FORM 10-K405

Annual report pursuant to section 13 and 15(d), Regulation S-K Item 405

Filing Date: **1999-03-26** | Period of Report: **1998-12-31**
SEC Accession No. 0000950109-99-001047

FILER

CURAGEN CORP
CIK:**1030653**| IRS No.: **06133140**
Type: **10-K405** | Act: **34** | File No.: **000-23223** | Film No.: **99573658**
SIC: **8731** Commercial physical & biological research

Business Address
555 LONG WHARF DRIVE
11TH FL
NEW HAVEN CT 06511

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

FORM 10-K

[X] ANNUAL REPORT PURSUANT TO SECTION 13 or 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 1998

OR

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

For the transition period from to

_____

Commission File Number 0-23223

CURAGEN CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	06-1331400
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

555 Long Wharf Drive, 11th Floor, New Haven, Connecticut	06511
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (203) 401-3330

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

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

Common Stock, $0.01 par value
(Title of Class)

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

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

The aggregate market value of voting Common Stock held by non-affiliates of the registrant, (without admitting that any person whose shares are not included in determining such value is an affiliate) based upon the closing sale price of the Common Stock on March 16, 1999 as reported on the Nasdaq National Market, was approximately $50,531,163.

The number of shares outstanding of the Registrant's Common Stock as of March 16, 1999 was 13,415,357.

Documents Incorporated by Reference

The registrant intends to file a definitive proxy statement pursuant to Regulation 14A within 120 days of the end of the fiscal year ended December 31, 1998. Portions of such proxy statement are incorporated by reference into Part III of this report.

CURAGEN CORPORATION
FORM 10-K
INDEX

<TABLE>
<CAPTION>

</TABLE>

PART I

ITEM 1. BUSINESS

The following Business Section contains forward-looking statements which involve risks and uncertainties. The Registrant's actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors. See "Management's Discussion and Analysis of Financial Condition and Results of Operations--Certain Factors That May Affect Results of Operations."

GENERAL

CuraGen Corporation (the "Company" or "CuraGen") is pioneering the systematic application of genomics to accelerate the discovery and development of therapeutic and agricultural products. CuraGen's fully-integrated genomics technologies, processes and information systems are designed to rapidly generate comprehensive information about gene sequences, gene expression, biological pathways and the potential drugs that affect these pathways, each on a scale not previously undertaken. The Company believes that it can overcome the limitations of competing technologies, processes and databases and can condense key steps in gene-based drug discovery and development. CuraGen believes its technology platform will facilitate the discovery and development of highly specific and effective drugs aimed at a variety of complex diseases such as cardiovascular disease, stroke, cancer and metabolic disorders.

The Company's drug discovery platform has three primary systems: the SeqCalling system for the generation of coding sequences for expressed genes within a sample, including sequences for rarely expressed and novel genes; the GeneCalling system for comprehensive gene expression analysis and gene discovery; and the PathCalling system for discovery of the roles of genes and the proteins they encode in biological pathways. The Company has unified its SeqCalling, GeneCalling, and PathCalling technologies, processes and databases under its GeneScape bioinformatics operating system to integrate all aspects of process management, data analysis and visualization. GeneScape provides an easy-to-use, web-based interface to the Company's technology platform. Customers can access the GeneScape interface via the internet, using any standard web-browser, such as Netscape Navigator or Microsoft Internet Explorer. Genescape's architecture allows researchers interactive, remote access to the Company's genomics databases and technologies to meet their individual discovery and development needs. GeneScape also includes CuraTools, a full-featured bioinformatics software suite for further gene and protein characterization.

In addition to accelerating the discovery of new drug candidates, the Company believes its SeqCalling, GeneCalling, and PathCalling systems are well-positioned to predict the efficacy and safety of drug candidates currently in pharmaceutical development pipelines and to review the performance and side effects of drugs already on the market. This pharmacogenomics approach can aid

in the development of more effective, safer drugs and identify more appropriate patient populations.

Each of the SeqCalling, GeneCalling, and PathCalling systems consists of a proprietary enabling technology, a high-throughput, automated process using the technology to generate information, and a database containing the information generated. The SeqCalling, GeneCalling, and PathCalling systems are currently operational, and the Company is currently populating the SeqCalling, GeneCalling, and PathCalling databases from internal research programs and research collaborations, as well as from publicly available databases. The Company has designed the three systems as an integrated platform to enable gene discovery, drug target validation and high-throughput analysis of drug candidates in a highly efficient and cost-effective manner. CuraGen has decided to lessen the extent to which it is developing its HitCalling technology. Although the Company considers this technology to be of benefit in the future, CuraGen intends to emphasize the continued development and enhancement of the other technologies that currently comprise its integrated genomics suite.

OVERVIEW

Successful treatment of disease is often limited by a lack of understanding of its initiation and progression at the level of genes, proteins and biological pathways. Technologies and processes that have been used successfully in the past to discover treatments for diseases with relatively simple causes have been less effective against complex diseases that arise through a combination of multiple genetic and environmental factors. Cardiovascular disease, cancer, stroke and metabolic disorders are examples of prevalent complex diseases. Treating these complex diseases requires an understanding of how the body uses its genetic information, how disruptions in this information can lead to disease and, in turn, how drugs can arrest or reverse disease progression. As scientific advances improve our understanding of the genetic basis of disease, the Company believes that the methods the pharmaceutical industry

uses to develop new drugs will undergo a fundamental transformation. Companies that can anticipate this transformation and develop and apply new technologies may have a unique opportunity to develop the next generation of therapeutic products for important complex diseases.

In recent years, scientists have begun to analyze large portions of the genetic information contained within the human genome. This discipline, termed genomics, employs large-scale efforts catalyzed by the Human Genome Project. By understanding the role of genes in the control and function of biological pathways and cellular processes, scientists seek to understand more fully the genetic basis of disease and develop more effective treatments. To date, however, neither the pharmaceutical nor the agricultural industries have used genomics extensively to develop new product opportunities. These industries have used genomics to a limited extent for three primary reasons: technologies have been inadequate; inefficient, non-automated discovery processes have incompletely evaluated the influence of genetic and environmental factors; and uniform information systems to drive the discovery process have been unavailable.

Treatment of complex diseases remains a major technical challenge and will require an integrated set of genomic technologies and processes. CuraGen believes that knowledge of genes, proteins, biological pathways and their interplay with the environment, together with information systems to use this knowledge, will accelerate drug discovery and development. CuraGen has developed its technologies, processes and information systems to provide this knowledge and is applying its integrated platform towards the discovery and development of the next generation of genomics-based therapeutic, diagnostic and agricultural products.

CuraGen was incorporated in Delaware in November 1991. Its principal executive offices are located at 555 Long Wharf Drive, 11/th/ Floor, New Haven, Connecticut 06511, and its telephone number is (203) 401-3330.

GeneScape(R) and GeneCalling(R) are trademarks of the Company which have been registered with the United States Patent and Trademark Office. PathCalling/(TM)/, SeqCalling/(TM)/, CuraTools/(TM)/, CuraShop/(TM)/, CuraTox/(TM)/, and CuraMode/(TM)/ are trademarks or service marks of the Company for which registration applications have been filed with the United States Patent and Trademark Office. All other trademarks or trade names referred to herein are the property of their respective owners.

CURAGEN'S APPROACH TO GENE-BASED DRUG DISCOVERY

CuraGen's integrated genomics technologies, processes and information systems are designed to overcome significant technological limitations and condense key steps in gene-based drug discovery and development. The Company believes that its technology platform has the potential to rapidly generate comprehensive information about gene expression, biological pathways and the compounds affecting these pathways, each on a scale not previously undertaken. CuraGen

believes this will permit the comprehensive analysis of many diseases and enable the discovery of disease-related genes, drug targets and potential drugs.

Gene Discovery (SeqCalling and GeneCalling)

CuraGen has developed its proprietary SeqCalling and GeneCalling technologies to overcome significant limitations of existing gene discovery methods. SeqCalling provides a rapid route to generating comprehensive sequence databases of expressed genes from any species, while GeneCalling enables the rapid, precise measurement of substantially all of the differences in gene expression levels between biological samples in order to discover disease-related genes. GeneCalling is designed to detect genes expressed at the level of a single mRNA molecule per cell, to measure comprehensively the expression levels of 95% of the genes expressed in any species and to be integrated into an efficient, automated, high-throughput process in order to rapidly generate large databases of gene expression profiles. These technologies permit the Company to pursue research programs for many disease systems, process many samples in parallel and potentially discover and seek patent protection for commercially valuable disease-related genes.

Target Identification and Validation (PathCalling)

The Company has developed its proprietary PathCalling technologies to reduce the time and cost of target identification and validation. PathCalling is an automated, high-throughput process that tests for interactions between combinations of proteins and assembles these protein-protein interactions into the PathCalling database. Although the PathCalling database is still at a relatively early stage, the Company intends to continue to populate the PathCalling database with the protein-protein interactions that constitute the pathways in humans and model organisms that are relevant to disease. By identifying protein-protein interactions and comparing them with pathways within the PathCalling database, the role of these proteins within a given biological pathway can be elucidated and the database further augmented. PathCalling is designed to permit disease-related genes to be linked

rapidly to specific biological pathways, providing valuable biological context for gene discoveries and additional targets for therapeutic intervention. The Company believes that its PathCalling database has the potential to streamline target identification and validation into a single, efficient, accelerated process. The Company further believes that the number of pathway-related protein-protein interactions currently in its proprietary PathCalling database is greater than the total number of interactions previously described in the scientific literature.

Drug Development and Pharmacogenomics (SeqCalling; GeneCalling; PathCalling)

The Company believes that its SeqCalling, GeneCalling and PathCalling technologies can also be used to predict which drugs are more likely to succeed by analyzing gene expression changes induced by drug treatment in humans and animal models in preclinical and clinical trials. For drugs already on the market, the Company has commenced generating GeneCalling databases with the objective of selecting appropriate patient populations and accelerating the development of an improved generation of drugs with fewer side effects. By providing a precise correlation of gene expression levels and the activities of biological pathways following treatment with specific drugs, the objective of the Company's pharmacogenomics approach is to minimize the side effects of drugs, to identify appropriate patient populations for existing drugs and to aid in the development of safer, more effective drugs. cSNPs from our SeqCalling database, which are human genetic variations that are found in the coding regions of genes, can then be assigned to the differentially expressed genes to identify potential markers for future patient selection.

Technology Integration and Information Systems (GeneScape)

The Company has integrated its SeqCalling, GeneCalling, and PathCalling process and databases under its GeneScape bioinformatics operating system that unifies all aspects of process management, data analysis and visualization. CuraGen's goal is to establish its fully-integrated technology and the GeneScape operating system as the preferred platform for genomics and to apply its platform to accelerate drug discovery, drug development and pharmacogenomics. GeneScape provides a standardized, web-based interface to its technology platform, thereby allowing researchers remote access and interactive capabilities from multiple sites to meet their individual discovery and development needs.

PRODUCTS AND SERVICES

CuraGen is marketing its genomics technology and information to the pharmaceutical, biotechnology agricultural, and other life science companies through the establishment of research collaborations. Research collaborations generally involve the application of CuraGen's SeqCalling, GeneCalling, and PathCalling technologies to a collaborator's projects, include those support

services required to characterize gene and target discoveries, include subscriptions to databases, and provide ready integration with a collaborator's existing development pipeline. These arrangements will use the GeneScape operating system, the Company's web-based software that manages the Company's processes, and provides access to the Company's databases and includes CuraTools, a full-featured bioinformatics software suite.

SeqCalling and GeneCalling: Gene Sequencing and Gene Expression Services and Databases

CuraGen developed its proprietary SeqCalling, and GeneCalling technologies to overcome significant limitations of competing gene and gene sequence discovery methods. GeneCalling is the Company's method for generating and analyzing gene expression profiles. GeneScape is the Company's information system and database that analyzes and stores differences in gene expression profiles to identify disease-related genes. GeneCalling permits sensitive detection of genes that can control biological pathways when expressed at very low levels, and unlike expressed sequence tags (EST)-based methods, does not require repetitive sequencing to measure gene expression. The Company's technology is comprehensive in detecting genes with novel sequences and is therefore applicable universally to humans, animals, plants, and pathogens. In comparison, hybridization-based methods are primarily limited to known genes and do not readily discriminate between the many genes that share related DNA sequences.

SeqCalling provides a rapid route to generating comprehensive sequence databases of expressed genes from any species and is useful for identifying human genetic variations known as Single Nucleotide Polymorphisms (SNPs). SeqCalling is also beneficial in identifying cSNPs, which are located within the coding regions of genes. cSNPs are of increasing value in research because they are believed to be useful markers in the identification of disease genes and genetic differences, which may determine the response of a patient to disease, and to drug treatment.

GeneCalling provides the ability to discover disease-related genes by measuring expression levels and determining gene expression differences between biological samples, such as diseased and normal human tissues. These samples are usually processed within a month of receipt, and profiles of gene expression levels are available immediately for inspection and analysis.

Through GeneCalling, CuraGen has developed an innovative approach for gene discovery for inherited diseases: positional expression cloning. By combining its gene expression analysis with existing gene mapping techniques, the Company can rapidly discover genes associated with inherited diseases by identifying candidate genes that both show altered expression and map to the chromosomal locations known to contain underlying disease genes. The Company believes its positional expression cloning approach will be particularly effective in identifying and characterizing susceptibility and protective genes in many common complex diseases.

The Company believes that its technology for disease-related gene discovery has significant advantages over positional cloning, competing genome sequencing, and gene expression technologies. CuraGen's methods permit the Company to pursue research programs for many disease systems in parallel, with the potential to rapidly identify a large number of commercially valuable disease-related genes. As part of its internal programs, the Company seeks patent protection for newly discovered disease-related genes and proteins, as well as for novel uses of known genes and the proteins they encode.

PathCalling: Pathway Analysis Services and Database

Once genes involved in a disease have been identified using GeneCalling, it is important to be able to determine how the proteins they encode interact in the complex pathways involved in the disease. Although a particular disease-related protein might not be a potential protein drug or drug discovery target, knowledge of the other proteins in the same pathway may lead to promising protein drug or target candidates. CuraGen's PathCalling technologies and database were developed to provide the link between disease-related proteins and their biological pathways to aid in the identification and validation of appropriate targets following the discovery of a disease-related gene.

PathCalling consists of proprietary automated, high-throughput biological operations that simultaneously test for interactions between of pairs of proteins. PathCalling then assembles discovered protein-protein interactions into connected biological pathways, including pathways discovered previously by CuraGen or previously described in the scientific literature. Although the PathCalling technology and database are still at a relatively early stage, the Company's objective is to continue to build the PathCalling database to contain protein-protein interactions that constitute the pathways that are relevant to disease. The PathCalling database permits the graphical display of all pathways contained in the database involving any particular protein and allows these pathways to be queried for information in much the same way gene sequence databases are queried today. The Company believes that this will facilitate the

rapid linkage of disease-related genes to specific biological pathways, providing the crucial biological context for gene discoveries, which may lead to the identification of potential targets for therapeutic intervention.

The Company seeks patent protection on the utility of specific proteins or protein-protein interactions as drug targets based on information provided by PathCalling, in addition to composition of matter claims based on the sequences of novel and non-obvious proteins and the genes encoding them. There can be no assurance, however, that such patents will be granted.

GeneScape Operating System for Genomics

CuraGen designed its GeneScape bioinformatics software to meet the needs of researchers for a single operating system which integrates research requests, project management, database access and data analysis and visualization. The Company's GeneScape web-based bioinformatics operating system provides the user with a standardized, internet-enabled interface to its processes and databases for SeqCalling, GeneCalling, and PathCalling. GeneScape operates on any computer platform that supports a standard web browser. GeneScape is designed to be modular and extendable to incorporate other processes. GeneScape currently consists of three components: Discovery, Study Management, and CuraTools.

Discovery. The Discovery component manages queries to the SeqCalling, GeneCalling, and PathCalling databases. GeneScape provides data analysis and visualization through a flexible, easy-to-use point-and-click interface organized in three sections corresponding to SeqCalling, GeneCalling, and PathCalling. GeneScape provides the answers to queries in visual format, organized according to preferences set by the end user: differential gene expression; expression in particular samples, tissues, or disease stages; participation in metabolic or signal transduction pathways; map position; functional role; interactions with proteins or small molecules; or other custom criteria. The Company believes that the ability to respond to direct queries with the comprehensive analysis of gene

expression and biological pathways may make GeneScape a preferred platform for discovering disease-related genes and drug discovery targets.

Study Management. CuraGen's collaborators can manage processes and resources over the Internet to meet their individual research needs. Separate links on the Study Management page provide direct, up-to-the-minute status reports for projects, individual processes within projects, and resource allocation among projects and processes. Study Management automates the operation of every station in the SeqCalling, GeneCalling, and PathCalling process and monitors quality control at each processing step.

CuraTools. The GeneScape operating system also includes CuraTools, an easy-to-use, unified bioinformatics software package for DNA and protein sequence analysis; sequence similarity to known genes, protein drugs and protein targets; three-dimensional structure prediction; identification of proteins participating in biological pathways; and custom literature searches. CuraTools also provides users with access to publicly available sequence, mapping and expression databases that the Company has imported, assembled, and annotated for enhanced value. In addition, the Company has assembled proprietary sequence and mapping databases for portions of the corn, mouse, rat and human genomes. Collaborators can elect to have CuraGen link their own proprietary or third-party sequence databases into GeneScape and CuraTools for their own exclusive use.

CuraShop

Through its CuraShop, the Company now offers its collaborators services that will complement its proprietary SeqCalling, GeneCalling, and PathCalling technologies. CuraShop can provide high-throughput, efficient and essential research services including confirmation of gene expression differences, gene sequencing, delivery of full-length clones of genes, gene mapping and mutation detection. These services and materials can all be requested, for a fee, directly through GeneScape.

RESEARCH COLLABORATIONS

The Company's business strategy includes the establishment of research collaborations with pharmaceutical, biotechnology, agricultural and other life science companies. The Company anticipates that such collaborations will generally provide revenues in the form of fees for the generation of gene sequences, gene expressions, or biological pathway data from samples provided by a collaborator. The collaborator will have the ability to control how resources are allocated to generate SeqCalling, GeneCalling and PathCalling databases and to perform additional research services through CuraShop, including the sequencing of gene fragments and the generation of full-length clones. The Company expects that collaborators will have the right to license, for an up-front fee, discoveries arising from a collaboration, including rights to novel genes, novel uses of previously identified genes, and protein targets and hits. Collaborations may also include milestone payments and royalty payments on sales

of products developed using discoveries made through the use of the Company's technology.

The Company also intends to seek to enter into other research collaborations that provide the Company access to complementary technologies. To date, the Company has entered into significant collaborations with Pioneer Hi-Bred International, Inc. ("Pioneer Hi-Bred"), Genentech, Inc. ("Genentech"), Biogen, Inc. ("Biogen"), and Glaxo Wellcome, Inc. ("Glaxo"). The loss of any one of these collaborations could have a material adverse effect on the Company's business, financial condition, and results of operations.

Pioneer Hi-Bred

Effective June 1, 1997, the Company entered into a Collaborative Research and License Agreement with Pioneer Hi-Bred whereby the Company agreed to perform research that will be funded by Pioneer Hi-Bred. In conjunction with the execution of this agreement, Pioneer Hi-Bred made a $7,500,000 equity investment in the Company. In addition, Pioneer Hi-Bred paid the Company at a rate of $2,500,000 per year, for the first 10 months, in quarterly installments due in advance, on or before the first day of each calendar quarter. In March 1998, Pioneer Hi-Bred increased the minimum annual research funding to $5,000,000 per year. Pioneer Hi-Bred has the right to terminate the research program at any time upon a breach by the Company and on three months' written notice at any time after May 2000. The $5,000,000 per year fee is based upon an established number of CuraGen employees whom will be devoted to the Pioneer Hi-Bred research.

Genentech

In June 1996, the Company entered into a Pilot Research Services and Evaluation Agreement with Genentech pursuant to which the Company performed certain research services for a $200,000 fee. The pilot collaboration was superseded by the Evaluation Agreement, signed and effective December 27, 1996, pursuant to which the Company performed additional research services during 1997 for a research fee of $667,000 payable in four equal installments of $166,750. The Company completed the research within four months of the receipt of tissue samples from Genentech as required by the Evaluation Agreement. In connection with the execution of the Evaluation Agreement, Genentech made an equity investment of $1,800,000 in the form of 307,167 shares of Series A Convertible Preferred Stock.

In November 1997, CuraGen and Genentech entered into a research collaboration and database subscription arrangement to discover novel genes and therapeutics across a range of Genentech-specified disease programs. Genentech will additionally provide funding of up to $24,000,000 over five years if the database subscription arrangement is not terminated, the research collaboration continues for the full five-year term and Genentech elects to retain licenses to its discoveries. Genentech has the right to terminate the research collaboration, upon a breach by the Company of any material obligation under the Genentech Agreement or at its sole discretion, on one month's prior notice (i) in May 1999, subject to its payment of a termination fee or forgiveness of the portion of the loan facility outstanding on such termination date and (ii) on or after November 2000. Genentech has an option to acquire licenses to certain discoveries arising from the collaboration. Pursuant to the agreement, Genentech also purchased $5,000,000 of Common Stock in a private placement concurrent with the Company's initial public offering at the initial public offering price of $11.50 per share. Genentech also agreed to provide CuraGen with an interest-bearing loan facility which could in the aggregate reach $26,000,000 if the research program continues beyond its initial three year term. The loan facility contains annual borrowing limits and the outstanding principal and interest under the loan facility are payable five years from the date of the agreement. Subject to certain limitations, during the term of the agreement, and after the end of the first year, the drawn-down portion of the loan is convertible at CuraGen's option into CuraGen non-voting Common Stock, par value $.01 per share (the "Non-Voting Common Stock") based upon a formula that approximates the prevailing market price of the Company's Common Stock. If issued, the Non-Voting Common Stock is convertible, at Genentech's option, into Common Stock (i) at any time, at Genentech's option or (ii) upon the sale or transfer of the Non-Voting Common Stock to a non-affiliated party.

