditors who have ceased operations and for which

Ernst & Young LLP has expressed no opinion or other form of assurance on the 2001 financial statements taken as a whole), included therein and incorporated herein by reference. Such financial statements have been incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

The financial statements for the year ended December 31, 2001, incorporated by reference in this prospectus, have been audited by Arthur Andersen LLP, independent public accountants, as indicated in their report with respect thereto, and are included herein in reliance upon the authority of said firm as experts in accounting and auditing. Arthur Andersen LLP has not consented to the inclusion of their report in this prospectus, and we have not obtained their consent to do so in reliance upon Rule 437a of the Securities Act. Because Arthur Andersen LLP has not consented to the inclusion of their report in this prospectus, you will not be able to recover against Arthur Andersen LLP under Section 11(a) of the Securities Act for any untrue statement of a material fact contained in the financial statements audited by Arthur Andersen LLP or any omission to state a material fact required to be stated therein.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act of 1933 regarding the offer and sale of shares of common stock by the selling stockholder. This prospectus, which constitutes a part of the registration statement, does not contain all of the information contained in the registration statement, some items of which are contained in exhibits to the registration statement as permitted by the rules and regulations of the SEC. For further information about us and our common stock, please review the registration statement and the exhibits filed as a part of it. Statements made in this prospectus that describe documents may not necessarily be complete. We recommend that you review the documents that we have filed with the registration statement to obtain a more complete understanding of these documents. A copy of the registration statement, including the exhibits filed as a part of it, may be inspected without charge at the SEC's Public Reference Room, 450 Fifth Street, N.W., Washington, D.C. 20549, and copies of all or any part of the registration statement may be obtained from the SEC upon the payment of fees prescribed by it. You may obtain information on the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains a Web site at http://www.sec.gov that contains reports, proxy and information statements and other information regarding companies that file electronically with it.

We are subject to the information and reporting requirements of the Securities Exchange Act of 1934 and will file periodic reports, proxy statements and other information with the SEC. You may inspect any of these documents as described in the preceding paragraph. These reports, proxy statements and other information may also be inspected at the offices of Nasdaq Operations, 1735 K Street, N.W., Washington, D.C. 20006.

DOCUMENTS INCORPORATED BY REFERENCE

The SEC allows us to "incorporate by reference" into this prospectus information that we file with the SEC in other documents. This means that we can disclose important information to you by referring to other documents that contain that information. The information incorporated by reference is considered to be part of this prospectus, except for information superseded by information in this prospectus. We incorporate by reference the documents listed below that we have previously filed with the SEC and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934 (other than information furnished to the SEC under Items 9 or 12 of Form 8-K), prior to the termination of the offering of the securities covered by this prospectus:

- our annual report on Form 10-K for the year ended December 31, 2003;
- our amendment to our annual report on Form 10-K/A for the year ended December 31, 2003, as filed on July 16, 2004;
- our quarterly report on Form 10-Q for the quarter ended March 31, 2004;
- our current report on Form 8-K dated April 21, 2004; and

- the description of our common stock contained in our registration statement on Form 8-A filed with the Commission on March 27, 2000 pursuant to Section 12 of the Securities Exchange Act of 1934, including any amendments and reports filed for the purpose of updating such description.

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or in any other subsequently filed document which also is or is deemed to be incorporated by reference in this prospectus modifies or supersedes that statement. Any statement that is modified or superseded will not constitute a part of this prospectus, except as modified or superseded. You may rely on any statement contained in this prospectus or in documents incorporated or deemed to be incorporated in this prospectus, unless that statement has been subsequently modified or superseded as described above prior to the time you make your investment decision.

Upon your written or oral request, we will provide you at no cost a copy of any or all of the documents incorporated by reference in this prospectus, other than the exhibits to those documents, unless the exhibits are specifically incorporated by reference into this prospectus. You may request a copy of these documents by contacting:

Investor Relations
Lexicon Genetics Incorporated
8800 Technology Forest Place
The Woodlands, Texas 77381
Telephone: (281) 863-3000

YOU SHOULD RELY ONLY ON THE INFORMATION CONTAINED IN THIS PROSPECTUS AND DOCUMENTS INCORPORATED INTO THIS PROSPECTUS BY REFERENCE. WE HAVE NOT AUTHORIZED ANYONE TO PROVIDE YOU WITH INFORMATION DIFFERENT FROM THAT CONTAINED IN THIS PROSPECTUS OR THE DOCUMENTS INCORPORATED BY REFERENCE HEREIN. THIS PROSPECTUS MAY ONLY BE USED WHERE IT IS LEGAL TO SELL THESE SECURITIES. THE INFORMATION CONTAINED IN THIS PROSPECTUS, THE DOCUMENTS INCORPORATED BY REFERENCE HEREIN AND ANY SUPPLEMENTS TO THIS PROSPECTUS IS ACCURATE ONLY AS OF THE DATES OF THEIR RESPECTIVE COVERS OR EARLIER DATES AS SPECIFIED THEREIN, REGARDLESS OF THE TIME OF DELIVERY OF THIS PROSPECTUS OR ANY SUPPLEMENT TO THIS PROSPECTUS OR OF ANY SALE OF OUR COMMON STOCK.

In this prospectus, "Lexicon," "Lexicon Genetics," "we," "us" and "our" refer to Lexicon Genetics Incorporated and its subsidiary.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION.