Biogen

In October 1997, CuraGen and Biogen entered into a research collaboration and database subscription arrangement to discover novel genes and therapeutics across a range of Biogen-specified disease programs. The parties also expect to conduct pharmacogenomic analysis of selected products and product candidates in Biogen's portfolio. The collaboration will provide Biogen with access to CuraGen's proprietary genomics platform, including the GeneScape bioinformatics operating system in order to generate GeneCalling and PathCalling databases from Biogen-specified disease systems. Pursuant to the agreement, Biogen purchased $5,000,000 of Common Stock in a private placement concurrent with the initial public offering at the initial public offering price of $11.50 per share, and

agreed to provide a $10,000,000 interest-bearing loan facility. At any time during the term of the agreement, the loan is convertible at the Company's option into Common Stock based upon a formula that approximates its prevailing market price. Biogen will additionally provide payments over five years to support a research collaboration to generate project-specific GeneCalling and PathCalling databases from Biogen-specified disease systems and to gain non-exclusive access to the Company's GeneCalling and PathCalling subscription databases. Payments could reach $18,500,000 if the research collaboration and database subscription arrangement both continue for the full five-year term. Biogen has an option to acquire exclusive licenses to certain discoveries arising from the collaboration. Biogen has the right to terminate the research collaboration upon any breach by the Company of any material obligation under the Biogen Agreement or at its sole discretion at any time after October 1999, on six months' written notice. In addition, Biogen may terminate its subscription to the Company's GeneCalling and PathCalling databases at any time upon three months' written notice.

Glaxo

In November 1998, CuraGen and Glaxo announced a drug discovery collaboration to utilize CuraGen's integrated genomics processes for the study and selection of Glaxo compounds for clinical development. This pharmacogenomics collaboration, up to five years in duration, is intended to enable Glaxo to select drug candidates with the highest likelihood of success in clinical trials. Specifically, CuraGen will evaluate numerous compounds across Glaxo therapeutic programs, identifying gene responses associated with compound efficacy and toxicity. Under the terms of the agreement, the Company will receive $2,750,000 per year, plus additional milestone and royalty payments if any drugs emerge from this collaboration. Either party may terminate the pharmacogenomics collaboration without cause at its sole discretion upon three months prior written notice to the other party,

however neither party may terminate this agreement prior to fifteen months after the effective date of the agreement.

CURAGEN INTERNAL PROGRAMS

The Company intends to use its integrated genomics technology platform to pursue a broad portfolio of research programs that encompass drug discovery, drug development and pharmacogenomics. During the next five years, the Company's objective is to analyze systematically the genetic basis of many common diseases as well as the mechanisms of action and adverse side effects of many commonly prescribed drugs. CuraGen is focusing its efforts on programs that address unmet medical needs and that the Company believes have the potential to yield products that can be commercialized in a relatively short time. In particular, the Company selects human diseases and animal models of human disease based on their potential to yield protein drugs, to identify novel targets for common diseases that lack effective treatments or to aid rational development or marketing of existing drugs. At each stage, the Company plans to reevaluate the relative merits of continuing such programs through internal efforts or through research collaborations.

Discovery Programs

The Company currently has programs in cardiovascular disease, including hypertension and stroke; endocrine and metabolic disorders, including obesity, diabetes and osteoporosis; autoimmune disorders including arthritis; cancer; and infectious diseases.

Certain of the genetic disease models selected by the Company are designed to discover variations of genes that protect individuals from disease in addition to finding mutations in genes that are involved in the susceptibility, onset or progression of disease. The Company intends to explore the potential of the proteins encoded by protective genes as protein drugs. The Company has already identified gene variants that are potentially protective in stroke. The Company has also discovered mutations in genes involved in diabetes and hypertension, one of which the Company believes may be a suitable target for small molecule drug development.

Cardiovascular Disease and Stroke. Cardiovascular diseases such as stroke and arteriosclerosis are the leading cause of death in the United States. Treatments for these diseases have limited efficacy. CuraGen is analyzing genetic models of hypertension and ischemic stroke to identify disease-related genes. This strategy has led to the discovery of a secreted protein variant that appears to protect against stroke and the discovery of a gene that may contribute to hypertension.

Endocrine and Metabolic Diseases. Within the field of endocrine and metabolic diseases, CuraGen is analyzing a variety of genetic and cell-based models including obesity, type II diabetes, osteoporosis, osteoarthritis and gall stone disease. The Company believes that its technology platform is well-suited to identifying the genes and pathways involved in these diseases, which

are known to involve errors in signal transduction and the regulation of metabolic pathways. To date, the Company has used SeqCalling and GeneCalling to discover genes associated with these diseases and is using PathCalling in an attempt to identify disease-related pathways and potential targets for drug discovery. The Company believes that this information may also lead to the discovery of protein drugs.

Autoimmunity, Arthritis and Allergy. Although diseases of the immune system, such as systemic lupus erythematosus and rheumatoid arthritis, are among the most common and chronic, existing drugs for autoimmune diseases have exhibited limited efficacy and debilitating side effects. The Company has filed for patent protection related to potential drug targets in this area.

Cancer. Cancer encompasses disease processes of almost every organ system and involves the loss of control of multiple, diverse mechanisms of signal transduction and pathway regulation. CuraGen is applying SeqCalling, GeneCalling and PathCalling to identify the genes, sequences, and pathways involved in the early development of cancer and its step-wise progression to metastatic disease. CuraGen has analyzed a number of models of cancer and has identified pathways incorporating proteins common to many of the models.

Pharmacogenomics

The Company believes that the application of GeneCalling to identify genes that are differentially expressed in response to treatment with drug candidates and marketed drugs represents a significant commercial opportunity. Using this approach, the tissues targeted by the drug, as well as the organs that might exhibit side effects, including liver or kidney damage, can be studied in animal models thought to be indicative of human response. The Company believes that this information may help pharmaceutical companies select and optimize drug candidates based on efficacy and reduced side effects. In addition to reducing the time and cost of developing drugs, the Company

believes that such results may strengthen Food and Drug Administration ("FDA") applications. For drugs already on the market, an understanding of the mechanism of action through pharmacogenomics can help identify appropriate patient populations and lead to an improved generation of drugs.

The Company has begun to analyze drugs whose commercial viability or clinical indications are threatened either by a lack of understanding of mechanism of action or by severe side effects. The Company's goal is to generate databases (CuraTox and CuraMode) to provide pharmacology and toxicology information, to understand the mechanism of drug action, to identify patient populations that are likely to respond favorably to a particular medication and, potentially, to identify new indications or more optimal targets.

COMPETITION

The Company faces, and will continue to face, intense competition from pharmaceutical, biotechnology and diagnostic companies, as well as academic and research institutions and government agencies. The Company is subject to significant competition from organizations that are pursuing technologies and products that are the same as or similar to the Company's technology and products. Many of the organizations competing with the Company have greater capital resources, research and development staffs and facilities and marketing capabilities than the Company. In addition, research in the field of genomics generally is highly competitive. Competitors of the Company in the genomics area include, among others, public companies such as Affymetrix, Inc., Human Genome Sciences, Inc., Incyte Pharmaceuticals, Inc., Millennium Pharmaceuticals, Inc., and Celera Genomics, a subsidiary of Perkin-Elmer Corporation, as well as private companies and major pharmaceutical companies. Universities and other research institutions, including those receiving funding from the federally funded Human Genome Project, also compete with the Company. The Company's future success will depend in large part on its maintaining a competitive position in the genomics field. Rapid technological development by the Company or others may result in products or technologies becoming obsolete before the Company recovers the expenses it incurs in connection with their development. Products offered by the Company could be made obsolete by less expensive or more effective technologies. There can be no assurance that the Company will be able to make the enhancements to its technology necessary to compete successfully with newly emerging technologies.

A number of competitors are attempting to identify and patent genes and gene fragments sequenced at random, typically without specific knowledge of the function of such genes or gene fragments. The Company's competitors may discover, characterize or develop important genes or gene fragments in advance of the Company, which could have a material adverse effect on any related disease research program of the Company. The Company expects competition to intensify in genomics research as technical advances are made and become more widely known.

INTELLECTUAL PROPERTY

The Company's business and competitive position may depend, in part, upon its ability to protect its SeqCalling, GeneCalling and PathCalling proprietary technologies, processes, databases and information systems. Despite the Company's efforts to protect its proprietary rights, unauthorized parties may attempt to obtain and use information that the Company regards as proprietary. The Company relies on patent, trade secret and copyright law and nondisclosure and other contractual arrangements to protect such proprietary information. The Company has filed patent applications for its proprietary methods and devices for gene expression analysis, for discovery of biological pathways and for drug screening for pharmaceutical product development. As of March 1, 1999, the Company had 1 issued U.S. patent and 21 utility and provisional patent applications pending with the United States Patent and Trademark Office (''USPTO'') covering its technology and had filed several corresponding international and foreign patent applications. There can be no assurance that any further patents will issue. There also can be no assurance that others will not independently develop substantially equivalent proprietary information and techniques or otherwise gain access to the Company's proprietary information, that such information will not be disclosed or that the Company can effectively protect its rights to unpatented trade secrets or other proprietary information.

The Company's commercial success will also depend in part on obtaining patent protection on gene and protein target discoveries for which it or its collaborators or subscribers discover utility and on products, methods and services based on such discoveries. The Company has applied for patent protection for novel mutants of known genes and their uses, sequences of novel proteins and peptides and their gene sequences and uses, and novel uses for previously identified genes discovered by third parties. The Company has sought and intends to continue to seek patent protection for novel uses of genes and proteins which may have been patented by third parties. In such cases, the Company would need a license from the holder of the patent with respect to such gene or protein in order to make, use or sell such gene or protein. There can be no assurance that the Company will be able to acquire such licenses on commercially reasonable terms, if at all. The Company's patent application filings that result from the identification of genes associated with the cause or effect of a particular disease generally seek to protect the genes and encoded proteins if these genes and encoded proteins are, among other things, novel and non-obvious, as well as

therapeutic, diagnostic and drug screening methods and products, and other subject matter based upon a gene and its indication. Where information is discovered on the specific biological pathway in which the protein encoded by the gene participates, the Company also seeks to protect the newly identified protein complex as well as the methods for identifying intervention strategies. Each application typically contains multiple genes discovered for a particular disease system.

There can be no assurance that patents for the Company's products or methods will be obtained, or that, if issued, such patents will provide substantial protection or be of commercial benefit to the Company. The issuance of a patent is not conclusive as to its validity or enforceability, nor does it provide the patent holder with freedom to operate without infringing the patent rights of others. A patent could be challenged by litigation and, if the outcome of such litigation were adverse to the patent holder, competitors could be free to use the subject matter covered by the patent, or the patent holder may license the technology to others in settlement of such litigation. The invalidation of key patents owned by or licensed to the Company or non-approval of pending patent applications could increase competition, and result in a material adverse effect on the Company's business, financial condition and results of operations. In addition, there can be no assurance that any application or exploitation of the Company's technology will not infringe patents or proprietary rights of others or that licenses that might be required as a result of such infringement would be available on commercially reasonable terms, if at all. Third parties have indicated that they believe the Company may be required to obtain license(s) in order to perform certain processes that the Company uses in the conduct of its business. The Company believes that if required, such license(s) would be available on commercially reasonable terms. However, there is no assurance that such license(s) could be obtained on terms acceptable to the Company or at all.

The Company cannot predict whether its or its competitors' patent applications will result in valid patents being issued. Litigation, which could result in substantial cost to the Company, may also be necessary to enforce the Company's patent and proprietary rights and/or to determine the scope and validity of others' proprietary rights. The Company may participate in interference proceedings that may in the future be declared by the USPTO in order to determine priority of invention. Such a proceeding could result in substantial cost to the Company. There can be no assurance that the outcome of any such litigation or interference proceedings will be favorable to the Company or that the Company will be able to obtain licenses to technology that it may require or that, if obtainable, such technology can be licensed at a reasonable cost.

The Company also relies upon trade secret protection for some of its

confidential and proprietary information that is not subject matter for which patent protection is being sought. The Company believes that it has developed proprietary technology, processes and information systems for use in gene expression and biological pathway discovery, as well as in the identification of molecular targets for pharmaceutical development, including proprietary biological protocols, instrumentation, robotics and automation, software and an integrated bioinformatics system. In addition, the Company has developed a database of proprietary gene expression patterns and biological pathways which it updates on an ongoing basis and which can be accessed over the Internet. The Company has taken security measures to protect its proprietary technologies, processes, information systems and data and continues to explore ways to enhance such security. There can be no assurance, however, that such measures will provide adequate protection for the Company's trade secrets or other proprietary information. While the Company requires employees, academic collaborators and consultants to enter into confidentiality and/or non-disclosure agreements where appropriate, there can be no assurance that proprietary information will not be disclosed, that others will not independently develop substantially equivalent proprietary information and techniques or otherwise gain access to the Company's trade secrets or disclose such technology, or that the Company can meaningfully protect its trade secrets.

GOVERNMENT REGULATION

Prior to marketing, any new drug developed by the Company or its collaborative customers must undergo an extensive regulatory approval process in the United States and other countries. This regulatory process, which includes preclinical and clinical studies, as well as post-marketing surveillance to establish a compound's safety and efficacy, can take many years and require the expenditure of substantial resources. Generally, in order to gain approval of the Food and Drug Administration ("FDA"), a company first must conduct preclinical studies in the laboratory and in animal models to gain preliminary information on a compound's efficacy and to identify any safety problems. The results of these studies are submitted as part of an Investigational New Drug ("IND") application that the FDA must review before human clinical trials of an investigational drug can start. In order to commercialize any products, the Company or its collaborative customer will be required to sponsor and file INDs and will be responsible for initiating and overseeing the clinical studies to demonstrate the safety and efficacy that are necessary to obtain FDA approval of any such products. Clinical trials are normally done in three phases and generally take two to five years, but may take longer to complete. After completion of clinical trials of a new product, FDA regulatory authority marketing approval must be obtained. If the product is classified as a new drug, the Company or

its collaborative customer will be required to file a New Drug Application ("NDA") and receive approval before commercial marketing of the drug. If the product is characterized as a biologic, both a Product License Application ("PLA") and an Establishment License Application ("ELA") will be required prior to commercial marketing. The testing and approval processes require substantial time and effort and there can be no assurance that any approval will be granted on a timely basis, if at all. NDAs and PLAs submitted to the FDA can take several years to obtain approval. For marketing outside the United States, the Company will also be subject to foreign regulatory requirements governing human clinical trials and marketing approval for pharmaceutical products. The requirements governing the conduct of clinical trials, product licensing, pricing and reimbursement vary widely from country to country. Delays or rejections may also be encountered based upon changes in FDA policies for drug approval during the period of product development and FDA regulatory review of each submitted NDA in the case of new pharmaceutical agents, or PLA in the case of biologics. Similar delays also may be encountered in the regulatory approval of any diagnostic product and in obtaining regulatory approvals in foreign countries. Under current guidelines, proposals to conduct clinical research involving gene therapy at institutions supported by the National Institutes of Health ("NIH") must be approved by the Recombinant DNA Advisory Committee and the NIH. There can be no assurance that regulatory approval will be obtained for any drugs or diagnostic products developed by the Company or its collaborative customers. Furthermore, regulatory approval may impose limitations on the indicated use of a drug. Because certain of the products likely to result from the Company's disease research programs involve the application of new technologies and may be based upon a new therapeutic approach, such products may be subject to substantial additional review by various government regulatory authorities and, as a result, regulatory approvals may be obtained more slowly than for products using more conventional technologies.

Even if regulatory approval is obtained, a marketed product and its manufacturer are subject to continuing review. Discovery of previously unknown problems with a product may have adverse effects on the Company's business, financial condition and results of operations, including withdrawal of the product from the market. Violations of regulatory requirements at any stage, including preclinical studies and clinical trials, the approval process or post-approval, may result in various adverse consequences to the Company, including the FDA's delay in approval or refusal to approve a product, withdrawal of an approved product from the market or the imposition of criminal penalties against

the manufacturer and NDA or PLA holder. The Company has not submitted an IND for any product candidate, and no product candidate has been approved for commercialization in the United States or elsewhere. The Company intends to rely primarily on its collaborators to file INDs and generally direct the regulatory approval process. No assurance can be given that the Company or any of its collaborators will be able to conduct clinical testing or obtain the necessary approvals from the FDA or other regulatory authorities for any products. Failure to obtain required governmental approvals will delay or preclude the Company's collaborators from marketing drugs or diagnostic products developed by the Company or limit the commercial use of such products and could have a material adverse effect on the Company's business, financial condition and results of operations.

The Company's research and development activities involve the controlled use of hazardous materials, chemicals and various radioactive materials. The Company is subject to federal, state and local laws and regulations governing the use, storage, handling and disposal of such materials and certain waste products. Although the Company believes that its safety procedures for handling and disposing of such materials comply with the standards prescribed by federal, state and local laws and regulations, the risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of such an accident, the Company could be held liable for any damages that result and any liability could exceed the resources of the Company.

EMPLOYEES

As of December 31, 1998, the Company had 303 full and part-time employees, 81 of whom hold Ph.D. or M.D. degrees. The employee group includes engineers, physicians, molecular biologists, chemists and computer scientists. The Company believes that it maintains good relationships with its employees. None of the employees are covered by a collective bargaining agreement, nor has the Company experienced any work stoppages. The Company believes that its future success will depend in large part on its ability to attract and retain experienced and skilled employees.

ITEM 2. PROPERTIES

The Company's corporate headquarters are in New Haven, Connecticut where its primary research laboratories, bioinformatics and administrative offices are located. The Company also maintains two other locations in Branford, Connecticut and Alachua, Florida. The Company leases a total of 85,000 square feet at all three locations. The leases are generally for terms of two to five years, and usually provide renewal options for terms of up to one year.

ITEM 3. LEGAL PROCEEDINGS

The Company is not a party to any legal proceedings.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

No matters were submitted to a vote of the Company's security holders during the quarter ended December 31, 1998.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Market Information

The Company's Common Stock is traded on the Nasdaq National Market under the symbol "CRGN". The following table sets forth, for the periods indicated, the low and high closing prices per share for the Common Stock, as reported by the Nasdaq National Market, since the Common Stock commenced public trading on March 18, 1998:

<TABLE>
<CAPTION>

	1998	
	Low	High
<S>	<C>	<C>
Quarter Ended March 31, 1998 (from March 18, 1998)	$11 1/2	$12 1/2
Quarter Ended June 30, 1998	$ 6 1/4	$12 1/2
Quarter Ended September 30, 1998	$ 5	$ 8 1/8
Quarter Ended December 31, 1998	$ 5 3/8	$ 8 1/2

</TABLE>

Stockholders

As of March 16, 1999 there were approximately 103 shareholders of record of the

Common Stock and, according to the Company's estimates, 2,943 beneficial owners of the Common Stock.

Dividends

The Company has never paid dividends on its Common Stock and does not anticipate declaring any cash dividends in the foreseeable future. The Company currently intends to retain earnings, if any, to finance the development of its business.

Use of Proceeds

In connection with the Company's initial public offering, the Company sold 3,275,000 shares of its Common Stock and received net offering proceeds of $33,160,350. On March 17, 1998, the Securities and Exchange Commission declared the Company's Registration Statement on Form S-1 (File No. 333-38051) effective.

The following table sets forth the Company's cumulative use of net offering proceeds as of December 31, 1998:

<TABLE>

<S>	<C>
Construction of plant, building and facilities	$ 0
Purchase and installation of machinery and equipment	4,960,241
Purchase of Real Estate	0
Acquisition of other businesses	0
Repayment of indebtedness	1,967,631
Working Capital	7,976,766
Temporary Investments:	
Cash and cash equivalents	17,811,770
All other purposes	0

</TABLE>

The foregoing use of net offering proceeds does not represent a material change in the use of proceeds described in the Registration Statement.

ITEM 6. SELECTED FINANCIAL DATA

The selected financial data set forth below for each of the three years in the period ended December 31, 1998 are derived from the Company's balance sheets as of December 31, 1997 and 1998 and the related audited statements of operations, of stockholders' equity (deficiency) and of cash flows for the three years ended December 31, 1996, 1997 and 1998 and notes thereto as audited by Deloitte & Touche LLP, independent auditors. The selected financial data as of December 31, 1995 and 1994 and for the two years in the period ended December 31, 1995 have been derived from the related financial statements of the Company, which have also been audited by Deloitte & Touche LLP, independent auditors. The selected financial data set forth below should be read in conjunction with, and are qualified by reference to, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the Company's audited financial statements.

<TABLE>
<CAPTION>

	Year Ended December 31,				
	1998	1997	1996(1)	1995	1994
<S>	<C>	<C>	<C>	<C>	<C>
Statement of Operations Data:					
Total revenue	$ 9,257,025	$ 5,896,543	$4,422,947	$ 1,581,175	$ 257,536
Net loss attributable to common stockholders	$(18,936,920)	$(7,290,434)	$ (606,241)	$(1,088,605)	$(1,041,506)
Net loss per share attributable to common stockholders	$(1.55)	$(0.92)	$(0.12)	$(0.22)	$(0.22)
Weighted average number of common shares outstanding	12,201,006	7,888,383	5,097,073	4,915,087	4,681,256

	December 31,				
	1998	1997	1996	1995	1994
Balance Sheet Data:					
Total assets	$ 60,804,501	$26,519,029	$5,653,391	$ 1,006,816	$ 795,161
Total long-term liabilities	$ 6,983,927	$ 4,375,125	$1,908,915	$ 897,691	$ 622,591
Cash and cash equivalents	$ 43,293,995	$17,417,161	$3,298,642	$ 9,129	$ 276,890
Cash dividends declared per common share	None	None	None	None	None

</TABLE>

(1) During the year ended December 31, 1996, the Company completed its development stage activities with the signing of its first collaborative

research agreement and commenced its planned principal operations.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

CuraGen Corporation (the "Company" or "CuraGen") is a biotechnology company focusing on the application of genomics to the systematic discovery of genes, biological pathways and drug candidates in order to accelerate the discovery and development of the next generation of therapeutic, agricultural and diagnostic products. The Company was incorporated in November 1991 and, until March 1993, was engaged primarily in organizational activities, research and development of the Company's technology, grant preparation and obtaining financing. The Company has incurred losses since inception, principally as a result of research and development and general and administrative expenses in support of its operations. The Company anticipates incurring additional losses over at least the next several years as it expands its internal and collaborative gene discovery efforts, continues development of its technology and expands its operations. The Company expects that losses will fluctuate from quarter to quarter and that such fluctuations may be substantial.

In March 1998, the Company completed an initial public offering of 3,000,000 shares of its Common Stock and received net proceeds of $30,200,000. Concurrent with the completion of the initial public offering, the Company privately placed an aggregate of 956,520 shares of Common Stock and received net proceeds of $5,000,000 each from Biogen, Inc. ("Biogen") and Genentech, Inc. ("Genentech"), two of the Company's collaborative partners and existing stockholders, and $1,000,000 from the University of Florida Research Foundation, Inc. Accordingly, the combined net proceeds raised by the Company from the offering and the concurrent private placements were $41,200,000. In addition, in April 1998, the Company's underwriters exercised their option to purchase an additional 275,000 shares of Common Stock at a price of $11.50 per share to cover over-allotments, providing CuraGen with additional net proceeds of $2,900,000.

The Company anticipates that collaborations will become an increasingly important element of its business strategy and future revenues. The Company also expects that in future years government grant revenues will decrease, both in actual dollar amounts and as a percentage of revenues. Therefore, the loss of revenues from existing collaborations would have a material adverse effect on the Company's business, financial condition and results of operations. The Company's ability to generate revenue growth and become profitable is dependent, in part, on the ability of the Company to enter into additional collaborative arrangements, and on the ability of the Company and its collaborative partners to successfully commercialize products incorporating, or based on, the Company's technologies. There can be no assurance that the Company will be able to maintain or expand existing collaborations, enter into future collaborations to develop applications of its SeqCalling, GeneCalling or PathCalling technologies on terms satisfactory to the Company, if at all, or that any such collaborative arrangements will be successful.

Failure of the Company to successfully develop and market additional products over the next several years, or to realize existing product revenues, would have a material adverse effect on the Company's business, financial condition and results of operations. Royalties or other revenue generated from commercial sales of products developed by using the Company's technologies are not expected for at least several years, if at all.

Results of Operations

Years Ended December 31, 1998 and 1997

Revenue. Revenue for the year ended December 31, 1998 was $9,257,025, representing an increase of $3,360,482, or 57%, compared to $5,896,543 in 1997. This increase was largely due to an increase in collaboration revenue due to additional revenue recorded under the Company's arrangements with Pioneer Hi-Bred International, Inc. ("Pioneer Hi-Bred") and Biogen, offset by a decrease in revenue received from Genentech under the Evaluation Agreement. See Note 4 of Notes to Financial Statements. In April 1998, Pioneer Hi-Bred doubled its annual collaboration funding to the Company to a minimum of $5,000,000. The increase in total revenue was also due to additional grant revenue recorded as a result of timing issues in connection with grant expenses incurred.

Operating Expenses. Grant research expenses for the year ended December 31, 1998 were $1,858,502, representing a decrease of $2,757,384, or 60%, compared to $4,615,886 in 1997. The decrease in grant research expenses was primarily attributable to the completion of two federal grants during the first quarter of 1998, thereby decreasing the costs incurred by the Company in support of these grants. As a result of the completion of the two federal grants, the Company foresees a continued decline in grant research expenses in future years, unless

additional grant awards are received.

Collaborative research and development expenses for the year ended December 31, 1998 were $18,130,893, representing an increase of $13,004,233, or 254%, compared to $5,126,660 for the year ended December 31, 1997. The increase in collaborative research and development expenses was primarily attributable to increased expenses as the Company hired additional research and development personnel, increased purchases of laboratory supplies, increased equipment depreciation and increased facilities expenses in connection with the expansion of the Company's internal and collaborative research efforts. Future collaborative research and development expenses are expected to continue to increase as additional personnel are hired and research and development facilities are expanded to accommodate additional collaborations and expanded internal research activities.

General and administrative expenses for the year ended December 31, 1998 increased $5,647,454, or 162%, to $9,128,705 as compared to $3,481,251 for the year ended December 31, 1997. This increase was primarily attributable to the expansion of administration facilities, the incurrence of related depreciation expense, payment of legal fees, compensation related expenses in connection with the separation agreement discussed in Note 8 of Notes to Financial Statements, amortization of stock-based compensation and hiring of additional personnel to support the future growth of the Company. Over the next several years, the Company anticipates that percentage increases in general and administrative expenses will become more proportionate to percentage increases in collaborative research and development expenses.

Interest Income (Expense), Net. Net interest income for the year ended December 31, 1998 of $1,432,590 increased $1,327,346 compared to $105,244 for 1997. This increase was primarily gross interest received on larger cash and cash equivalent balances held by the Company as a result of the Company's receipt of proceeds from its initial public offering and concurrent private placements of securities. Gross interest expense for the year ended December 31, 1998 of $994,804 represented an increase of $310,267, or 45%, compared to $684,537 for 1997. This increase in gross interest expense was primarily attributable to additional capital lease obligations for equipment entered into during the last twelve months, which enabled the Company to support its research and development activities.

Net Loss Attributable to Common Stockholders. For the year ended December 31, 1998, the Company reported a net loss attributable to common stockholders of $18,936,920, or ($1.55) per share as compared to $7,290,434, or ($0.92) per share in 1997. Since inception, the Company has incurred operating losses, and as of December 31, 1998 had an accumulated deficit of $28,939,508 and therefore, has not paid any federal income taxes. Realization of deferred tax assets is dependent on future earnings, if any, the timing and amount of which are uncertain. Accordingly, valuation allowances in amounts equal to the deferred income tax assets have been established to reflect these uncertainties in all periods presented.

Years Ended December 31, 1997 and 1996

Revenue. Revenue for the year ended December 31, 1997 was $5,896,543, representing an increase of $1,473,596, or 33%, compared to $4,422,947 in 1996. The increase was largely due to additional collaboration revenue of $2,441,549 recorded in 1997, primarily under the Company's arrangements with Pioneer Hi-Bred, Genentech and Biogen. The collaboration revenue increase was offset by a decrease in grant revenue during 1997 of $967,953 as the Company changed its revenue focus from federal grants to collaborative research.

Operating Expenses. Grant research expenses for the year ended December 31, 1997 were $4,615,886, representing an increase of $1,550,746, or 51%, compared to 1996. The increase in grant research expenses was primarily attributable to increased personnel costs in support of the Company's obligations under its federal grants.

Collaborative research and development expenses for the year ended December 31, 1997 were $5,126,660, representing an increase of $4,675,765, or 1037%, compared to 1996. The increase in collaborative research and development expenses was primarily attributable to increased personnel expenses as the Company hired additional research and development personnel, increased purchases of laboratory supplies, increased equipment depreciation and increased facilities expenses in connection with the expansion of the Company's internal and collaborative research efforts.

General and administrative expenses for the year ended December 31, 1997 were $3,481,251, representing an increase of $2,340,926, or 205%, compared to $1,140,325 for 1996. The increase was primarily attributable to the hiring of additional personnel, the expansion of administration facilities and the incurrence of related depreciation expense as the Company increased its executive and administrative staffing in anticipation of future revenue growth.

Interest Income (Expense), Net. Net interest income for the year ended December 31, 1997 of $105,244 increased $460,966 compared to net interest expense of $355,722 for 1996. This increase was primarily a result of gross interest received on larger cash and cash equivalent balances held by the Company as a result of the Company's receipt of proceeds from various private placements of securities. Gross interest expense for the year ended December 31, 1997 of $684,537 increased $307,967, or 81%, compared to $376,570 for 1996. This increase was due to additional capital lease obligations entered into during the year, which enabled the Company to support research and development activities primarily through equipment acquisitions. This increase was also due to the additional interest expense incurred in connection with the $600,000 promissory note due to Connecticut Innovations, Inc. See Note 5 of Notes to Financial Statements.

Net Loss Attributable to Common Stockholders. For the year ended December 31, 1997, the Company reported a net loss attributable to common stockholders of $7,290,434, or ($0.92) per share as compared to $606,241, or ($0.12) per share in 1996. Since inception, the Company has incurred operating losses, and as of December 31, 1997 had an accumulated deficit of $10,511,023 and therefore, has not paid any federal income taxes. Realization of deferred tax assets is dependent on future earnings, if any, the timing and amount of which are uncertain. Accordingly, valuation allowances in amounts equal to the deferred income tax assets have been established to reflect these uncertainties in all periods presented. See Note 6 of Notes to Financial Statements.

Liquidity and Capital Resources

As of December 31, 1998, the Company had $43,293,995 in cash and cash equivalents, compared to $17,417,161 as of December 31, 1997. This increase was primarily a result of the Company's receipt of net proceeds of $41,200,000 from the Company's initial public offering, and concurrent private placements with Biogen, Genentech and the University of Florida Research Foundation, Inc., offset by operating losses in support of the Company's research and development activities. The Company has financed its operations since inception primarily through its initial public offering, private placements of equity securities, government grants, collaborative research and development agreements and capital leases. As of December 31, 1998, the Company had recognized $21,437,129 of cumulative sponsored research revenues from collaborative research agreements and government grants. To date, inflation has not had a material effect on the Company's business.

The Company's investing activities have consisted primarily of acquisitions of equipment and expenditures for leasehold improvements. At December 31, 1998, the Company's gross investment in equipment, computers and leasehold improvements since inception was $20,100,403. At December 31, 1998, equipment with a gross book value of $11,091,434 secures the Company's equipment financing facility. The Company anticipates that net proceeds of approximately $10,000,000 from its available lease line will be utilized for capital expenditures over the next twelve months, primarily for the purchase of additional equipment and improvements at the Company's Branford, Connecticut and Alachua, Florida laboratories. The Company had approximately $1,400,000 in material commitments for capital expenditures at December 31, 1998.

Net cash used in operating activities was $9,184,466 for the twelve months ended December 31, 1998, compared to $2,946,349 for the same period ended December 31, 1997. The increase of $6,238,117 can be attributed to an increase in the Company's net loss and accrued expenses, primarily offset by increases in accounts payable, accrued bonuses, deferred revenue and depreciation and amortization.

As of December 31, 1998, the Company had net operating loss carryforwards of approximately $27,400,000 to offset federal and state income taxes. Federal net operating loss carryforwards expire beginning in 2008, and Connecticut net operating loss carryforwards began expiring in 1998. The Company also had research and development tax credit carryforwards at December 31, 1998, estimated to be approximately $1,000,000 and $2,700,000 for federal and state income tax purposes, respectively.

Year 2000 Compliance

The "Year 2000 Problem" arose because many existing computer programs use only the last two digits to refer to a year. Therefore, these computer programs may recognize a year that ends in "00" as the Year 1900 rather than the Year 2000. For some companies, the Year 2000 problem could result in a significant disruption of operations and an inability to process certain transactions.

Strategic Plan

Early in 1998, in conjunction with its initial public offering, the Company assessed its internal computer systems. It was determined that, because its computer applications use four digits to identify a year in the field date, the

Company was in fact internally compliant with Year 2000 requirements. However, the Company has developed a strategic plan to estimate the potential risks related to third parties with which it has relationships, including third

parties who provide non-information technology systems to the Company. The third parties include financial institutions, vendors, payroll service providers, collaborative partners, utility companies and granting agencies. If any of these third parties encounter Year 2000 problems, it could potentially have a significant outcome on the ability of the Company to effectively continue its normal daily operations.

The initial stage of the Company's strategic plan included distribution of inquiry letters to those third parties with whom the Company has a significant relationship. As of February 12, 1999 the Company had received back 50 % of the inquiries that were sent out. The Company is in the process of completing the initial stage of its strategic plan by undertaking an internal evaluation of the responses received. Upon learning that certain third parties are not Year 2000 compliant, the Company may be required to manually process transactions, delay vendor payments, and/or issue manual checks to employees in place of direct deposits. These processes, if necessary, would be a part of the second stage - implementation, in which the Company would correct and/or replace any vendors or vendor software that is not Year 2000 compliant, as soon as is feasible.

Costs

There have been no historical costs incurred to date by the Company related to Year 2000 compliance. The Company expects to complete the initial stage of its Year 2000 strategic plan by the end of the first quarter of 1999. The total cost of this stage is not expected to exceed $25,000. While the Company cannot predict what impact the Year 2000 problem may have on third parties, it does not currently believe that it will incur material costs in the implementation stage of resolving potential Year 2000 problems of third parties with whom it electronically interacts.

Risks

Until the initial stage of the Company's strategic plan is complete, the Company cannot accurately assess the potential risks associated with non-compliance of its external third parties. While it is understood by the Company that the potential effect on results of operations could be serious and could have a material adverse affect on the Company's business or financial condition, at this time management has not determined the entire potential level of risk.

Contingency Plan

At the present time, a contingency plan has not been developed. The Company will continue to monitor the need for a contingency plan based on the results of its Year 2000 compliance strategic plan.

Recently Enacted Pronouncements

The AICPA has issued Statement of Position ("SOP") 98-1, "Accounting for Costs of Computer Software Developed or Planned for Internal Use". This SOP provides guidance on accounting for the costs of computer software developed or obtained for internal use. This SOP requires that the following costs be capitalized: 1) external direct costs of materials and services incurred in developing or obtaining internal-use computer software; 2) payroll and payroll-related costs for employees who are directly associated with and devote time to the internal-use software project (to the extent of time spent directly on the project); and 3) interest costs. Computer software costs that are research and development should be expensed as incurred. In addition, training costs should be expensed as incurred. This statement is effective for financial statements for fiscal years beginning after December 15, 1998, however, earlier application is encouraged. The Company will adopt this pronouncement in 1999 and has not yet determined the effect of SOP 98-1 on its financial statements.

Certain Factors That May Affect Results of Operations

This report may contain forward-looking statements that are subject to certain risks and uncertainties. These statements include statements regarding (i) the expected benefits, effects, efficiency and performance of the Company's services and products, the Company's ability (a) to overcome the limitations of competing technologies, processes and databases by condensing key steps in gene-based discovery and development, (b) to develop, through its products and services, the next generation of therapeutic products for important complex diseases, (c) to populate its databases, and (d) to develop, in a timely fashion, a broad portfolio of research programs that encompass drug discovery, drug development and pharmacogenomics, (iii) the capacity of the Company's products to predict the efficiency and safety of drugs already on the market, (iv) the suitability of Company-discovered genes and proteins involved in diabetes, hypertension and ischemic stroke as targets for small molecule drug development, (v) the expected future levels of losses, operating expenses and material commitments, and (vi)

the Company's Year 2000 readiness. Such statements are based on management's current expectations and are subject to a number of factors and uncertainties that could cause actual results to differ materially from those described in the forward-looking statements. The Company cautions investors that there can be no assurance that actual results or business conditions will not differ materially from those projected or suggested in such forward-looking statements as a result of various

factors, including, but not limited to, the following: the Company's early stage of development, technological uncertainty and product development risks, uncertainty of additional funding, reliance on research collaborations, competition, the Company's ability to protect its patents and proprietary rights and uncertainties relating to commercialization rights. For further information, refer to the more specific risk and uncertainties discussed throughout this discussion and analysis.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The Company has reviewed the provisions of Financial Reporting Release No. 48 "Disclosure of Accounting Policies for Derivative Financial Instruments and Derivative Commodity Instruments, and Disclosure of Quantitative and Qualitative Information about Market Risk Inherent in Derivative Financial Instruments, Other Financial Instruments and Derivative Commodity Instruments." The Company had no holdings of derivative financial instruments, commodity-based instruments or other long-term debt obligations at December 31, 1998.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

CURAGEN CORPORATION
BALANCE SHEETS

<TABLE>
<CAPTION>

	December 31,	
	1997	1998
<S>	<C>	<C>
ASSETS		
Current assets:		
Cash and cash equivalents	$17,417,161	$43,293,995
Grants receivable	421,564	600,241
Accounts receivable	166,750	10,400
Other current assets	13,883	1,150
Prepaid expenses	157,480	505,203
Stock issuance costs	1,083,251	-
Total current assets	19,260,089	44,410,989
Property and equipment, net	6,920,196	15,900,281
Notes receivable - related parties	100,000	93,500
Other assets	238,744	399,731
Total assets	$26,519,029	$60,804,501
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$1,106,134	$2,778,000
Accrued payroll - related party	308,125	-
Accrued bonuses	-	841,386
Accrued expenses	1,345,262	480,450
Accrued payroll	-	324,924
Deferred revenue	375,000	4,875,000
Deferred rent	-	103,406
Current portion of obligations under capital leases	1,386,896	1,942,215
Total current liabilities	4,521,417	11,345,381
Long-term liabilities:		
Deferred rent, net of current portion	227,972	196,494
Interest payable	21,000	21,000
Obligations under capital leases, net of current portion	4,126,153	6,766,433
Total long-term liabilities	4,375,125	6,983,927
Commitments and contingencies		
Redeemable Common Stock	3,940,312	-

Stockholders' equity:		
Preferred Stock - Series B	1,459,196	-
Common Stock; $.01 par value, issued and outstanding shares 8,580,112 at December 31, 1997, and 13,316,757 at December 31, 1998	85,801	133,168
Additional paid-in capital	23,861,665	72,050,465
Accumulated deficit	(10,511,023)	(28,939,508)
Unamortized stock-based compensation	(1,213,464)	(768,932)
Total stockholders' equity	13,682,175	42,475,193
Total liabilities and stockholders' equity	$26,519,029	$60,804,501

</TABLE>

See accompanying notes to financial statements

CURAGEN CORPORATION
STATEMENTS OF OPERATIONS

<TABLE>
<CAPTION>

	Year Ended December 31,		
	1996	1997	1998
<S>	<C>	<C>	<C>
Revenue:			
Grant revenue	$4,047,947	$3,079,994	$ 3,182,025
Collaboration revenue	375,000	2,816,549	6,075,000
Total revenue	4,422,947	5,896,543	9,257,025
Operating expenses:			
Grant research	3,065,140	4,615,886	1,858,502
Collaborative research and development	450,895	5,126,660	18,130,893
General and administrative	1,140,325	3,481,251	9,128,705
Total operating expenses	4,656,360	13,223,797	29,118,100
Loss from operations	(233,413)	(7,327,254)	(19,861,075)
Interest income (expense), net	(355,722)	105,244	1,432,590
Net loss	(589,135)	(7,222,010)	(18,428,485)
Preferred dividends	(17,106)	(68,424)	(508,435)
Net loss attributable to common stockholders	($606,241)	($7,290,434)	($18,936,920)
Basic and diluted net loss per share attributable to common stockholders	($0.12)	($0.92)	($1.55)
Weighted average number of shares used in computing basic and diluted net loss per share attributable to common stockholders	5,097,073	7,888,383	12,201,006

</TABLE>

See accompanying notes to financial statements

CURAGEN CORPORATION
STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (DEFICIENCY)
Year Ended December 31, 1996, 1997 and 1998

<TABLE>
<CAPTION>

	Number of Shares	Common Stock ($.01 par value)	Number of Shares	Preferred Stock	Additional Paid-in Capital	Accumulated Deficit	Unamortized Stock-Based Compensation	Total
<S>	<C>	<C>	<C>	<C>	<C>	<C>	<C>	<C>
January 1, 1996	5,021,731	$ 50,218	-	-	$1,558,278	($2,699,878)	-	($1,091,392)

Exercise of Common Stock warrants	100,000	1,000	-	-	151,000	-	-	152,000
Issuance of Preferred Stock - Series A	-	-	307,167	$1,800,000	-	-	-	1,800,000
Issuance of Preferred Stock with warrants - Series B	-	-	175,000	1,373,666	376,334	-	-	1,750,000
Issuance of options to non-employees	-	-	-	-	96,318	-	-	96,318
Preferred dividends	-	-	-	17,106	(17,106)	-	-	-
Net loss	-	-	-	-	-	(589,135)	-	(589,135)
December 31, 1996	5,121,731	51,218	482,167	3,190,772	2,164,824	(3,289,013)	-	2,117,801
Issuance of Common Stock	39,746	397	-	-	162,561	-	-	162,958
Issuance of Preferred Stock with warrants - Series C	-	-	2,011,468	11,787,202	-	-	-	11,787,202
Issuance of Preferred Stock - Series D	-	-	1,000,000	7,500,000	-	-	-	7,500,000
Issuance of Preferred Stock - Series E	-	-	100,000	1,000,001	-	-	-	1,000,001
Issuance of options	-	-	-	-	736,781	-	-	736,781
Unamortized stock-based compensation	-	-	-	-	1,213,474	-	(1,213,464)	-
Issuance of warrants - capital lease obligations	-	-	-	-	59,520	-	-	59,520
Amortization of warrants - capital lease obligations	-	-	-	-	(5,410)	-	-	(5,410)
Preferred dividends	-	-	-	68,424	(68,424)	-	-	-
Adjustment of Redeemable Common Stock	-	-	-	-	(2,454,668)	-	-	(2,454,668)
Adjustment to reflect automatic conversion of Preferred Stock	3,418,635	34,186	(3,418,634)	(22,087,203)	22,053,017	-	-	-
Net loss	-	-	-	-	-	(7,222,010)	-	(7,222,010)
December 31, 1997	8,580,112	85,801	175,000	1,459,196	23,861,665	(10,511,023)	(1,213,464)	13,682,175
Issuance of Common Stock	4,231,520	42,315	-	-	48,620,165	-	-	48,662,480
Conversion of Redeemable Common Stock	291,875	2,919	-	-	3,937,393	-	-	3,940,312
Redemption of Preferred Stock - Series B	-	-	(175,000)	(1,750,000)	-	-	-	(1,750,000)
Stock issuance costs	-	-	-	-	(4,509,612)	-	-	(4,509,612)
Amortization of stock-based compensation	-	-	-	-	-	-	444,532	444,532
Amortization of warrants - capital lease obligations	-	-	-	-	(16,232)	-	-	(16,232)
Preferred dividends	-	-	-	290,804	(508,434)	-	-	(217,631)
Exercise of employee stock options	213,250	2,133	-	-	375,767	-	-	377,900
Issuance of options to non-employees	-	-	-	-	289,754	-	-	289,754
Net loss	-	-	-	-	-	(18,428,485)	-	(18,428,485)
December 31, 1998	13,316,757	$133,168	-	-	$72,050,465	($28,939,508)	($768,932)	$42,475,193