The estimated expenses payable by the Registrant in connection with the issuance and distribution of the securities being registered (other than underwriting discounts and commissions) are as follows:

SEC Registration Fee	$ 1,699
Printing Expenses	5,000
Accounting Fees and Expenses	42,500
Legal Fees and Expenses	7,500
Transfer Agent and Registrar Fees	--
Miscellaneous Expenses	3,301
Total	$ 60,000

The reasonable fees of one counsel for the selling stockholder is included under "Legal Fees and Expenses" in the foregoing table. The selling stockholder will pay any underwriting discounts and commissions, brokerage fees and other similar expenses, which discounts, commissions, fees and expenses are not included in the foregoing table.

ITEM 15. INDEMNIFICATION OF DIRECTORS AND OFFICERS.

Section 145 of the Delaware General Corporation Law ("DGCL") provides that a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation by reason of the fact that he is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. Section 145 further provides that a corporation similarly may indemnify any such person serving in any such capacity who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that he is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees) actually and reasonably incurred in connection with the defense or settlement of such action or suit if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation and except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Delaware Court of Chancery or such other court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Delaware Court of Chancery or such other court shall deem proper.

Lexicon's certificate of incorporation and bylaws provide that indemnification shall be to the fullest extent permitted by the DGCL for all current or former directors or officers. As permitted by the DGCL, the certificate of incorporation provides that directors of Lexicon shall have no personal liability to Lexicon or its stockholders for monetary damages for breach of fiduciary duty as a director, except (1) for any breach of the director's duty of loyalty to Lexicon or its stockholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or knowing violation of law, (3) under Section 174 of the DGCL or (4) for any transaction from which a director derived an improper personal benefit.

Lexicon has entered into indemnification agreements with each of its officers and directors. These agreements, among other things, require Lexicon to indemnify each officer and director for all expenses, including attorneys'

fees, liabilities, judgments, fines, penalties, excise taxes and settlement amounts incurred by any such person in any claim, action, suit or proceeding, including any action by or in the right of Lexicon, arising out of the person's services as a director, officer, employee, agent or fiduciary to Lexicon, any subsidiary of Lexicon or to any other company or enterprise for which the person provides services at Lexicon's request.

At present, there is no pending litigation or proceeding involving a director or officer of Lexicon as to which indemnification is being sought nor is Lexicon aware of any threatened litigation that may result in claims for indemnification by any officer or director.

ITEM 16. EXHIBITS.

EXHIBIT NO.		DESCRIPTION
3.1	--	Restated Certificate of Incorporation (filed as Exhibit 3.1 to the Company's Registration Statement on Form S-1 (Registration No. 333-96469) and incorporated by reference herein).
3.2	--	Restated Bylaws (filed as Exhibit 3.2 to the Company's Registration Statement on Form S-1 (Registration No. 333-96469) and incorporated by reference herein).
4.1	--	Amended and Restated Registration Rights Agreement dated as of May 7, 1998 by and among the Company and the stockholders named therein (filed as Exhibit 4.1 to the Company's Registration Statement on Form S-3 (Registration No. 333-67294) and incorporated by reference herein).
5.1*	--	Opinion of Vinson & Elkins L.L.P.
23.1*	--	Consent of Ernst & Young LLP
23.2*	--	Consent of Vinson & Elkins L.L.P. (contained in Exhibit 5.1)
24.1*	--	Power of Attorney (contained in signature page)

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* Previously filed.

ITEM 17. UNDERTAKINGS.

The undersigned Registrant hereby undertakes:

(a) To file, during any period in which offers or sales are being made, a post-effective amendment to this Registration Statement:

(i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933, as amended (the "Securities Act");

(ii) to reflect in the prospectus any facts or events arising after the effective date of this Registration Statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in this Registration Statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective Registration Statement; and

(iii) to include any material information with respect to the plan of distribution not previously disclosed in this Registration Statement or any material change to such information in this Registration Statement;

provided, however, that paragraphs (a)(i) and (a)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), that are incorporated by reference in this Registration Statement.

(b) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(c) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

The Registrant hereby undertakes that, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this Registration Statement shall be deemed to be a new registration statement relating to the securities offered therein and the offering of such securities at the time shall be deemed to be the initial bona fide offering thereof.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant pursuant to the provisions described in Item 15, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of The Woodlands, in the State of Texas, on July 27, 2004.

Lexicon Genetics Incorporated

By: *

Arthur T. Sands, M.D., Ph.D.
President and Chief Executive Officer

PURSUANT TO THE REQUIREMENTS OF THE SECURITIES ACT OF 1933, AS AMENDED, THIS REGISTRATION STATEMENT HAS BEEN SIGNED BELOW BY THE FOLLOWING PERSONS IN THE CAPACITIES AND ON THE DATES INDICATED BELOW.

SIGNATURE	TITLE	DATE
* Arthur T. Sands, M.D., Ph.D.	President, Chief Executive Officer and Director (principal executive officer)	July 27, 2004
* Julia P. Gregory	Executive Vice President, Corporate Development and Chief Financial Officer (principal financial and accounting officer)	July 27, 2004
* C. Thomas Caskey, M.D.	Chairman of the Board of Directors	July 27, 2004
* Sam L. Barker, Ph.D.	Director	July 27, 2004
* Patricia M. Cloherty	Director	July 27, 2004
* Robert J. Lefkowitz, M.D.	Director	July 27, 2004
* Alan S. Nies, M.D.	Director	July 27, 2004

* By: /s/ Jeffrey L. Wade
Jeffrey L. Wade, J.D.
Pursuant to powers-of-attorney filed with the Registration Statement on Form S-3 (333-111821) on January 9, 2004.

EXHIBIT INDEX

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23.1*	--	Consent of Ernst & Young LLP
23.2*	--	Consent of Vinson & Elkins L.L.P. (contained in Exhibit 5.1)
24.1*	--	Power of Attorney (contained in signature page)

* Previously filed