</TABLE>

See accompanying notes to financial statements

CURAGEN CORPORATION
STATEMENTS OF CASH FLOWS

<TABLE>
<CAPTION>

Year Ended December 31,

	1996	1997	1998
<S>	<C>	<C>	<C>
Cash flows from operating activities:			
Net loss	($589,135)	($7,222,010)	($18,428,485)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation and amortization	366,283	1,226,696	2,668,142
Non-monetary compensation	96,318	736,781	894,286
Changes in assets and liabilities:			
Grants receivable	(260,633)	44,525	(178,677)
Accounts receivable	(200,000)	33,250	156,350
Other current assets	2,055	(852)	12,733
Prepaid expenses	(10,468)	(134,529)	(347,723)
Other assets	(56,548)	(180,225)	(198,259)
Accounts payable	311,457	754,137	1,671,866
Accrued payroll-related party	93,750	-	(308,125)
Accrued bonuses	-	-	841,386
Accrued expenses	274,337	933,590	(864,812)
Accrued payroll	-	-	324,924
Deferred revenue	(265,079)	375,000	4,500,000
Deferred rent	(17,246)	227,972	71,928
Interest payable	268,807	259,316	-
Net cash provided by (used in) operating activities	13,898	(2,946,349)	(9,184,466)
Cash flows from investing activities:			
Acquisitions of property and equipment	(248,033)	(2,486,760)	(11,560,246)
Loans to related parties	-	(100,000)	(153,500)
Net cash used in investing activities	(248,033)	(2,586,760)	(11,713,746)
Cash flows from financing activities:			
Payments on capital lease obligations	(178,352)	(879,594)	(1,872,001)
Proceeds from issuance of loan payable	175,000	-	-
Payment of loan payable	(175,000)	-	-
Proceeds from issuance of Common Stock	252,000	-	48,662,480
Proceeds from issuance of Preferred Stock	3,450,000	20,387,203	-
Proceeds from sale-leaseback of equipment	-	1,227,270	5,000,659
Payments of stock issuance costs	-	(1,083,251)	(3,426,361)
Proceeds from exercise of employee stock options	-	-	377,900
Redemption of Series B Preferred Stock	-	-	(1,967,631)
Net cash provided by financing activities	3,523,648	19,651,628	46,775,046
Net increase in cash and cash equivalents	3,289,513	14,118,519	25,876,834
Cash and cash equivalents, beginning of year	9,129	3,298,642	17,417,161
Cash and cash equivalents, end of year	$3,298,642	$17,417,161	$43,293,995
Supplemental cash flow information:			
Interest paid	$107,763	$423,655	$988,533
Noncash financing transactions:			
Reduction of note and related interest payable upon exercise of Common Stock warrants	-	$1,485,644	-
Reduction of accrued expenses upon issuance of Common Stock	-	162,958	-
Obligations under capital leases	$979,096	5,302,666	$5,051,378
Preferred Stock subscription receivable	100,000	-	-
Adjustment of Redeemable Common Stock	-	2,454,668	-

</TABLE>

See accompanying notes to financial statements

1. Organization and Summary of Significant Accounting Policies

Organization--CuraGen Corporation (the "Company" or "CuraGen") is a biotechnology company focusing on the application of genomics to the systematic discovery of genes, biological pathways and drug candidates in order to accelerate the discovery and development of the next generation of therapeutic, agricultural and diagnostic products. The Company was incorporated in November 1991 and, until March 1993, was engaged primarily in organizational activities, research and development of the Company's technology, grant preparation and obtaining financing.

Revenue Recognition--The Company has entered into certain collaborative research agreements which provide for the partial or complete funding of specified projects in exchange for access to and certain rights in the resultant data discovered under the related project. Revenue is recognized based upon work

performed or upon the attainment of certain benchmarks specified in the related agreements (see Note 4). Grant revenue is recognized as related costs qualifying under the terms of the grants are incurred. Grant revenue is derived solely from federal and Connecticut agencies (see Note 7). Deferred revenue arising from payments received from grants and collaborative agreements is recognized as income when earned.

Cash and Cash Equivalents--The Company considers investments readily convertible into cash with a maturity of three months or less at the date of purchase to be cash equivalents.

Property and Equipment--Property and equipment are recorded at cost. Equipment under capital leases is recorded at the lower of the net present value of the minimum lease payments required over the term of the lease or the fair value of the assets at the inception of the lease. Additions, renewals and betterments that significantly extend the life of an asset are capitalized. Minor replacements, maintenance and repairs are charged to operations as incurred. Equipment is depreciated over the estimated useful lives of the related assets, ranging from three to seven years, using the straight-line method. Equipment under capital leases is amortized over the shorter of the estimated useful life or the terms of the lease, using the straight-line method. Leasehold improvements are amortized over the term of the lease, using the straight-line method. When assets are retired or otherwise disposed of, the assets and related accumulated depreciation or amortization are eliminated from the accounts and any resulting gain or loss is reflected in income. For income tax purposes, depreciation is computed using various accelerated methods and, in some cases, different useful lives than those used for financial reporting purposes.

Deferred Real Estate Commissions--Deferred real estate commissions were paid in January 1997 in connection with the signing of the operating lease in New Haven, Connecticut (see Note 3). These costs, which are included in Other assets, are amortized over the remaining life of the lease as of the date of occupancy, 69 months, using the straight-line method. Accumulated amortization aggregated $8,993 and $20,984, respectively, as of December 31, 1997 and 1998.

Licensing Fees--Licensing fees for various research and development purposes were paid during 1998. The costs, which are included in Other assets, are amortized over the lives of the licenses. Accumulated amortization and related amortization expense aggregated $30,288 as of December 31, 1998.

Patent Application Costs--Costs incurred in filing for patents are charged to operations, until such time as it is determined that the filing will be successful. When it becomes evident with reasonable certainty that an application will be successful, the costs incurred in filing for patents will begin to be capitalized. Capitalized costs related to successful patent applications will be amortized over a period not to exceed twenty years or the remaining life of the patent, whichever is shorter, using the straight-line method. During 1996, 1997, and 1998, all patent application costs have been charged to operations.

Research and Development Costs--Research and development costs are charged to operations as incurred. Grant research expenses include all direct research and development costs incurred related to specific grant awards and programs. All remaining research and development costs are incurred for the development and maintenance of current and future research collaboration agreements, and accordingly, have been classified as collaborative research and development expenses.

Stock-Based Compensation--In October 1995, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards No. 123 "Accounting for Stock-Based Compensation" ("SFAS 123"), which was effective for the Company beginning January 1, 1996. SFAS 123 requires expanded disclosures of stock-based compensation arrangements with employees and non-employees and encourages (but does not require) compensation cost to be measured based on the fair value of the equity instruments awarded to employees. Companies are permitted to continue to apply Accounting Principles Board ("APB") No. 25, which recognizes compensation cost based on the intrinsic value of the equity instruments awarded. The Company will continue to

apply APB No. 25 to its stock-based compensation awards to employees. For equity instruments awarded to non-employees, the Company records the transactions based upon the consideration received for such awards or the fair value of the equity instruments issued, whichever is more reliably measurable. The Company recorded stock-based compensation expense attributable to non-employees totaling $96,318, $277,247 and $289,752 for the years ended December 31, 1996, 1997 and 1998, respectively. For options issued to employees, the Company records the transactions based upon the difference between the option strike price and the estimated fair market value as of the date of issuance. Stock-based compensation associated with options granted to employees during 1997 amounted to $1,672,998 and is being expensed by the Company over the vesting period of the underlying options. During 1998, no stock-based compensation was recorded as all options granted to employees were issued at the estimated fair market value as of the

date of issuance. The Company recorded amortization of stock-based compensation expense for options issued to employees of $459,534 and $444,532 for the years ended December 31, 1997 and 1998, respectively.

Income Taxes--Income taxes are provided for as required under Statement of Financial Accounting Standards No. 109, "Accounting for Income Taxes" ("SFAS 109"). This Statement requires the use of the asset and liability method in determining the tax effect on future years of the "temporary differences" between the tax basis of assets and liabilities and their financial reporting amounts.

Fair Value of Financial Instruments--Statement of Financial Accounting Standards No. 107, "Disclosures about Fair Value of Financial Instruments" ("SFAS 107"), requires the disclosure of fair value information for certain assets and liabilities, whether or not recorded in the balance sheets, for which it is practical to estimate that value. The Company has the following financial instruments: cash, receivables, accounts payable and accrued expenses, and certain long-term liabilities. Additionally, the Company had Redeemable Common Stock at December 31, 1997 (see Note 5). The Company considers the carrying amount of these items, excluding the Redeemable Common Stock, to approximate fair value.

Conversion of Preferred Stock--The accompanying financial statements retroactively reflect the conversion of all outstanding shares of Series A, C, D and E Preferred Stock (Convertible Preferred Stock) to Common Stock on a one for one basis. The above conversion has been presented since the Company amended its Certificate of Incorporation in December 1997 to provide that the Series A, C, D and E Preferred Stock would be automatically converted into shares of Common Stock upon the closing of a firm committment underwritten public offering of the Common Stock. In March 1998, upon the closing of the Company's initial public offering, the foregoing conversion was completed.

Recently Enacted Pronouncements--The AICPA has issued Statement of Position ("SOP") 98-1, "Accounting for Costs of Computer Software Developed or Planned for Internal Use". This SOP provides guidance on accounting for the costs of computer software developed or obtained for internal use. This SOP requires that the following costs be capitalized: 1) external direct costs of materials and services incurred in developing or obtaining internal-use computer software; 2) payroll and payroll-related costs for employees who are directly associated with and devote time to the internal-use software project (to the extent of time spent directly on the project); and 3) interest costs. Computer software costs that are research and development should be expensed as incurred. In addition, training costs should be expensed as incurred. This statement is effective for financial statements for fiscal years beginning after December 15, 1998, however, earlier application is encouraged. The Company will adopt this pronouncement in 1999 and has not yet determined the effect of SOP 98-1 on its financial statements.

Use of Estimates--The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

2. Property and Equipment

Property and equipment consisted of the following:

<TABLE>
<CAPTION>

	December 31,	
	1997	1998
<S>	<C>	<C>
Laboratory equipment	$ 985,654	$ 6,570,300
Leased equipment	6,593,064	11,091,434
Leasehold improvements	399,996	904,254
Office equipment	677,318	1,534,415
Total property and equipment	8,656,032	20,100,403
Less accumulated depreciation and amortization	1,735,836	4,200,122
Total property and equipment, net	$6,920,196	$15,900,281

</TABLE>

3. Leases

Capital Leases

In April 1997, the Company signed a lease-financing commitment to receive

$4,000,000 to purchase equipment and expand its facilities. The lease commitment provides for a payment term of 48 months per individual lease schedule. In addition, the commitment provides for the issuance to the lessor of two warrants (the "First Warrant" and the "Second Warrant") to purchase shares of the Common Stock. The First Warrant was issued in April 1997 and entitles the lessor to purchase 11,111 shares of Common Stock at an exercise price of $9.00 per share. The Second Warrant was issued in September 1997 when the Company's aggregate equipment cost under the agreement exceeded $2,000,000. The Second Warrant entitles the lessor to purchase 10,000 shares of Common Stock at an exercise price of $10.00 per share. The value ascribed to the warrants was $59,520. In June 1998, the Company signed a lease-financing commitment to receive $5,000,000 to purchase various laboratory, office and computer equipment. The lease commitment provides for payment terms of 60 months per individual lease schedule.

The Company has also entered into other capital lease agreements to finance the purchase of equipment. Leased equipment under all such agreements consisted of the following:

<TABLE>
<CAPTION>

	December 31,	
	1997	1998
<S>	<C>	<C>
Leased equipment	$6,593,064	$11,091,434
Less accumulated amortization	1,133,842	3,037,429
Total Leased equipment, net	$5,459,222	$ 8,054,005

</TABLE>

The Company financed leased assets with costs of $979,096, $5,302,666 and $5,051,378 for the years ended December 31, 1996, 1997 and 1998, respectively. These arrangements have terms of three to five years with interest rates ranging from approximately 10% to 26%. At the end of the respective lease terms, the Company has the right to either return the equipment to the lessor or purchase the equipment at between $1 and 11% of the then fair market value of the equipment.

The future minimum lease payments under capital lease obligations at December 31, 1998 were as follows:

<TABLE>

<S>	<C>
Within 1 year	$ 2,753,825
Within 1 to 2 years	2,747,707
Within 2 to 3 years	2,787,332
Within 3 to 4 years	1,233,772
Within 4 to 5 years	1,233,000
Total minimum lease payments	10,755,636
Less amounts representing interest	2,046,988
Present value of future minimum lease payments	8,708,648
Less current portion of obligations	1,942,215
Obligations under capital leases, net of current portion	$ 6,766,433

</TABLE>

Operating Leases

In December 1996, the Company entered into a six-year lease agreement for 26,000 square feet to house its principal administrative and research facilities at 555 Long Wharf Drive, New Haven, Connecticut. In October 1997 and August 1998, the Company amended that lease to increase its leased space to a total of 31,000 and 36,000 square feet, respectively. The Company may renew the lease for two additional terms of five years each. In May 1998, the Company entered into a lease agreement, expiring in May 2000, for its 32,000 square foot research facility in Branford, Connecticut. The lease agreement may be renewed for three additional terms of two years each. An additional 12,000 square feet at the Company's third research location in Alachua, Florida is also leased under an agreement which may be renewed for an additional one year term, after the expiration date in July 1999.

Total rent expense under all operating leases for 1996, 1997 and 1998 was approximately $77,200, $487,300 and $1,016,050, respectively.

The future minimum rental payments for all operating leases are as follows as of December 31, 1998:

<TABLE>
<CAPTION>

Year	
<S>	<C>
1999	$1,295,135
2000	924,229
2001	736,729
2002	772,667
Total	$3,728,760

</TABLE>

4. Collaborations

Pioneer Hi-Bred International, Inc.

Effective June 1, 1997, the Company entered into a Collaborative Research and License Agreement with Pioneer Hi-Bred International, Inc. ("Pioneer Hi-Bred") whereby the Company is to perform research that will be funded by Pioneer Hi-Bred. In conjunction with the execution of this agreement, Pioneer Hi-Bred made an equity investment of $7,500,000 in the form of 1,000,000 shares of Series D Convertible Preferred Stock (see Note 5). In addition, Pioneer Hi-Bred paid the Company $2,500,000 per year, for the first 10 months, in quarterly installments due in advance, on or before the first day of each calendar quarter, with the first payment prorated. In March of 1998, Pioneer Hi-Bred increased the minimum annual research funding to $5,000,000 per year. Pioneer Hi-Bred has the right to terminate the research program at any time upon a breach by the Company and on three months' written notice at any time after May 2000.

The $5,000,000 per year fee is based upon an established number of CuraGen employees whom will be devoted to the Pioneer Hi-Bred research. In accordance with the Company's revenue recognition policy as described in Note 1, revenue has been recorded based upon work performed. For the years ended December 31, 1997 and 1998, the Company recorded revenue of $1,458,333 and $4,375,000, which represented 25% and 47% of total revenue, respectively, related to this agreement. In addition, $1,250,000 has been received from Pioneer Hi-Bred for which the related services have not been performed and, therefore, such amount is recorded as deferred revenue at December 31, 1998.

Genentech, Inc.

In June 1996, the Company entered into a Pilot Research Services and Evaluation Agreement with Genentech, Inc. ("Genentech") pursuant to which the Company performed certain research services for a $200,000 fee. The pilot collaboration was superseded by the Evaluation Agreement, signed and effective December 27, 1996, pursuant to which the Company performed additional research services during 1997 for a research fee of $667,000 payable in four equal installments of $166,750. The Company completed the research within four months of the receipt of tissue samples from Genentech as required by the Evaluation Agreement and recorded $667,000 as revenue, which represented 11% of total revenues for the year ended December 31, 1997. The entire accounts receivable balance at December 31, 1997 was due from Genentech. In connection with the execution of the Evaluation Agreement, Genentech made an equity investment of $1,800,000 in the form of 307,167 shares of Series A Convertible Preferred Stock (see Note 5).

In November 1997, CuraGen and Genentech entered into a research collaboration and database subscription arrangement to discover novel genes and therapeutics. Pursuant to the agreement, Genentech purchased $5,000,000 of Common Stock in a private placement concurrent with the initial public offering at the initial public offering price. Genentech also agreed to provide CuraGen with an interest-bearing loan facility which could in the aggregate reach $26,000,000 if the research program continues beyond its initial three year term. The loan facility contains annual borrowing limits and the outstanding principal and interest under the loan facility are payable five years from the date of the agreement. Subject to certain limitations, during the term of the agreement, and after the end of the first year, the drawn-down portion of the loan is convertible at CuraGen's option into CuraGen non-voting Common Stock, par value $.01 per share (the "Non-Voting Common Stock") based upon a formula that approximates the prevailing market price of the Company's Common Stock. If issued, the Non-Voting Common Stock is convertible, at Genentech's option, into Common Stock (i) at any time, at Genentech's option or (ii) upon the sale or transfer of the Non-Voting Common Stock to a non-affiliated party. Genentech will additionally provide funding of up to $24,000,000 over five years if the database subscription arrangement is not terminated, the research collaboration continues for the full five-year term and Genentech elects to retain licenses to its discoveries. Genentech has an option to acquire licenses to certain discoveries arising from the collaboration.

Biogen, Inc.

In October 1997, CuraGen and Biogen, Inc. ("Biogen") entered into a research collaboration and database subscription arrangement to discover novel genes and therapeutics. Pursuant to the agreement, Biogen purchased $5,000,000 of Common Stock in a private placement concurrent with the initial public offering at the initial public offering price and agreed to provide a $10,000,000 interest-bearing loan facility. At any time during the term of the agreement, the loan is convertible at the Company's option into Common Stock based upon a formula that approximates its prevailing market price. Biogen will additionally provide payments over five years to support a research collaboration to generate project-specific GeneCalling(R) and PathCalling(TM) databases from Biogen-specified disease systems and to gain non-exclusive access to the Company's GeneCalling and PathCalling subscription databases. Payments could reach $18,500,000 if the research collaboration and database subscription arrangement both continue for the full five-year term. Biogen has an option to acquire exclusive licenses to certain discoveries arising from the collaboration.

For the years ended December 31, 1997 and 1998, the Company recorded revenue of $375,000 and $1,500,000 which represented 6% and 16% of total revenue related to this agreement, respectively. In addition, $375,000 has been received from Biogen for which the related services have not been performed and, therefore, such amount is recorded as deferred revenue at December 31, 1998.

Glaxo Wellcome, Inc.

In November 1998, CuraGen and Glaxo Wellcome, Inc. ("Glaxo") announced a drug discovery collaboration to utilize CuraGen's integrated genomics processes for the study and selection of Glaxo compounds for clinical development. This pharmacogenomics collaboration, up to five years in duration, is intended to enable Glaxo to select drug candidates with the highest likelihood of success in clinical trials. Specifically, CuraGen will evaluate numerous compounds across Glaxo therapeutic programs, identifying gene responses associated with compound efficacy and toxicity. For the year ended December 31, 1998, the Company has not recorded revenue related to this agreement. However, $2,750,000 has been received from Glaxo for which the related services have not been performed and, therefore, such amount is recorded as deferred revenue at December 31, 1998.

5. Stockholders' Equity

Authorized Capital Stock

The Company's authorized capital stock consists of 50,000,000 shares of Common Stock, par value of $.01 per share ("Common Stock"), 5,000,000 shares of Preferred Stock, par value of $.01 per share ("Preferred Stock") and 3,000,000 shares of Non-Voting Common Stock.

At December 31, 1997, the Company had reserved 1,583,666 shares of Common Stock pursuant to outstanding warrants, 1,500,000 shares of Common Stock for issuance pursuant to the 1993 Stock Option and Incentive Award Plan (the "1993 Stock Plan"), 1,500,000 shares of Common Stock for issuance pursuant to the 1997 Employee, Director and Consultant Stock Plan (the "1997 Stock Plan") and 570,000 shares of Common Stock for issuance pursuant to non-qualified stock options. At December 31, 1998, the Company had reserved 1,583,666 shares of Common Stock pursuant to outstanding warrants, 871,883 shares of Common Stock for issuance pursuant to the 1993 Stock Plan, 1,500,000 shares of Common Stock for issuance pursuant to the 1997 Stock Plan and 453,750 shares of Common Stock for issuance pursuant to non-qualified stock options. In November 1998, the Board of Directors of the Company approved an amendment to and restatement of the 1997 Stock Plan to increase the number of shares of Common Stock reserved for issuance of options granted pursuant to such Plan from 1,500,000 to 3,500,000, and recommended that the holders of shares of the Corporation's Common Stock approve such amendment and restatement at the next Annual Meeting of the Shareholders of the Company

Common Stock and Warrants to Purchase Common Stock

In February 1994, in connection with the $600,000 promissory note (the "CII Note") due to Connecticut Innovations, Inc. ("CII"), the Company issued 102,156 shares of Common Stock to CII (the "CII Stock") and a non-detachable stock subscription warrant (the "CII Warrant") to purchase 291,875 shares of Common Stock (the "CII Warrant Shares") at an aggregate exercise price equal to the original principal balance of the CII Note ($600,000) plus any unpaid interest. The CII Stock was valued at $155,277. In April 1997, the CII Warrant was exercised and CII received the CII Warrant Shares for consideration of $1,485,644, which represented full payment of the CII Note totaling $600,000 in principal and $885,644 in accrued interest. The Company had the right to purchase (the "Call Right") the CII Warrant Shares from CII. Further, CII had the right to sell (the "Put Right") the CII Warrant Shares to the Company.

In October 1997, the Company entered into an agreement with CII whereby, among

other things, the Call Right and Put Right were to be terminated upon the closing of the initial public offering. In the absence of termination, the Call Right would have been exercisable by the Company, (i) after June 30, 1996, for the greater of (a) the fair market value of the CII Warrant Shares, or (b) $600,000 plus a compounded annual rate of return of 30% from the date of the CII Note, if certain levels of capital were raised, or (ii) after February 10, 1999, for the greater of (a) the fair market value of the CII Warrant Shares, or (b) $600,000 plus a compounded annual rate of return of 25% from the date of the CII Note. In the absence of termination, the Put Right would have been exercisable by CII (i) at any time until February 10, 2004, in the event that the Company failed to maintain a Connecticut presence, for the greater of (a) the fair market or book value of the CII Warrant Shares, or (b) $600,000 plus a compounded annual rate of return of 40% from the date of the CII Note, or (ii) at any time in the event that the Company violated certain covenants or a default occurred under the CII documents, or at any time after February 10, 1999, for the greater of (a) the fair market value of the CII Warrant Shares, or (b) $600,000 plus a compounded annual rate of return of 25% from the date of the CII Note.

Given the Put Right, the Company had classified the CII Warrant Shares as Redeemable Common Stock on the balance sheet at December 31, 1997. The carrying value of the Redeemable Common Stock was adjusted through charges to additional paid-in capital to amounts approximating the exercise price pursuant to the Put Right. In March 1998, the Company completed its initial public offering. Accordingly, the Put Right and the Call Right were terminated and the Redeemable Common Stock was converted into Common Stock.

In March 1997, the Company also issued 17,073 and 22,673 shares of Common Stock for a total value of $70,000 and $92,958, respectively, for the settlement of outstanding accrued expense balances with two separate entities.

In March 1998, the Company completed its initial public offering of 3,000,000 shares of its Common Stock and received net proceeds of $30,200,000. Concurrently with completion of the initial public offering, the Company privately placed an aggregate of 956,520 shares of Common Stock and received net proceeds of $5,000,000 each from Biogen and Genentech, two of the Company's collaborative partners and existing stockholders, and $1,000,000 from the University of Florida Research Foundation, Inc. Accordingly, the combined net proceeds raised by the Company from the offering and the concurrent private placements were $41,200,000. In addition, in April 1998, the Company's underwriters exercised their option to purchase an additional 275,000 shares of Common Stock at a price of $11.50 per share to cover over-allotments, providing CuraGen with additional net proceeds of $2,900,000.

Stock Options

The Company's 1993 Stock Plan was adopted by the Company Board of Directors and stockholders in December 1993 and subsequently amended by the Board of Directors in May 1997. The 1993 Stock Plan provides for the issuance of stock options and stock awards to officers, directors, advisors, employees, and affiliates of the Company. Of the 1,500,000 shares of Common Stock which were reserved for issuance under the 1993 Stock Plan, options to purchase 1,028,884 and 871,883 shares were granted and outstanding as of December 31, 1997 and 1998, respectively. The Company does not intend to grant any additional options or awards under the 1993 Stock Plan.

A summary of all stock option activity under the 1993 Stock Plan during the years ended December 31, 1996, 1997 and 1998 is as follows:

<TABLE>
<CAPTION>

	Number of Shares	Weighted Average Exercise Price
<S>	<C>	<C>
Outstanding January 1, 1996	285,000	$2.22
Granted	269,550	3.16
Canceled or lapsed	(13,000)	3.00
Outstanding December 31, 1996	541,550	2.67
Granted	518,583	6.83
Canceled or lapsed	(31,749)	3.29
Outstanding December 31, 1997	1,028,884	4.75
Granted	-	-
Exercised	(97,001)	2.50
Canceled or lapsed	(60,000)	4.37
Outstanding December 31, 1998	871,883	5.02
Exercisable December 31, 1996	145,459	2.22
Exercisable December 31, 1997	347,611	3.32

Exercisable December 31, 1998	458,584	4.23

</TABLE>

The following table summarizes information about stock options under the 1993 Stock Plan at December 31, 1998:

<TABLE>
<CAPTION>

Range of Exercise Prices	Number of Options Outstanding	Weighted Average Contractual Life	Weighted Average Exercise Price
<S>	<C>	<C>	<C>
$ 1.00-$ 2.50	166,000	6.3 years	$ 2.11
2.51- 4.10	339,950	7.8 years	3.50
4.11- 7.50	308,533	8.6 years	7.34
7.51- 10.00	57,400	8.7 years	10.00
	871,883	7.8 years	5.02

</TABLE>

<TABLE>
<CAPTION>

Range of Exercise Prices	Number of Options Exercisable	Weighted Average Exercise Price of Options Exercisable
<S>	<C>	<C>
$ 1.00-$ 2.50	135,300	$ 2.09
2.51- 4.10	195,818	3.48
4.11- 7.50	115,666	7.40
7.51- 10.00	11,800	10.00
	458,584	4.23

</TABLE>

In addition to the options granted under the 1993 Stock Plan, the Company has granted non-plan options to purchase shares of Common Stock pursuant to individual agreements with Company employees and consultants. As of December 31, 1997 and 1998, there were 570,000 and 453,750 options, respectively, outstanding which are not part of a specific plan. These options incorporate the provisions of the 1993 Stock Plan to the extent such provisions are not inconsistent with the terms of those options.

A summary of all non-plan stock option activity during the years ended December 31, 1996, 1997 and 1998 is as follows:

<TABLE>
<CAPTION>

	Number of Shares	Weighted Average Exercise Price
<S>	<C>	<C>
Outstanding January 1, 1996	456,000	$1.40
Granted	-	-
Canceled or lapsed	-	-
Outstanding December 31, 1996	456,000	1.40
Granted	114,000	4.10
Canceled or lapsed	-	-
Outstanding December 31, 1997	570,000	1.94
Granted	-	-
Exercised	(116,250)	1.17
Canceled or lapsed	-	-
Outstanding December 31, 1998	453,750	2.14
Exercisable December 31, 1996	282,500	1.22
Exercisable December 31, 1997	349,500	1.31
Exercisable December 31, 1998	315,000	1.68

</TABLE>

</TABLE>

The following table summarizes information about non-plan stock options at December 31, 1998:

<TABLE>
<CAPTION>

Range of Exercise Prices	Number of Options Outstanding	Weighted Average Contractual Life	Weighted Average Exercise Price
<S>	<C>	<C>	<C>
$ 1.00-$ 2.50	339,750	5.5 years	$ 1.48
2.51- 4.10	114,000	8.0 years	4.10
	453,750	6.1 years	2.14

</TABLE>

<TABLE>
<CAPTION>

Range of Exercise Prices	Number of Options Exercisable	Weighted Average Exercise Price of Options Exercisable
<S>	<C>	<C>
$ 1.00-$ 2.50	286,500	$ 1.44
2.51- 4.10	28,500	4.10
	315,000	1.68

</TABLE>

The Company's 1997 Stock Plan was approved by the Company's Board of Directors and stockholders in October 1997. The 1997 Stock Plan provides for the issuance of stock options and stock grants ("Stock Rights") to employees, directors and consultants of the Company. A total of 1,500,000 shares of Common Stock have been reserved for issuance under the 1997 Stock Plan. In November 1998, the Board of Directors of the Company approved an amendment to and restatement of the 1997 Stock Option Plan to increase the number of shares of Common Stock reserved for issuance of options granted pursuant to such Plan from 1,500,000 to 3,500,000, and recommended that the holders of shares of the Corporation's Common Stock approve such amendment and restatement at the next Annual Meeting of the Shareholders of the Company. The 1997 Stock Plan is administered by the Compensation Committee of the Board of Directors. The Compensation Committee has the authority to administer the provisions of the 1997 Stock Plan and to determine the persons to whom Stock Rights will be granted, the number of shares to be covered by each Stock Right and the terms and conditions upon which a Stock Right may be granted. At December 31, 1997, the Company had 65,000 options outstanding under the 1997 Stock Plan and an additional 1,435,000 available for grant. At December 31, 1998, the Company had 1,276,100 options outstanding under the 1997 Stock Plan and an additional 223,900 available for grant. No stock options have been exercised under the 1997 Stock Plan as of December 31, 1998.

A summary of all stock option activity under the 1997 Stock Plan during the years ended December 31, 1997 and 1998 is as follows:

<TABLE>
<CAPTION>

	Number of Shares	Weighted Average Exercise Price
<S>	<C>	<C>
Outstanding December 31, 1996	-	-
Granted	65,000	$11.50
Canceled or lapsed	-	-
Outstanding December 31, 1997	65,000	11.50
Granted	1,306,100	8.73
Exercised	-	-
Canceled or lapsed	(95,000)	11.33
Outstanding December 31, 1998	1,276,100	8.68
Exercisable December 31, 1997	21,668	11.50

Exercisable December 31, 1998	70,383	10.98

</TABLE>

The following table summarizes information about stock options under the 1997 Stock Plan at December 31, 1998:

<TABLE>
<CAPTION>

Range of Exercise Prices	Number of Options Outstanding	Weighted Average Contractual Life	Weighted Average Exercise Price
<S>	<C>	<C>	<C>
$ 4.11-$ 7.50	719,000	9.7 years	$ 6.68
7.51- 10.00	15,000	9.6 years	7.94
10.01- 11.94	542,100	9.0 years	11.36
	1,276,100	9.4 years	8.68

</TABLE>

<TABLE>
<CAPTION>

Range of Exercise Prices	Number of Options Exercisable	Weighted Average Exercise Price of Options Exercisable
<S>	<C>	<C>
$ 4.11-$ 7.50	6,751	$ 6.13
7.51- 10.00	-	-
10.01- 11.94	63,632	11.50
	70,383	10.98

</TABLE>

Had compensation cost for the Company's stock option plans been determined in accordance with the minimum value method as prescribed under SFAS 123, the Company's net loss attributable to common stockholders and net loss per share attributable to common stockholders would have approximated the pro forma amounts shown below for each of the years ended December 31, 1996, 1997 and 1998.

<TABLE>
<CAPTION>

	December 31,					
	1996		1997		1998	
	As Reported	Pro Forma	As Reported	Pro Forma	As Reported	Pro Forma
<S>	<C>	<C>	<C>	<C>	<C>	<C>
Net loss attributable to common stockholders	$(606,241)	$(685,816)	$(7,290,434)	$(7,891,326)	$(18,936,920)	$(20,095,345)
Net loss per share attributable to common stockholders	$ (0.12)	$ (0.12)	$ (.92)	$ (1.00)	$ (1.55)	$ (1.65)

</TABLE>

The assumptions utilized by the Company in deriving the pro forma amounts for the years ended December 31, 1996 and 1997 are as follows: 1) 0% dividend yield, 2) .1% expected volatility, 3) risk-free interest rate of approximately 6%, and 4) expected life of the options of 10 years. The assumptions utilized by the Company in deriving the pro forma amounts for the year ended December 31, 1998 are as follows: 1) 0% dividend yield, 2) 50% expected volatility, 3) risk-free interest rate of approximately 5.25%, and 4) expected life of the options of 10 years. The weighted average grant date fair value of options granted during the years ended December 31, 1996, 1997, and 1998 was approximately $0.81 per share, $6.14 per share and $5.77 per share, respectively.

Preferred Stock

The Company received aggregate consideration of $1,750,000 from five investors as subscriptions for the purchase of 175,000 shares of Series B Preferred Stock. In September 1996, October 1996 and January 1997, the Company received proceeds

of $1,600,000, $50,000 and $100,000, respectively. The Series B Preferred Stock was non-convertible and accrued dividends at the prime rate. Dividends were payable when declared by the Board of Directors. Dividends in arrears at December 31, 1997 were $181,563. Upon completing a qualified equity financing, as defined in the Series B Preferred Stock Agreement, the Company was entitled to redeem all of the shares of the Series B Preferred Stock. The completion of the Company's initial public offering satisfied such requirement, and accordingly, in March 1998, the Company redeemed all of such Series B Preferred Stock for an aggregate redemption price of $1,750,000, plus accrued dividends and dividends in arrears.

In addition, holders of the Series B Preferred Stock received 5 year warrants to purchase an aggregate of 358,361 shares of Common Stock at $5.86 per share, which warrants expire on March 27, 2002. Such warrants were valued at $376,334. The value of such warrants was accreted over the warrant period and such accretion was classified as preferred dividends. For the years ended December 31, 1997 and 1998, such accretion amounted to $68,424 and $17,106, respectively.

In December 1996, in connection with the Genentech Evaluation Agreement (see Note 4), Genentech purchased 307,167 shares of Series A Preferred Stock for $1,800,000, or $5.86 per share. In March 1997, the Company issued 2,011,468 shares of convertible Series C Preferred Stock for an aggregate purchase price of $11,787,202. In addition, three year warrants were issued to certain purchasers of the Series C Preferred Stock to purchase an aggregate of 366,894 shares of Common Stock at an exercise price of $9.00 per share. Such warrants were valued at $0 upon issuance. In May 1997, as a result of the Pioneer Hi-Bred Agreement (see Note 4), the Company issued 1,000,000 shares of Series D Convertible Preferred Stock, for an aggregate purchase price of $7,500,000. In June 1997, the Company issued 100,000 shares of Series E Convertible Preferred Stock for an aggregate purchase price of $1,000,001.

In March 1998, upon the closing of the initial public offering of its Common Stock, the Company automatically converted the Series A, C, D and E Preferred Stock into shares of Common Stock on a 1 for 1 basis.

6.Income Taxes

The net deferred income tax assets consisted of the following:

<TABLE>
<CAPTION>

	December 31,	
	1997	1998
<S>	<C>	<C>
Total deferred income tax assets	$ 5,930,000	$ 15,400,000
Valuation allowance	(5,930,000)	(15,400,000)
Total	$ 0	$ 0

</TABLE>

The deferred income tax assets are primarily a result of the federal and Connecticut net operating loss and research and development credit carryforwards and timing differences relating to accrued payroll and depreciation and amortization. As the Company has no prior earnings history, a valuation allowance has been established due to the Company's uncertainty in its ability to benefit from the federal and Connecticut net operating loss carryforwards.

The change in the valuation allowance was $538,000, $4,068,000 and $9,470,000 for the years ended December 31, 1996, 1997 and 1998, respectively.

At December 31, 1998, the Company has federal and Connecticut net operating loss carryforwards for income tax purposes of approximately $27,400,000. Federal net operating loss carryforwards expire beginning in 2008, and Connecticut net operating loss carryforwards began expiring in 1998. The Company also has federal and Connecticut research and development tax credit carryforwards for income tax purposes of approximately $1,600,000 and $2,700,000, respectively at December 31, 1998.

7. Grants

The Company has received federal grants for specific purposes that are subject to review and audit by the grantor agencies. Such audits could lead to requests for reimbursement by the grantor agency for any expenditures disallowed under the terms of the grant. Additionally, any noncompliance with the terms of the grant could lead to loss of current or future awards.

During 1995, the Company received two grants from CII in the amounts of $450,000 and $237,500. The term of the $450,000 grant is January 4, 1995 to December 31, 2004, and the term of the $237,500 grant is February 1, 1995 to

January 31, 2005. The Company could be required to repay 100% of these amounts if during the terms of the respective grants (i) the Company breaches and fails to cure a material covenant, (ii) a material representation or warranty of the Company becomes untrue and is not cured, (iii) the Company becomes bankrupt or insolvent or liquidates its assets, or (iv) the Company is required to repay the federal grants to which the CII grants relate. In addition, the Company could be required to repay up to 200% of the amounts of the CII grants if the Company ceases to have a "Connecticut presence," during the terms of the respective grants.

8. Related Parties

From inception of the Company through September 30, 1996, the Chief Executive Officer elected to defer payment of his salary to future periods on an interest free basis. This amount had been recorded as accrued payroll-related party as of December 31, 1997. In May of 1998, payment in full of $308,125 was made to the Chief Executive Officer.

In March 1997, the Company loaned one of its officers $50,000 with a term of 4 years. The note bore interest at 8% per annum and was automatically forgiven upon consummation of the initial public offering in March 1998, as previously defined in the agreement.

In September 1997, the Company loaned one of its officers $50,000 with a term of 17 months bearing interest at 8% per annum. If this officer remains an employee through the maturity date, the loan will be extended contingent upon continued employment. This note will be forgiven if such officer remains an employee through September 2001.

In February 1998, the Company loaned one of its officers $50,000 with a term of 11 months bearing interest at 8% per annum. If this officer remains an employee through the maturity date, the loan will be extended contingent upon continued employment. This note will be forgiven if such officer remains an employee through January 2002.

On December 23, 1998, the Company announced the departure of an Executive Vice President and member of its Board of Directors. For the year ended December 31, 1998, in connection with the separation agreement signed by the parties, the Company has recorded $928,561 of compensation related expenses, including accrued bonuses for payments of accrued payroll and other compensation related expenses. In addition, the Company and the former Executive Vice President and director executed a non-qualified stock option agreement dated December 23, 1998 for the purchase of 25,000 shares of Common Stock at $6.875 per share, the then current fair market value of the Company's Common Stock. The option will become fully vested and exercisable on June 30, 2000 and shall terminate on June 30, 2002. The Company has recorded the related stock-based compensation expense in 1998, as described in Note 1. The Company has also agreed to make available from time to time during the period from April 1, 1999 to March 31, 2001, a loan in the maximum principal amount of $250,000. If utilized, the loan will have a term of two years and will bear interest at a variable rate equal to the prime rate as reported in the Wall Street Journal, adjusted monthly.

9. Supplemental Disclosure

Summary Selected Quarterly Financial Data (Unaudited)

<TABLE>
<CAPTION>

	Quarter Ended			
	March 31	June 30	Sept 30	Dec 31
<S>	<C>	<C>	<C>	<C>
1998:				
Total revenues	$ 1,989,572	$ 2,715,626	$ 2,308,015	$ 2,243,812
Total operating expenses	5,193,696	5,785,697	7,329,895	10,808,811
Net loss attributable to common stockholders	(3,675,948)	(2,499,017)	(4,511,685)	(8,250,270)
Net loss per common share	(0.40)	(0.19)	(0.34)	(0.62)
1997:				
Total revenues	1,232,538	1,647,094	1,292,118	1,724,793
Total operating expenses	1,677,765	3,050,064	3,774,745	4,721,223
Net loss attributable to common stockholders	(553,590)	(1,477,192)	(2,370,264)	(2,889,388)
Net loss per common share	(0.10)	(0.18)	(0.27)	(0.33)

</TABLE>

INDEPENDENT AUDITORS' REPORT

To the Board of Directors

of CuraGen Corporation
New Haven, Connecticut

We have audited the accompanying balance sheets of CuraGen Corporation (the "Company") as of December 31, 1997 and 1998, and the related statements of operations, changes in stockholders' equity (deficiency) and cash flows for each of the three years in the period ended December 31, 1998. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with generally accepted auditing standards. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company at December 31, 1997 and 1998, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 1998, in conformity with generally accepted accounting principles.

/s/ Deloitte & Touche LLP

Hartford, Connecticut
February 12, 1999

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURES

Not applicable.

PART III

ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The response to this item is incorporated by reference from the discussion responsive thereto under the captions "Management" and "Section 16(a) Beneficial Ownership Reporting Compliance" in the Company's Proxy Statement for the 1999 Annual Meeting of Stockholders.

ITEM 11. EXECUTIVE COMPENSATION

The response to this item is incorporated by reference from the discussion responsive thereto under the caption "Executive Compensation" in the Company's Proxy Statement for the 1999 Annual Meeting of Stockholders.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The response to this item is incorporated by reference from the discussion responsive thereto under the caption "Security Ownership of Certain Beneficial Owners and Management" in the Company's Proxy Statement for the 1999 Annual Meeting of Stockholders.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

The response to this item is incorporated by reference from the discussion responsive thereto under the captions "Executive Compensation-Employment Agreements and Other Termination of Employment Agreements" and "Related Transactions" in the Company's Proxy Statement for the 1999 Annual Meeting of Stockholders.

ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K.

ITEM 14 (a)(1) FINANCIAL STATEMENTS.

The following Financial Statements are included in Item 8:

Balance Sheets as of December 31, 1997 and 1998

Statements of Operations for the Year Ended December 31, 1996, 1997 and 1998

Statements of Changes in Stockholders' Equity (Deficiency) for the Year Ended December 31, 1996, 1997 and 1998

Statements of Cash Flows for the Year Ended December 31, 1996, 1997 and 1998

Notes to Financial Statements

Independent Auditors' Report

ITEM 14 (a)(2) FINANCIAL STATEMENT SCHEDULES.

All schedules are omitted because they are not applicable or the required information is shown in the financial statements or the notes thereto.

ITEM 14 (a)(3) EXHIBITS.
The following is a list of exhibits filed as part of this Annual Report on Form 10-K.

<TABLE>
<CAPTION>

EXHIBIT NO.	DESCRIPTION
<S>	<C>
@3.1	Amended and Restated Certificate of Incorporation of the Registrant (Filed as Exhibit 3.3)
@3.2	Amended and Restated Bylaws of the Registrant (Filed as Exhibit 3.5)
@4.1	Article Fourth of the Amended and Restated Certificate of Incorporation of the Registrant (Filed as Exhibit 4.1)
@4.2	Form of Common Stock Certificate (Filed as Exhibit 4.2)
*10.1	Memorandum of Lease Agreements dated December 23, 1996, October 27, 1997 and August 31, 1998 (New Haven) between the Registrant and Fusco Harbour Associates, LLC
#10.2	Lease, dated May 29, 1998, (Branford) by and between T.K.J. Associates, LLC and the Registrant (Filed as Exhibit 10.1)
@10.3	Sid Martin Biotechnology Development Institute Incubator License Agreement, dated July 15, 1997, between the Registrant and the University of Florida Research Foundation, Inc. (Filed as Exhibit 10.3)
@10.4	1997 Employee, Director and Consultant Stock Plan (Filed as Exhibit 10.4)
@10.5	1993 Stock Option and Incentive Award Plan (Filed as Exhibit 10.5)
@10.6	Amendment to 1993 Stock Option and Incentive Plan, dated May 12, 1997 (Filed as Exhibit 10.6)
$10.7	Form of Non-Qualified Stock Option Agreement with respect to options to purchase an aggregate of 570,000 shares of Common Stock (Filed as Exhibit 99.3)
*10.8	Separation Agreement, dated December 23, 1998, between the Registrant and Gregory T. Went, Ph.D.
@10.9	Employment Letter, dated July 18, 1997, between the Registrant and David M. Wurzer (Filed as Exhibit 10.8)
@10.10	Employment Letter, dated August 21, 1997, between the Registrant and Peter A. Fuller, Ph.D. (Filed as Exhibit 10.9)
+10.11	Option and Exclusive License Agreement, dated October 4, 1996, between the Registrant and Wisconsin Alumni Research Foundation (Filed as Exhibit 10.11)
+10.12	Standard Non-Exclusive License Agreement--Brumley, dated July 1, 1996, between the Registrant and Wisconsin Alumni Research Foundation (Filed as Exhibit 10.12)
+10.13	Collaborative Research and License Agreement, dated May 16, 1997, between the Registrant and Pioneer Hi-Bred International, Inc. (Filed as Exhibit 10.13)
+10.14	Research and Option Agreement, dated October 1, 1997, between the Registrant and Biogen, Inc. (Filed as Exhibit 10.14)
+10.15	Research and Option Agreement, dated November 20, 1997, between the Registrant and Genentech, Inc. (Filed as Exhibit 10.15)
+10.16	Notice of Grant Award and Grant Application to Department of Health and Human Services for Automated Sequencing System for Human Genome Project, dated March 25, 1995 (Filed as Exhibit 10.16)
@10.17	ATP Agreement for Integrated Microfabricated DNA Analysis Device for Diagnosis of Complex Genetic Disorders, dated February 1995 (Filed as Exhibit 10.17)
@10.18	ATP Agreement for Molecular Recognition Technology for Precise Design of Protein-Specific Drugs, dated March 2, 1995 (Filed as Exhibit 10.18)
@10.19	ATP Agreement for Programmable Nanoscale Engines for Molecular Separation, dated May 6, 1997 (Filed as Exhibit 10.19)
@10.20	Material Transfer and Screening Agreement, dated January 15, 1998, between the Registrant and ArQule, Inc. (Filed as Exhibit 10.20)
*%10.21	Pharmacogenomics Research and License Agreement, dated November 18, 1998, by and between Glaxo Wellcome, Inc. and the Registrant
*11.1	Schedule of Computation of Net Loss Per Share
*21.1	Subsidiaries of the Registrant
*23.1	Consent of Deloitte & Touche LLP
*27.1	Financial Data Schedule

</TABLE>

<TABLE>
<S> <C>
* Filed herewith
@ Previously filed with the Commission as Exhibits to, and incorporated herein by reference from, the Registrant's Registration Statement filed on Form S-1, File No. 333-38051.
# Previously filed with the Commission and incorporated herein by reference from the Form 10-Q, File No. 000-23223, for the period ending June 30, 1998.
$ Previously filed as Exhibit 99.3 to the Company's Registration Statement on Form S-8, File No. 333-56829, and incorporated herein by reference.
+ Previously filed with the Commission as Exhibits to, and incorporated herein by reference from, the Registrant's Registration Statement filed on Form S-1, File No. 333-38051, and for which Confidential Treatment has been granted by the Commission as to certain portions.
% Confidential Treatment requested as to certain portions, which portions are omitted and filed separately with the Commission.
</TABLE>

Where a document is incorporated by reference from a previous filing, the Exhibit number of the document in that previous filing is indicated in parentheses after the description of such document.

ITEM 14 (b) REPORTS ON FORM 8-K

The Company did not file any Current Reports on Form 8-K during the three months ended December 31, 1998.

SIGNATURES

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

Dated: March 26, 1999 CuraGen Corporation

By: /s/ David M. Wurzer
David M. Wurzer
Executive Vice-President, Treasurer
and Chief Financial Officer
(principal financial and accounting officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of Registrant and in the capacities indicated on March 26, 1999.

<TABLE>
<CAPTION>

Signature	Title
<S>	<C>
/s/ Jonathan M. Rothberg, Ph.D. Jonathan M. Rothberg, Ph.D.	Chief Executive Officer, Chairman of the Board of Directors and President (principal executive officer and director)
/s/ David M. Wurzer David M. Wurzer	Executive Vice-President, Treasurer and Chief Financial Officer (principal financial and accounting officer)
/s/ Richard H. Booth, C.P.A., C.L.U., Ch.F.C. Richard H. Booth, C.P.A., C.L.U., Ch.F.C.	Director
/s/ Vincent T. DeVita, Jr., M.D. Vincent T. DeVita, Jr., M.D.	Director
/s/ Robert E. Patricelli, J.D. Robert E. Patricelli, J.D.	Director
/s/ James L. Vincent James L. Vincent	Director

</TABLE>

EXHIBIT INDEX

<TABLE>
<CAPTION>

EXHIBIT NUMBER	DESCRIPTION
<S>	<C>
10.1	Memorandum of Lease Agreements dated December 23, 1996, October 27, 1997 and August 31, 1998 (New Haven) between the Registrant and Fusco Harbour Associates, LLC
10.8	Separation Agreement, dated December 23, 1998, by and between Gregory T. Went, Ph.D. and the Registrant
%10.21	Pharmacogenomics Research and License Agreement, dated November 18, 1998, by and between Glaxo Wellcome, Inc. and the Registrant
11.1	Schedule of Computation of Net Loss Per Share
21.1	Subsidiaries of the Registrant
23.1	Consent of Deloitte & Touche LLP
27.1	Financial Data Schedule

</TABLE>

% Confidential Treatment requested as to certain portions, which portions are omitted and filed separately with the Commission.

EXHIBIT 10.1

MEMORANDUM OF LEASE

In accordance with Connecticut General Statutes, Section 47-19, notice is hereby given of a certain Lease by and between FUSCO HARBOUR ASSOCIATES, LLC, a Connecticut limited liability company, having its principal place of business c/o The Fusco Corporation, 555 Long Wharf Drive, New Haven, Connecticut 06511, as Landlord, and CURAGEN CORPORATION, a Delaware corporation, with an office at 555 Long Wharf Drive, New Haven, Connecticut 06511, as Tenant, as follows:

Date of Execution:	December 23, 1996
Date of Execution of First Amendment to Lease Agreement:	October 27, 1997
Date of Execution of Second Amendment to Lease Agreement:	August 31, 1998
Description of the Demised Premises:	Thirty-five thousand nine hundred thirty eight (35,938) rentable square feet of floor area, situated in Building I of the Long Wharf Maritime Center complex, located at 555 Long Wharf Drive, New Haven, Connecticut 06511.
Initial Term:	The period commencing on January 1, 1997 and expiring on December 31, 2002.
Rights of Extension or Renewal:	Two (2) periods of five (5) years each.
File Copy:	A copy of the Lease is on file in the office of the Landlord. All provisions set forth in that certain Lease between Landlord and Tenant dated December 23, 1996 are incorporated into and made a part of this Memorandum of Lease by reference.
Conflict:	In the event of a conflict between the terms of the Lease and this Memorandum of Lease, the terms of the Lease shall prevail.

Exhibit 10.8

AGREEMENT

THIS AGREEMENT ("Agreement") is made as of the 23rd day of December, 1998, by and among CuraGen Corporation, a Delaware corporation (the "Company"), Gregory T. Went, Ph.D. ("Dr. Went"), the Gregory T. Went 1997 Irrevocable Trust and the Gregory and Marjorie Went 1997 Children's Trust (collectively, the "Trusts").

WHEREAS, the parties wish to provide for Dr. Went's separation from the Company as an Executive Vice President and for his resignation as a Director of the Company upon the terms and conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements hereinafter set forth, the parties, intending to be legally bound, hereby agree as follows:

1. Employment/Consulting Status: Salary and Benefits. (a) On January 4, 1999, the Company shall make a one-time severance payment to Dr. Went amounting to $100,000.00, less all normal payroll deductions and withholdings.

(b) For the period of time from the date hereof through March 31, 1999 (the "Termination Date"), Dr. Went shall continue as a full-time employee of the Company. As and when reasonably requested, until the Termination Date, Dr. Went will assist the Company on strategic alliances and other special projects and will aid in the transition of his responsibilities. From the date of this Agreement through December 31, 1998, the Company shall continue to pay Dr. Went a salary at the rate of $175,000.00 per annum. From January 1, 1999 through the Termination Date, the Company shall pay Dr. Went a salary at the rate of $200,000.00 per annum. The salary to be paid to Dr. Went in this Section 1(b) shall be payable on a periodic basis consistent with past practices and regardless of whether Dr. Went's employment is terminated for any reason.

(c) For the period of time from April 1, 1999 through December 31, 1999, Dr. Went shall serve as a consultant to the Company. After December 31, 1999, the term of the consulting period may be extended on a month-to-month basis until June 30, 2000, if at the beginning of each month Dr. Went has not become employed on a substantially full-time basis by a subsequent employer, as defined below. Dr. Went shall notify the Company in writing immediately upon becoming employed on a full-time basis by a subsequent employer. Dr. Went shall be deemed to be employed on substantially a full-time basis by a subsequent employer if he becomes an employee of any one or more entities, or a consultant to any one or more entities, where such employment and/or consulting together involve (i) thirty (30) or more hours per week on average or (ii) compensation that would exceed, when annualized, $150,000.00 per annum. The date on which Dr. Went's

service as a consultant is terminated hereunder is referred to herein as the "Consulting Termination Date." As and when requested and as mutually agreed, until the Consulting Termination Date, Dr. Went will assist the Company on strategic alliances and other special projects, provided, however, that such services shall require no more than an aggregate of fifteen (15) days (each day consisting of eight-hours) from April 1, 1999 through December 31, 1999, provided that Dr. Went shall be available on a $2,000.00 per diem (plus

reasonable expenses) basis thereafter, as mutually agreed. During the consulting period, the Company shall pay Dr. Went a consulting fee at the rate of $200,000.00 per annum. The consulting fee provided for in this Section 1(c) shall be paid in equal installments on a periodic basis consistent with the Company's payroll practices for all salaried employees and regardless of whether the Company terminates Dr. Went's consulting arrangements for any reason. Dr. Went shall be promptly reimbursed for all reasonable expenses incurred by him in connection with the services rendered pursuant to Sections 1(b) and (c) upon presentation of receipts evidencing such expenses, provided that any expenses in excess of $500.00 shall receive the prior written approval of the Company. Dr. Went's services as a consultant shall be performed as an independent contractor and not as an employee. In accordance therewith, he shall have no authority to bind, represent or act on behalf of the Company, shall not be an employee for purposes of any Company benefit, benefit plan, or employment policy and shall obtain and/or pay for all insurance, taxes and other things required by law and necessary to the performance of the consulting services, including without limitation, payment of all local, state and federal employment taxes and unemployment insurance. The Company shall promptly issue Dr. Went a Form 1099 with respect to the payments for the consulting services.

(d) For the period of time from the date hereof through the Termination Date, the Company shall provide Dr. Went and his eligible dependents with continued coverage under all health, dental, medical and hospitalization plans maintained by the Company during such time period on the same terms and conditions applicable to executive officers of the Company. After the Termination Date, the Company shall provide Dr. Went with the opportunity to continue applicable coverages under the Consolidated Omnibus Budget Reconciliation Act of 1985 ("COBRA"). During the time that Dr. Went is a consultant to the Company pursuant to this Agreement, the Company, on the submission of documentation reasonably satisfactory to it, shall reimburse Dr. Went for his payments under COBRA in the same percentage as it contributed to such coverage prior to the Termination Date, provided, however, that the Company's obligation to make such reimbursement shall cease at the earlier of the expiration of the COBRA coverage period, the Consulting Termination Date, or such time as Dr. Went becomes eligible for coverage under another employer's group insurance plan, and provided further that Dr. Went shall notify the Company in writing immediately upon learning of such eligibility. Until the Consulting Termination Date, the Company also shall provide Dr. Went with reasonable email and phone mail access and, until the Termination Date, the Company shall provide Dr. Went with secretarial support, all as mutually agreed

and consistent with Company policy and practices for employees.

(e) The Company hereby assigns and transfers to Dr. Went all of its right, title and interest in and to the fax machine, personal computers, software (excluding any information stored thereon which belongs to the Company), and printer that were installed by the Company at Dr. Went's residence for his use on behalf of the Company, free and clear of all liens and encumbrances. The foregoing assets are assigned and transferred to Dr. Went as they exist on the date hereof and the Company makes no representations or warranties whatsoever regarding such assets.

2. Resignation. Dr. Went hereby resigns as an officer and director of the Company and as an officer and director of any subsidiaries or affiliates of the Company, effective on

December 31, 1998. After such date, Dr. Went shall have no authority to represent himself as an officer or director of the Company to any person or entity or to act or purport to act in any such capacity, but Dr. Went shall continue as a full-time employee of the Company as described in Section 1 above.

3. $250,000.00 Loan. From time to time during the period from April 1, 1999 through March 31, 2001, the Company will make available to Dr. Went a loan in the maximum principal amount of up to $250,000.00, provided that Dr. Went must borrow funds under such loan in increments of at least $50,000.00. The loan will have a term of two years and will bear interest at a variable rate equal to the prime rate as reported in The Wall Street Journal from time to time, adjusted monthly. The Company's obligation to extend the loan to Dr. Went is conditioned upon Dr. Went executing a promissory note in the form attached hereto as Exhibit A at the time of the first loan.

4. Stock Options. (a) On the date hereof, the Company shall issue to Dr. Went a stock option exercisable for 25,000 shares of common stock of the Company (the "Common Stock"), at an exercise price per share equal to the fair market value of the Common Stock on the date hereof, determined in accordance with the Company's 1997 Employee, Director and Consultant Stock Option Plan. The option shall become fully vested and immediately exercisable for all of the Common Stock thereunder on June 30, 2000 and shall terminate on June 30, 2002. On the date hereof, the Company shall execute and deliver a stock option agreement, in the form of Exhibit B attached hereto, evidencing the issuance of the foregoing option.

(b) On January 4, 1999, or as soon thereafter as practicable, but in no event after January 10, 1999, Dr. Went and/or the Trusts shall be allowed to

immediately exercise in full the option to purchase 83,000 shares of Common Stock under the Non-Qualified Stock Option Agreement between the Company and Dr. Went, dated December 28, 1993 (the "1993 Stock Option"). In addition, the Company shall pay to such optionees $83,000.00 to enable them to exercise such options. Accordingly, at the time of exercise, the $83,000.00 payment will be deemed to have been received from the Company and, immediately thereafter, to have been paid to the Company in order to exercise the 1993 Stock Option. Within three days of such exercise, the Company shall issue to Dr. Went and/or the Trusts an aggregate of 83,000 shares of Common Stock. The Company shall make an additional payment (the "Gross-Up Payment") in an amount equal to the sum of (i) the federal and state income tax liability imposed on receipt of the $83,000.00 payment and the exercise of the 1993 Stock Options, and (ii) the federal and state income tax liability imposed on receipt of the Gross-Up Payment. The Gross-Up Payment shall be calculated assuming that Dr. Went is taxable at the combined federal and state income tax rate of 45.0%. The Company shall pay any withholding taxes imposed on any such payments as required and shall treat such paid withholding taxes as an interest-free advance to Dr. Went, to be recovered from the Gross-Up Payment. The Gross-Up Payment shall be paid not later than December 31, 1999. An example of the calculation of the Gross-Up Payment is set forth on Exhibit C hereof.

(c) Exhibit D attached hereto sets forth certain information regarding
----
all other options to purchase Common Stock currently held by Dr. Went. Such options shall remain in effect

and shall vest and be exercisable in accordance with the terms thereof. No amendment, modification or revision of any option agreement listed on Exhibit D,
----
or the option agreements described in Sections 4(a) and (b) above, shall be effective unless approved in writing by Dr. Went. The Company represents to Dr. Went and the Trusts that none of the Common Stock underlying such stock options is or will be subject to repurchase by the Company.

(d) If the Company believes that Dr. Went has engaged in activities that constitute "cause" under the Stock Options, as defined in Section 5 below, such that the Company is entitled to terminate Dr. Went's right to exercise the Stock Options, then the Company shall give Dr. Went fifteen (15) days advance written notice of its intention to request that the Compensation Committee of the Board of Directors terminate the Stock Options and provide Dr. Went with an opportunity to be heard before the Compensation Committee of the Board of Directors at a time to be mutually agreed upon between the Compensation Committee and Dr. Went during such fifteen-day period. No such determination of cause shall be made prior to the end of such fifteen (15) day period.

5. Participation in Cashless Exercise Program. As long as Dr. Went
----

holds any of the options listed or described in Section 4 above (the "Stock Options"), Dr. Went shall be entitled to participate, to the same extent as employees of the Company, in the "cashless exercise" program relating to Company stock options maintained on the Company's behalf by Morgan Stanley & Co. Incorporated (or any successor program).

6. Lockup and Compliance with Company Trading Policy. (a) Until June 30, 1999, each of Dr. Went and the Trusts will not (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any securities convertible into or exercisable or exchangeable for Common Stock, or (ii) enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of the Common Stock, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of Common Stock or such other securities, in cash or otherwise. Notwithstanding the foregoing, Dr. Went (but not the Trusts) may sell or transfer up to 5,000 shares of Common Stock per month beginning February 1, 1999 .

(b) Until the Consulting Termination Date, each of Dr. Went and the Trusts shall comply with the Company's "Statement of Company Policy-Securities Trades by Company Personnel," a copy of which is attached hereto as Exhibit E. The Company represents that (i) all of the Stock Options have been granted in accordance with Rule 16b-3 of the Securities and Exchange Act of 1934, as amended (the "34 Act"), (ii) except for the Common Stock underlying the Stock Options held by the Trusts, the Common Stock underlying the Stock Options has been registered on Form S-8's under the Securities Act of 1933, as amended, (iii) upon Dr. Went's exercise of any of the Stock Options held by him, it will cause its legal counsel to promptly issue any necessary instructions to the Company's transfer agent so that Dr. Went may readily resell or transfer the shares obtained upon exercise of any of the Stock Options, and (iv) upon the Trusts' exercise of any of the Stock Options held by them, it will cause its legal counsel to promptly

issue any necessary instructions to the Company's transfer agent so that such shares will be issued with the appropriate restrictive legends.

7. Return of Property. Within ten days of the date of this Agreement, Dr. Went shall return to the Company all property, except as set forth herein or in writing from the Chief Executive Officer or the Chief Financial Officer of the Company, that belongs to the Company or that otherwise pertains to its business, including, without limitation, any and all documents and copies thereof, compilations of information in any form, software and credit cards. On or prior to the Termination Date, Dr. Went shall return to the Company all keys,

security access cards, identification cards and other means of obtaining access to its premises.

8. Non-Disparagement. (a) For a period of five years from the date hereof, Dr. Went will not make any statements that are professionally disparaging about, or adverse to, the interests of the Company (including its officers, directors and employees), including, but not limited to, any statements that disparage any person, product, service, finances, financial condition, capability or any other aspect of the business of the Company, and Dr. Went will not engage in any conduct that is intended to harm professionally or personally the reputation of the Company, including its officers, directors and employees.

(b) For a period of five years from the date hereof, the Company will cause its officers, directors and human resources personnel not to make any statements that are professionally or personally disparaging about, or adverse to, the interests of Dr. Went, and not to engage in any conduct that is intended to harm professionally or personally the reputation of Dr. Went.

(c) Attached hereto as Exhibit F is the Company's press release announcing Dr. Went's departure. For a period of five years from the date hereof, neither Dr. Went nor the Company will make any statement relating to Dr. Went's departure that is inconsistent with such press release.

(d) In the event that Dr. Went violates this Section 8, such violation will not constitute "cause" under the Stock Options or result in the termination of his right to exercise the Stock Options.

9. Employee Confidential Information and Inventions Agreement. Notwithstanding any other provision of this Agreement, the Employee Confidential Information and Inventions Agreement, attached hereto as Exhibit G, shall survive the execution of this Agreement and shall remain in effect in accordance with its terms, provided, however, that the period described in paragraph 6(a) of such agreement shall extend to and until December 31, 1999 or the maximum period permitted by applicable law (whichever is shorter).

10. Non Solicitation and Hiring. Until December 31, 1999, Dr. Went, either individually or on behalf of or through any third party, shall not directly or indirectly (i) solicit, entice or persuade or attempt to solicit, entice or persuade any employees of or consultants to the Company or to any present or future parent, subsidiary or affiliate of the Company to leave the

services of the Company or of any such parent, subsidiary or affiliate for any

reason, or (ii) hire, as a consultant or employee, any person who was an employee or consultant of the Company at any time during the six months prior to his or her date of hire by Dr. Went, either individually or on behalf of or through any third party.

11. Cooperation. In connection with the services described in Section 1, Dr. Went shall cooperate fully with the Company in the defense or prosecution of any patent applications or patents of the Company and any claims or actions now in existence or which may be brought or threatened in the future against or on behalf of the Company, including any claims or actions against its officers, directors and employees, except that after the termination of Dr. Went's employment and service as a consultant under Section 1 hereof, Dr. Went's cooperation under this paragraph shall be at the parties' mutual convenience and agreement and Dr. Went shall be entitled to receive the per diem amount specified in Section 1(c) hereof. Dr. Went's cooperation in connection with such actions or claims shall include, without limitation, his being available to meet with the Company in connection with any contract matters or audits, to prepare for any proceeding (including, without limitation, depositions, consultation, discovery or trial), to provide affidavits, to assist with any audit, inspection, proceeding or other inquiry, or to act as a witness in connection with any litigation or other legal proceeding affecting the Company. Dr. Went further agrees that should he be contacted (directly or indirectly) by any party representing an individual or entity adverse to the Company, he shall promptly notify the Company.

12. Release and Waiver. (a) Dr. Went hereby agrees and acknowledges that by signing this Agreement and accepting the payments and benefits to be provided to him, and other good and valuable consideration provided for in this Agreement, he is waiving his right to assert any form of legal claim against the Company1 whatsoever for any alleged action, inaction or circumstance existing or arising from the beginning of time through the Termination Date. Dr. Went's waiver and release herein is intended to bar any form of legal claim, charge, complaint or any other form of action (jointly referred to as "Claims") against the Company seeking any form of relief including, without limitation, equitable relief (whether declaratory, injunctive or otherwise), the recovery of any damages or any other form of monetary recovery whatsoever (including, without limitation, back pay, front pay, compensatory damages, emotional distress damages, punitive damages, attorneys fees and any other costs) against the Company, for any alleged action, inaction or circumstance existing or arising through the Termination Date.

Without limiting the foregoing general waiver and release, Dr. Went specifically waives and releases the Company from any Claim arising from or related to his employment relationship with the Company or the termination thereof, including, without limitation:

(i) Claims under any state or federal discrimination, fair employment practices or other employment related statute, regulation or executive order (as they may have been amended through the Termination Date)

prohibiting discrimination or harassment based upon any protected status including, without limitation, race, national origin, age, gender, marital status, disability, veteran status or sexual

---

1 For the purposes of this Section 12, the parties agree that the term "Company" shall include Company, its divisions, affiliates and subsidiaries, and its and their respective officers, directors, employees, agents and assigns.

orientation. Without limitation, specifically included in this paragraph are any Claims arising under the federal Age Discrimination in Employment Act, the Older Workers Benefit Protection Act, the Civil Rights Acts of 1866 and 1871, Title VII of the Civil Rights Act of 1964, the Civil Rights Act of 1991, the Equal Pay Act, the Americans With Disabilities Act and any similar Connecticut or other state statute.

(ii) Claims under any other state or federal employment related statute, regulation or executive order (as they may have been amended through the Termination Date) relating to wages, hours or any other terms and conditions of employment. Without limitation, specifically included in this paragraph are any Claims arising under the Fair Labor Standards Act, the Family and Medical Leave Act of 1993, the National Labor Relations Act, the Employee Retirement Income Security Act of 1974, COBRA and any similar Connecticut or other state statute.

(iii) Claims under any state or federal common law theory including, without limitation, wrongful discharge, breach of express or implied contract, promissory estoppel, unjust enrichment, breach of a covenant of good faith and fair dealing, violation of public policy, defamation, interference with contractual relations, intentional or negligent infliction of emotional distress, invasion of privacy, misrepresentation, deceit, fraud or negligence.

(iv) Any other Claim arising under local, state or federal law.

Notwithstanding the foregoing, this Section 12 does not release the Company, and Dr. Went expressly reserves claims arising from any obligation contained in this Agreement. Dr. Went acknowledges and agrees that, but for providing this waiver and release, he would not be receiving the payments and benefits being provided to him under the terms of this Agreement.

(b) The Company releases and discharges Dr. Went from any and all actions, causes of action, suits, debts, dues, sums of money, accounts, covenants, contracts, controversies, agreements, promises, judgments, demands, liability, claims and damages whatsoever, in law or equity, that the Company ever had or now has, including without limitation, any claim arising from or relating to Dr. Went's employment with, service as an officer and director of,

or direct or indirect holding of equity securities in, or in any other capacity relating to the Company, including, but not limited to, any claims arising under any federal, state or local law or ordinance, tort, employment contract (express or implied), public policy, or any other obligation, other than those relating to the performance of Dr. Went's obligations under this Agreement.

(c) Nothing herein shall alter, amend or modify the Company's obligations to indemnify Dr. Went in connection with any action or omission while Dr. Went was a director and officer of the Company. The Company shall at all times provide Dr. Went the same amount of coverage and he shall be entitled to the same level (and no lesser level) of indemnification as any other officer or director of the Company pursuant to any charter, by-law, director and officer liability policy or other agreement.

13. Representations and Warranties. (a) The Company represents and warrants to Dr. Went and the Trusts as follows: (i) that it has full legal right, power and authority to enter into and perform all of its obligations under this Agreement and to perform the actions to be performed by it pursuant to this Agreement; (ii) the execution and delivery of this Agreement by it will not violate any other agreement to which it is a party, (iii) no consent of any third party is required for the execution and performance of this Agreement by it, and (iv) this Agreement has been duly executed and delivered by it and constitutes its legal, valid and binding agreement enforceable in accordance with its terms, subject to bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and similar laws, now or hereafter in effect, affecting creditors' rights and remedies generally and to general principles of equity.

(b) Each of Dr. Went and the Trusts represents and warrants to the Company as follows: (i) that he or it has full legal right, power and authority to enter into and perform all of its obligations under this Agreement and to perform the actions to be performed by it pursuant to this Agreement; (ii) the execution and delivery of this Agreement by him or it will not violate any other agreement to which he or it is a party, (iii) no consent of any third party is required for the execution and performance of this Agreement by him or it, and (iv) this Agreement has been duly executed and delivered by him and it and constitutes his and its legal, valid and binding agreement enforceable in accordance with its terms, subject to bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium and similar laws, now or hereafter in effect, affecting creditors' rights and remedies generally and to general principles of equity. Dr. Went further represents that since June 30, 1998, he has not had any "reportable transactions" under Section 16(a) of the 34 Act, other than the grant of the Stock Options.

14. Equitable Relief. Dr. Went hereby expressly covenants and agrees that the Company will suffer irreparable damage in the event any of the provisions of

Section 9, 10 and 11 hereof, including the provisions of the Employee Confidential Information and Inventions Agreement referred to therein, are not performed or are otherwise breached and that the Company shall be entitled as a matter of right (without the need to prove actual damages) to an injunction or injunctions and other relief to prevent a breach or violation by Dr. Went and to secure the enforcement of such provisions. Resort to such equitable relief, however, shall not constitute a waiver of any other rights or remedies which the Company may have.

The Company hereby expressly covenants and agrees that Dr. Went will suffer irreparable damage in the event any of the provisions of this Agreement are not performed or are otherwise breached and that Dr. Went shall be entitled as a matter of right (without the need to prove actual damages) to an injunction or injunctions and other relief to prevent a breach or violation by the Company and to secure the enforcement of such provisions. Resort to such equitable relief, however, shall not constitute a waiver of any other rights or remedies which Dr. Went may have.

15. Confidentiality. All information relating in any way to the subject matter of this Agreement, including the terms and amount of payments and benefits provided under this Agreement, shall be held confidential by the Company and Dr. Went and shall not be publicized or disclosed to any person (other than an immediate family member, legal counsel or financial

advisor, provided that any such individual to whom disclosure is made agrees to be bound by these confidentiality obligations), business entity or government agency (except where disclosure is mandated by state or federal law or regulation or by legal process).

16. Notice. All notices, requests and other communications to any party hereunder shall be given or made in writing and mailed (by registered or certified mail or by overnight courier) or delivered by hand as follows:

(a) if to the Company, to it at:

CuraGen Corporation
Long Wharf Maritime Center
555 Long Wharf Drive, 11th Floor
New Haven, Connecticut 06511
Attention: Jonathan M. Rothberg, Chief Executive Officer

with a copy to:

Mintz, Levin, Cohn, Ferris, Glovsky
and Popeo, P.C.
One Financial Center

Boston, MA 02111
Attention: Jeffrey M. Wiesen, Esquire

(b) if to Dr. Went or the Trusts at:

Gregory T. Went, Ph.D.
34 Scotland Avenue
Madison, CT 06443

with a copy to:

Gadsby and Hannah LLP
225 Franklin Street
Boston, MA 02110
Attention: Lawrence Gennari, Esquire

or such address as such party may hereafter specify for the purpose of notice to the other party hereto. Each such notice, request or other communication shall be effective when, if delivered by hand, received by the party to which it is addressed or, if mailed in the manner described above, on the third business day after the date of mailing.

17. Successors and Assigns. The rights and obligations of the Company under this Agreement shall inure to the benefit and be binding upon its successors and assigns and any entity to which its assets and business may be transferred by operation of law or otherwise. This

Agreement is personal to Dr. Went and the Trusts and they shall not, without the written consent of the Company, assign their rights or obligations hereunder, other than by will or the laws of descent and distribution, but the provisions hereof shall inure to the benefit of and be enforceable by Dr. Went's heirs and legal representatives.

18. Arbitration. Except with respect to proceedings to obtain equitable relief as provided in Section 14 hereof, any dispute, controversy, or claim arising out of, in connection with, or in relation to this Agreement and its exhibits, shall be settled by arbitration in Hartford, Connecticut, or such other place as agreed by the parties, pursuant to the Commercial Rules then in effect of the American Arbitration Association. Notwithstanding anything else contained herein, the arbitration shall be before one arbitrator who, within ten (10) days of the receipt by one party of a Demand for Arbitration by the other party, shall be selected by agreement of the parties. Failing such agreement, the parties, within five (5) days thereof, shall submit the matter to the American Arbitration Association and the arbitrator shall be selected and appointed by the American Arbitration Association itself. The arbitrator's decision shall be rendered within sixty (60) days of his/her selection and shall

be in writing with a statement of the reasons supporting such decision. Any award or determination shall be final, binding, and conclusive upon the parties, except as provided by the applicable arbitration statute, and judgment rendered may be entered thereon in any court having jurisdiction thereof. Dr. Went and the Company knowingly waive any and all rights to jury trial in any forum. The parties hereby expressly waive punitive damages. Each party shall bear its own expenses, including attorney's fees, relating to the arbitration unless otherwise determined in the arbitration.

19. Dr. Went's Expenses. Within three business days of the execution of this Agreement, the Company shall pay all of the expenses incurred by Dr. Went in connection with this Agreement, including legal and accounting fees, not to exceed $10,000.00.

20. Governing Law. This Agreement shall be construed in accordance with and governed by the substantive laws of the State of Delaware, without regard to the choice of law rules thereof.

21. Complete Understanding. Except as expressly provided herein, this Agreement supersedes any prior contracts, understandings, discussions and agreements among the parties and constitutes the complete understanding between them with respect to the subject matter hereof. No statement, representation, warranty or covenant has been made by any party with respect hereto except as expressly set forth therein.

22. Modification: Waiver. (a) This Agreement may be amended or waived if, and only if, such amendment or waiver is in writing and signed, in the case of an amendment, by the Company on the one hand and Dr. Went and the Trusts on the other or in the case of a waiver, by the party against whom the waiver is to be effective.

(b) No failure or delay by any party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or

privilege. The rights and remedies herein provided shall be cumulative and shall not be exclusive of any rights or remedies provided by law or at equity.

23. Headings. The section headings in this Agreement are for convenience of reference only and shall not control or affect the meaning or construction of this Agreement.

24. Counterparts. This Agreement may be signed in any number of counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement shall become effective when each party hereto shall have received counterparts hereof signed by the other party hereto.

25. Construction. Dr. Went, the Trusts and the Company have cooperated in the drafting and preparation of this Agreement. Hence, in any construction to be made of this Agreement, the same shall not be construed against any party on the basis that the party was the drafter.

26. Further Assurances. The parties hereto shall, at the request of any other party, execute and deliver any further instruments or documents and take all such further action as such party reasonably may request in order to consummate and make effective the foregoing provisions of this Agreement.

IN WITNESS WHEREOF, the Company and the Trusts have caused this Agreement to be duly executed in its name by one of its duly authorized representative, and Dr. Went has manually signed his name hereto, as of the date first written above.

/s/ Gregory T. Went, Ph.D.

Gregory T. Went, Ph.D.

GREGORY T. WENT 1997
IRREVOCABLE TRUST

By: /s/ James M. Bustillo

By: /s/ Marjorie Went

Its Trustees

GREGORY AND MARJORIE WENT
1997 CHILDREN'S TRUST

By: /s/ James M. Bustillo

By: /s/ Marjorie Went

Its Trustees

CURAGEN CORPORATION

By /s/ David M. Wurzer

Its /s/ EVP and CFO

CuraGen Corporation has omitted from this Exhibit 10.21 portions of the Agreement for which CuraGen Corporation has requested confidential treatment from the Securities and Exchange Commission. The portions of the Agreement for which confidential treatment has been requested are marked with X's in brackets and such confidential portions have been filed separately with the Securities and Exchange Commission.

Exhibit 10.21

CURAGEN-GLAXO WELLCOME PHARMACOGENOMICS RESEARCH and LICENSE AGREEMENT

Effective as of the date of complete mutual execution of this document, (the "Effective Date"), GlaxoWellcome, Inc., having an address of Five Moore Drive, PO Box 13398, Research Triangle Park, North Carolina 27709-3398, U.S.A., ("GW"), and CuraGen Corporation, having an address of 555 Long Wharf Drive, 11th Floor, New Haven, Connecticut 06511, ("CURAGEN") agree as follows:

ARTICLE I
BACKGROUND

1.00 CURAGEN has developed and represents that it is the sole owner of functional genomics technologies known as Quantitative Expression Analysis technology, GeneScape(R) software, GeneCalling(R) bioinformatics software, and the Rodent SeqCalling(TM) database. CURAGEN offers a Pharmacogenomics Program that includes GeneScape(R), GeneCalling(R) and CuraShop(TM). CURAGEN also offers a Subscription Program that includes the Rodent SeqCalling(TM) database. Collectively, the Pharmacogenomics Program and the Subscription Program are offered as the Pharmacogenomics Collaboration.

1.01 GW and CURAGEN wish to initiate the performance of such Pharmacogenomics Collaboration in order to enable and expedite the discovery of information and the development of novel and improved pharmaceutical and diagnostic products.

1.02 GW wishes to obtain certain commercial rights to inventions made in the performance of the Pharmacogenomics Collaboration pursuant to this Agreement, including background inventions needed to commercially benefit from such licenses.

1.03 Therefore, this Agreement witnesses that in consideration of the mutual covenants, terms and conditions set forth in this Agreement and other good and valuable consideration, the receipt and sufficiency of which is acknowledged, that the Parties agree as follows.

ARTICLE II
DEFINITIONS

2.00 Terms used in this Agreement (other than the names of parties and article headings) that are set forth with an initial capital letter have the meanings established for such terms in the succeeding paragraphs of this Article II, or as otherwise specifically defined hereinafter.

2.01 "Affiliate" shall mean any person, corporation, firm, limited liability company, partnership or other entity which directly or indirectly Controls or is Controlled by or is under common Control with a Party to this Agreement. "Control" or "Controlled" means ownership, directly or through one or more Affiliates, of fifty percent (50%) or more of the shares of stock entitled to vote for the election of directors, in the case of a corporation, or fifty percent (50%) or more of the equity interests in the case of any other type of legal entity, status as a general partner in any partnership, or any other arrangement whereby a Party controls or has the right to control the Board of Directors or equivalent governing body of a corporation or other entity, or the ability to cause the direction of the management or policies of a corporation or other entity.

2.02 "Confidential Information" shall be interpreted in accordance with the provisions of Article V, below.

2.03 "GW Product(s)" shall mean

(a) "Human Therapeutic(s)", which shall include all therapeutic modalities, including but not limited to small molecules, vaccines, aptamers, antisense, oligonucleotides, gene therapies and monoclonal antibodies that are discovered, developed and/or optimized using:

(i) [XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXX.]

Notwithstanding any provision in this Section, Human Therapeutics shall not include Protein Therapeutic Products.

(b) "GW Diagnostic Product(s)", which shall mean products that are used or sold for diagnostic purposes, including patient selection, disease and/or predisposition to disease identification, and treatment guidance and/or monitoring,
[XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX].

2.04 "Proprietary Material" shall mean samples provided by GW to CURAGEN for the purposes of performing the Pharmacogenomics Program and shall also be deemed to include the [XXXXXXX] and other substances actually contained in such samples.

2.05 "CURAGEN Background Inventions" shall mean all patent rights and know-how of CURAGEN which would be infringed by GW's development, manufacture, use, sale or importation of a GW Product. Specifically excluded from CURAGEN Background Inventions

are patent rights and know-how which cover the making, using or selling of a product for which CURAGEN has pre-clinical data prior to GW's request to license such patent rights and know-how.

2.06 "CURAGEN Product(s)" shall mean all products or uses not identified as GW Products, including but not limited to:

[XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX]

2.07 "CURAGEN Proprietary Material" shall mean all substances made by CURAGEN in the performance of the Pharmacogenomics Program other than mRNA pools extracted from GW Proprietary Material.

2.08 "Data Exclusivity Period" shall, with respect to any particular Project Data Set, mean one of three (3) defined periods as follows:

(a) "Primary Data Exclusivity Period" shall mean a [XXXX] period of time commencing on the first day of the calendar quarter following the calendar quarter in which the particular Project Data Set is completed pursuant to 3.01(c), during which time, GW shall have exclusive access to such Project Data Set;

(b) "Extended Data Exclusivity Period" shall mean a [XXXXXXX] extension of the Primary Data Exclusivity Period, during which time, GW shall have exclusive access to such Project Data Set; and

(c) "[XXXXXX] Data Exclusivity Period" shall mean the extension of an Extended Data Exclusivity Period [XXXXXX], during which time, GW shall have exclusive access to such Project Data Set.

2.09 "FTE" is an acronym that stands for Full Time Equivalent, which shall mean the equivalent of a full year of effort on a full time basis of a researcher

possessing skills and experience necessary to carry out applicable tasks under the Pharmacogenomics Program.

2.10 "Material or Materiality" shall mean a use or usage that is so essential to the conduct of an experiment that the experiment would not have been done without such use.

2.11 "Net Sales" shall mean
[XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.]

2.12 "Party or Parties" shall respectively refer to GW and CURAGEN.

2.13 "Patent Rights" means the rights and interests in and to issued patents and pending patent applications without limitation to any country, including, but not limited to, all provisional applications, substitutions, continuations, continuations-in-part, divisions, and renewals, all letters patent granted thereon, and all reissues, reexaminations and extensions thereof, whether owned solely or jointly by a Party or licensed in by a Party, with the right to sublicense, now or in the future, wherein at least one claim of such patent right is to a Pharmacogenomics Project Invention.

2.14 "Project Data" shall mean all data and any other information obtained or generated by CURAGEN in the performance of a Pharmacogenomics Project in the Pharmacogenomics Program.

2.15 "Project Data Set" shall mean all Project Data resulting from a discrete Pharmacogenomics Project.

2.16 "Joint Planning Committee" or "JPC" shall have the meaning set forth in Article III.

2.17 "Pharmacogenomics Plan" shall mean the written description of the research to be performed by CURAGEN and GW under this Agreement, as presented in the form shown in GeneScape(R).

2.18 "Pharmacogenomics Project" shall mean (i) a particular project to process and analyze a specified set of samples as anticipated in a Pharmacogenomics Plan, or (ii) any other project mutually agreed to by the JPC.

2.19 "Pharmacogenomics Project Invention" shall mean any discovery, invention, know-how or trade secret conceived or made by employees of CURAGEN or GW or jointly by employees of both, (i) in the performance of a Pharmacogenomics Project hereunder, or in the course of evaluating or utilizing any Project Data Sets; or (ii) as the result of access to Subscription Database Data, in each

case that is based on, incorporates or makes Material inventive use of the corresponding Project Data Set or Subscription Database Data.

2.20 "Pharmacogenomics Program" shall mean the collection of Pharmacogenomics Projects to be performed by CURAGEN under this Agreement as described in the Pharmacogenomics Plan and amendments thereto.

2.21 "Pharmacogenomics Collaboration" shall mean, collectively, the Pharmacogenomics Program and, if applicable, the Subscription Program.

2.22 "Pharmacogenomics Collaboration Term" shall have the meaning set forth in Article III.

2.23 "Subscription Program" shall mean the access to CURAGEN's proprietary databases under this Agreement.

2.24 "Subscription DataBase" shall mean CURAGEN's Rodent SeqCalling(TM) database.

2.25 "Subscription DataBase Data" shall mean all data in the Subscription DataBase.

2.26 "License Term" shall have the meaning set forth in Article VIII.

2.27 "Territory" shall mean all countries of the world.

2.28 "Valid Claim(s)" shall mean an unexpired claim of (i) any issued patent within Patent Rights which has not been finally declared invalid or unenforceable by a patent office or by a court or other body of competent jurisdiction in any unappealed or unappealable decision and which has not been lost through an interference or opposition proceeding or (ii) any pending patent application within Patent Rights which has not been finally rejected by a patent office of competent jurisdiction in any unappealed or unappealable decision and which has not been pending for more than seven (7) years.

ARTICLE III
RESEARCH PROGRAM

3.00 Basic Provisions of the Pharmacogenomics Collaboration.

(a) The objective of the Pharmacogenomics Program will be for CURAGEN to generate and deliver to GW Project Data Sets by performing Pharmacogenomics Projects. CURAGEN shall use commercially reasonable efforts to perform such tasks as are set forth in the Pharmacogenomics Plan. CURAGEN shall devote an average of at least [XXXX] FTEs per year to the Pharmacogenomics Program over its duration (the "Staffing

Level") unless GW and CURAGEN have agreed on a change in the Staffing Level as provided in (b) below;

(b) GW may request an increase in the Staffing Level of up to a of total [XXXXX] additional FTEs during the first three (3) years of this Agreement [XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX] to be devoted to the Pharmacogenomics Program, subject to the agreement of CURAGEN. CURAGEN will use commercially reasonable efforts to increase the staffing level to be effective at the semi-annual anniversary of the Effective Date following such

a request. Once the Staffing Level is increased, it may not be decreased during the following [XXXXXX] period without the consent of CURAGEN; and

(c) The objective of the Subscription Program will be for CURAGEN to use commercially reasonable efforts to provide GW with access to the Subscription Database.

3.01 Collaborative Efforts and Reports.

(a) The Parties agree that the successful execution of the Pharmacogenomics Program will require the collaborative use of both Parties' areas of expertise. The Parties shall keep the JPC fully informed about the status of the portions of the Pharmacogenomics Collaboration they respectively perform. In particular, without limitation, each Party shall furnish to the JPC quarterly written reports within thirty (30) days after the end of each quarterly period, describing the progress of its activities in reasonable detail, including (I) a summary of the progress of any ongoing Pharmacogenomics Projects, (II) a summary of uses of Project Data and Subscription DataBase Data, including but not limited to [XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX], and (III) a description of Project Data Sets from completed Pharmacogenomics Projects. At any time, upon the reasonable request of GW, CURAGEN will provide an update of the status of Pharmacogenomics Projects to GW;

(b) Scientists at CURAGEN and GW shall cooperate in the performance of the Pharmacogenomics Program and, subject to any confidentiality obligations to third parties, shall exchange information and materials (including GW Proprietary Material) as necessary to carry out the Pharmacogenomics Program. Each Party will attempt to accommodate any reasonable request of the other Party to send or receive personnel for purposes of collaborating or exchanging information under the Pharmacogenomics Program. Such visits and/or access will have defined

purposes and be scheduled in advance. The requesting Party will bear the reasonable travel and lodging costs of any such personnel;

(c) CURAGEN will give written notice to GW and the JPC upon Completion of the Project Data Set from each Pharmacogenomics Project. "Completion" of a Project Data Set shall occur upon [XXXXXXXXXXXX XXXXXX XXXXXXXXXXXXXXXXX]; and

(d) CURAGEN shall set up and maintain, throughout the Pharmacogenomics Collaboration Term, a secure partition of its GeneScape(R) database and software for use by GW exclusively for the purposes of performing the Pharmacogenomics Collaboration, and shall provide online electronic mail and telephone help during normal business hours in the use thereof to GW. CURAGEN and GW shall jointly set up and maintain a secure connection to said partition of the GeneScape(R) database and software in order to give GW on-line access thereto. GW shall have no rights to use the GeneScape(R) and software except as expressly set forth herein. In the event a dedicated line or lines is or are needed to provide access, GW shall be responsible for all costs associated therewith.

3.02 Training. -

[XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.]

3.03 Pharmacogenomics Plans. - The Pharmacogenomics Plan for the first six (6)
----
months of the Pharmacogenomics Program shall be agreed upon by the Parties within thirty (30) days of the Effective Date and shall include the initial Pharmacogenomics Projects and plans to implement access to the GeneScape(R) database and software for GW. Every [XXXXX] during the Pharmacogenomics Collaboration Term [XXXXXXXXXXXXXXXX], the Pharmacogenomics

Plan shall be updated by the Parties to cover the next three (3) months and shall be approved by the JPC no later than thirty (30) days before the end of each semi-annual period. The Pharmacogenomics Plan shall set forth specific Pharmacogenomics Projects for the period covered by the Pharmacogenomics Plan. The JPC will consider adjustments in the Pharmacogenomics Plan at any time upon the request of GW or CURAGEN.

3.04 Exclusivity.- To the extent consistent with the rights and obligations of
----
CURAGEN that are expressly set forth in this Agreement, nothing contained in

this Agreement shall in any other way restrict CURAGEN's right to perform research or collaborate with third parties and to grant to third parties the right to exploit the results of any such research or collaborations without restrictions.

3.05 Joint Planning Committee. - The JPC will be responsible for the planning and monitoring of the Pharmacogenomics Collaboration. In particular, the activities of the JPC shall include:

(a) Approving Pharmacogenomic Projects and their associated Pharmacogenomics Plans and establishment of prioritization criteria for specific Pharmacogenomics Projects, including explicit determination of experimental initiation and Completion;

(b) Supervision of workflow, including experimental sample transfer, sample analysis and data quality control, database posting, data analysis and summarization, software installation (access), training and maintenance;

(c) Monitoring of sample throughput, specific project and overall Pharmacogenomics Collaboration progress, including resolving issues and determining future Pharmacogenomic Plans and timelines;

(d) Ensuring compliance with the terms of the Agreement;

(e) Ensuring timely disclosure of Pharmacogenomics Project Inventions and the development and implementation of patenting strategies; and

(f) Assigning tasks and responsibilities taking into account each Party's respective specific capabilities and expertise in order in particular to avoid duplication and enhance efficiency and synergies.

3.06 JPC Membership. - CURAGEN and GW each shall appoint, in their sole discretion, three members to the JPC, which shall include a Co-Chair to be designated by GW and a Co-Chair to be designated by CURAGEN. Substitutes or alternates for the Co-Chairs or other JPC members may be appointed at any time by notice in writing to the other Party. The Parties may mutually agree to change the size of the JPC as long as there shall be an equal number of representatives of each Party on the JPC. The initial Co-Chairs and other JPC members shall be designated by the Parties within twenty (20) days of the Effective Date. CURAGEN shall appoint a Project Coordinator, who shall be reasonably satisfactory to GW, to serve as the principal liaison with GW for the Pharmacogenomics Program. Such Project Coordinator will be one of CURAGEN's members of the JPC.

3.07 JPC Meetings. - The JPC shall meet at least quarterly, with such meetings

to be held, alternately, in New Haven, Connecticut, and GW's RTP facilities unless the Parties agree otherwise. Any additional meetings shall be held at places and on dates selected by the Co-Chairs of the JPC. In addition, the JPC may act without a formal meeting by a written memorandum signed by the Co-Chairs of the JPC. Whenever any action by the JPC is called for hereunder during a time period in which the JPC is not scheduled to meet, the Co-Chairs of the JPC shall cause the JPC to take the action in the requested time period by calling a special meeting or by action without a meeting. Subject to the obligations set forth in Article V, representatives of each Party or of its Affiliates, in addition to the members of the JPC, may attend JPC meetings at the invitation of either Party with the prior approval of the other Party, which shall not be unreasonably withheld.

3.08 Minutes of JPC Meetings. - The JPC shall keep accurate minutes of its deliberations which record all proposed decisions and all actions recommended or taken. Drafts of the minutes shall be delivered to the Co-Chairs of the JPC within twenty (20) days after the meeting. The

Party hosting the meeting shall be responsible for the preparation and circulation of the draft minutes. Draft minutes shall be edited by the Co-Chairs and shall be issued in final form only with their approval and agreement as evidenced by their signatures on the minutes.

3.09 Quorum; Voting; Decisions. - At each JPC meeting, at least two (2) member(s) appointed by each Party present in person or by telephone shall constitute a quorum and decisions shall be made by majority vote. Each JPC member shall have one vote on all matters before the JPC, provided that the member or members of each Party present at an JPC meeting shall have the authority to cast the votes of any of such Party's members on the JPC who are absent from the meeting. Notwithstanding the foregoing, the objective of the Parties to this Agreement is that decisions of the JPC shall be made by consensus. However, except as otherwise set forth herein, in the event that the JPC is unable to resolve any matter before it as set forth above, such matter shall be resolved in good faith by GW management.

3.10 Expenses. - CURAGEN and GW shall each bear all expenses of their respective JPC members related to their participation on the JPC and attendance at JPC meetings.

3.11 Pharmacogenomics Collaboration Term. - The Pharmacogenomics Collaboration shall expire Five (5) years after the Effective Date unless earlier terminated by either Party pursuant to the provisions in Article X.
[XXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXX] At expiration, CURAGEN shall deliver to GW all raw and processed Project Data Sets in an appropriate format to be analyzed by GW independent of GeneScape(R).

3.12 Primary Exclusivity Period for Project Data Sets. - During the Primary Data Exclusivity Period for a particular Project Data Set, GW shall have a [XXXXXX], exclusive license and access to explore the utility and usefulness of such Project Data Set in its internal R&D programs for the purpose of pursuing the development of GW Products . Under such

license, CURAGEN and GW: (a) shall not use such Project Data Set for any purpose other than conducting the Pharmacogenomics Program hereunder and (b) shall keep such Project Data Set and related Pharmacogenomics Project Inventions and Patent Rights confidential and will not disclose or transfer the same to third parties by publication or otherwise, without the prior written consent of the other Party except as necessary to pursue patent protection. Notwithstanding the above CURAGEN shall have the right to explore the utility and usefulness of such Project Data Sets in its internal R&D programs for the purpose of pursuing the development of CURAGEN Products. CURAGEN shall use efforts no less than what it uses in the ordinary conduct of its business to limit disclosure of data or information resulting from CURAGEN's exploration of the Project Data Sets for its internal R&D programs to the extent that such disclosures might compromise GW's intellectual property rights.

3.13 Extended Data Exclusivity Period for Project Data Sets. - GW may elect to extend the Primary Data Exclusivity Period for any Project Data Set for an additional [XXXXXXXXXXX] period ("Extended Data Exclusivity Period") after expiration of the initial Primary Data Exclusivity Period by giving written notice to CURAGEN and making a payment of [XXXXXXXXXXXXXXXX] per Project Data Set to CURAGEN prior to expiration of the then current Primary Data Exclusivity Period for such Project Data Set or at such time thereafter as mutually agreed to by the Parties. The obligations under such Extended Data Exclusivity Period shall be the same as for the Primary Data Exclusivity Period.

3.14 [XXXXX] Exclusivity Period for Project Data Sets. - GW may elect to extend the Extended Data Exclusivity Period for any Project Data Set [XXXXXXX] ("[XXXX] Data Exclusivity Period") after expiration of the Extended Data Exclusivity Period by giving written notice to CURAGEN and making a payment of [XXXXXXXXXXXXXXXXXX] per Project Data Set to CURAGEN prior to expiration of the then current Extended Data Exclusivity Period for such Project Data Set or at such time thereafter as mutually agreed to by the Parties. The obligations under such [XXXXXXXXX] Data Exclusivity Period shall be the same as for the Extended Data Exclusivity Period.

3.15 Expiration of any Data Exclusivity Period. - Upon the expiration of the last to expire Data Exclusivity Period for any particular Project Data Set, GW's access and license to such Project Data Set shall convert from exclusive to non-exclusive, and CURAGEN shall have the right, at its sole option, to use such Project Data Sets for any purpose including but not limited to making the data available to third parties subject to Section 3.16 of this Agreement and any commercial licenses granted to GW herein, and not inconsistent with any other obligations expressly set forth in this Agreement.

3.16 Data Annotations. - Should CURAGEN elect to provide Project Data Sets to third parties pursuant to 3.15 above, CURAGEN shall not be permitted to identify the Project Data Set as being from GW or annotate the Project Data Set with the date of sample submission by GW to CURAGEN. Notwithstanding the above, CURAGEN shall be free to annotate such Project Data Sets with one or more of the following descriptors provided by GW:

[XXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXXX]

3.17 Subscription Database Data Access. - During the first three years of the Pharmacogenomics Collaboration Term, GW shall have [XXXX], non-exclusive access and license to explore the utility and usefulness of the Subscription Database Data. Under such license, GW: (a) [XXXXXXXXXXX]; and (b) shall keep such Subscription Database Data and related Pharmacogenomics Project Inventions and Patent Rights confidential and will not disclose or transfer the same to third parties by publication or otherwise, without the prior written consent of CURAGEN, except as necessary to pursue patent protection.

3.18 Software License. - Access to the GeneScape(R) database and software hereunder, or any components thereof, is hereby granted according to the following terms:

(a) The GeneScape(R) database, software and display screens are protected by copyright, patent, trade secret and other intellectual property laws. CURAGEN hereby grants to GW and its employees a non-exclusive non-transferrable license

to access the GeneScape(R) database and software solely for the purposes of the Pharmacogenomics Collaboration and during the Pharmacogenomics Collaboration Term. GW shall not copy the

GeneScape(R) database, software or display screens except as occurs during the normal course of CURAGEN-provided access. GW shall not reverse engineer, decompile, or disassemble the GeneScape(R) software or display screens. The GeneScape(R) database and software embody trade secrets of CURAGEN that are considered Confidential Information of CURAGEN and subject to the confidentiality provisions hereof; and

(b) If at any time during the term of this Agreement GW reasonably determines that an escrow of the CURAGEN software is necessary in the event of a CURAGEN bankruptcy proceeding, GW shall give written notice to CURAGEN requesting this escrow and CURAGEN shall, at CURAGEN's expense, put into a secure escrow (to be agreed by the Parties at the relevant time) copies of any relevant source code and documentation.

ARTICLE IV
FINANCIAL TERMS

4.00 Pharmacogenomics Collaboration Funding. - In consideration of CURAGEN's performance under the terms of this Agreement during the first, second and third years of the Pharmacogenomics Collaboration, GW will pay CURAGEN a research payment of [XXXXXXXXXXXXXXX] per year per FTE in the Staffing Level. The first such payment for the first year shall equal Two Million Seven Hundred Fifty Thousand Dollars ($2,750,000) and shall be made within thirty (30) days of the Effective Date of this Agreement. Thereafter, GW shall pay CURAGEN semi-annually, in advance, for each FTE in the Staffing Level until expiration or termination of the Pharmacogenomics Collaboration Term. For the fourth year, the FTE cost shall be adjusted based on [XXXXXXXXXXXXXXXXXXXXXXXXX]. For the

fifth year, the FTE cost shall be further adjusted based on [XXXXXXXXXXXXX]. GW will fund its own activities under the Pharmacogenomics Collaboration.

4.01 Subscription Program Fees. -It is understood and agreed by the Parties that all Subscription Program Fees will be [XXXXXXXXXXX] for the first three years of the Pharmacogenomics Collaboration Term. Subscription Program Fees will be negotiated in good faith in the event GW elects to retain access to the Subscription Database in years four and five of the Pharmacogenomics Collaboration Term. [XXXXXXXXXXXXXXXXX] CURAGEN shall be free to offer access to said Subscription Databases to third parties at any time on any terms not inconsistent with its obligations to GW under the terms of this Agreement.

ARTICLE V
TREATMENT OF CONFIDENTIAL INFORMATION

5.00 Confidential Information. - During the course of the Pharmacogenomics

Collaboration each Party may disclose to the other proprietary technical and business information, (collectively, "Confidential Information"). Except as expressly permitted hereunder, the receiving Party shall keep confidential all such Confidential Information of the other Party and will not disclose such Confidential Information of the other Party to third parties by publication or otherwise. Each Party shall take reasonable steps to ensure that all of its employees and consultants shall protect and use Confidential Information of the other Party only in accordance with the terms hereof. Each Party further agrees not to use Confidential Information of the other Party for any purpose other than as expressly permitted hereunder. Such obligations of confidentiality and non-use shall remain in effect for a period of [XXXXXX] years after the receipt of any such Confidential Information or, in the case of Confidential Information related to a license granted pursuant to Article XIII or IX, upon the expiration of this Agreement, whichever event is later. Notwithstanding the foregoing, it is understood and agreed that the receiving Party's obligations of confidentiality and nonuse herein shall not apply to any information which:

(a) is, at the time of disclosure by the disclosing Party hereunder, or thereafter becomes, a part of the public domain or publicly known or available through no fault or negligence of the receiving Party or any of its Affiliates; or

(b) was otherwise in the receiving Party's lawful possession prior to disclosure by the disclosing Party, as demonstrated by the receiving Party's written records; or

(c) is lawfully disclosed to the receiving Party or any of its Affiliates on a non-confidential basis by a third party who is not in violation of an obligation of confidentiality to the disclosing Party relative to such information; or

(d) was required by law to be disclosed; or

(e) was independently developed by the receiving Party or an Affiliate without the use of any of the disclosing Party's Confidential Information.

5.01 Publications. - It is expected that each Party may wish to publish the
---

results of its research under this Agreement. Contributions by the other Party shall be acknowledged in any publication by the publishing Party. In order to safeguard intellectual property rights, the Party wishing to publish or otherwise publicly disclose the results of its research hereunder shall first submit a draft of the proposed manuscripts to the JPC for review, comment and consideration of appropriate patent application preparation activity at least [XXXXXXX] days prior to any submission for publication or other public disclosure. The JPC will advise the Party seeking publication as to whether a patent application will be prepared and filed or whether trade secret protection

should be pursued. The JPC will, in cooperation with both Parties, determine the appropriate timing and content of any such publications. The JPC can, in its discretion, request that the publishing Party delay publication for up to an additional [XXXXX] days for the purpose of preparation of an appropriate patent application(s).

5.02 Press Release and Regulatory Filings. - The Parties shall mutually agree on a press release announcing the execution of this Agreement and on any confidential treatment request to be filed with the Securities and Exchange Commission with respect to this Agreement. Once any written statement is approved for disclosure by both Parties, either Party may make subsequent

public disclosures of the contents of such statement without the further approval of the other Party. Nothing in this Agreement shall be construed to prohibit either party from disclosing factual information or data relating to this Agreement which may be required by law to be disclosed. The Parties shall make a commercially reasonable effort to make a press release within five (5) days of the Effective Date of this Agreement.

ARTICLE VI
INTELLECTUAL PROPERTY RIGHTS

6.00 GW Proprietary Material. - GW Proprietary Material shall remain the property of GW and CURAGEN shall use such GW Proprietary Material only for the purpose of conducting the Pharmacogenomics Program hereunder and shall not transfer GW Proprietary Material to any other person or entity.

6.01 Data. - All data generated by CURAGEN in the course of the Pharmacogenomics Collaboration and all data currently residing in any of the Subscription Databases subscribed to herein, as well as data subsequently generated and added thereto, shall be owned by CURAGEN. The Parties' rights to use Project Data Sets and the Subscription Databases shall be subject to the provisions of Articles VIII and IX of this Agreement.

6.02 Inventions, Notification. Each Party shall provide the other with clearly defined written descriptions of what each Party considers to be subject matter that is potentially capable of intellectual property protection. Each Party shall thereafter notify the other Party within sixty (60) days of any Pharmacogenomics Project Inventions.

6.03 Inventions, Ownership. Inventorship of any invention shall be determined in accordance with the patent laws of the United States. Ownership of any

inventions shall vest with the employers of the inventors. Inventions that are solely owned by GW under this provision shall be subject to the licenses granted by GW to CURAGEN in this Agreement. Inventions that

are solely owned by CURAGEN under this provision shall be subject to the licenses granted by CURAGEN to GW in this Agreement. Inventions that are jointly owned by GW and CURAGEN under this provision shall be subject to each co-owner's license grant obligations to each other in this Agreement.

6.04 Inventions, Inventor Assignments. - GW and CURAGEN warrant to each other that their employees, non-employee contractors, and non-employee research collaborators are under obligation to assign their rights to GW or CURAGEN, as the case may be, with respect to Pharmacogenomics Project Inventions. GW and CURAGEN agree to use commercially reasonable efforts to obtain, maintain and secure such assignments. The Parties' rights and interests, including commercialization rights, shall be subject to the provisions of Articles XIII and IX.

6.05 Inventions, Property Rights to Biological Materials. GW will obtain the necessary permission of any third party donor of materials before delivering such materials to CURAGEN for analysis and experimentation. [XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX X.]

6.06 Use of Third Party Materials. [XXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXX]

6.07 Conflict with Preexisting CURAGEN Projects. [XXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXX]

ARTICLE VII

PROVISIONS CONCERNING THE FILING, PROSECUTION AND MAINTENANCE OF PATENT RIGHTS

7.00 GW Inventions. GW shall have sole responsibility for the preparation,

filing and maintenance of patent applications on Pharmacogenomic Project Inventions solely owned by GW. GW shall have discretion as to maintaining its applications. If GW elects not to pursue a given application for such Pharmacogenomic Project Inventions, GW shall give notice to CURAGEN, who shall have the option of taking over responsibility for said application.

7.01 CURAGEN Inventions. - CURAGEN shall have sole responsibility for the preparation, filing and maintenance of patent applications on Pharmacogenomic Project Inventions solely owned by CURAGEN. CURAGEN shall have discretion as to maintaining its applications. If CURAGEN elects not to pursue a given application for such Pharmacogenomic Project Inventions, CURAGEN shall give notice to GW, who shall have the option of taking over responsibility for said application.

7.02 Jointly Owned Inventions. GW shall have sole responsibility for the preparation, filing and maintenance of patent applications on Pharmacogenomic Project Inventions that are jointly owned by CURAGEN and GW. Such jointly owned patent applications shall not be abandoned by GW without the express consent of CURAGEN, who shall have the right to assume responsibility for any such application that GW wishes to abandon.

ARTICLE VIII
LICENSE TO GW

8.00 GW Products -- During The Data Exclusivity Period. - For the duration of the Data Exclusivity Period for a particular Project Data Set, CURAGEN hereby grants to GW an exclusive license throughout the Territory, to the extent CURAGEN has the right to grant such license, under CURAGEN's rights in and to Pharmacogenomics Project Inventions and Patent

Rights related to such Project Data Sets, [XXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXX].

8.01 GW Products -- After The Data Exclusivity Period. - After expiration of the last to expire Data Exclusivity Period for a particular Project Data Set, CURAGEN's license to GW as set forth in Section 8.00 of this Agreement shall convert to a non-exclusive license throughout the Territory.

8.02 Non-GW Diagnostic Products. - For the duration of the Data Exclusivity Period for a particular Project Data Set, CURAGEN hereby grants to GW [XXXXXXXXXXXXXX XXXXXX XXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXX]

8.03 Unblocking Licenses. - Upon grant of a license pursuant to Sections 8.00, 8.01 or 8.02 above, CURAGEN shall grant to GW a non-exclusive, fully paid, irrevocable license throughout the Territory, to the extent CURAGEN has the right to grant such license, under CURAGEN's rights in and to CURAGEN Background Inventions, solely to the extent necessary to allow GW to practice the licenses granted herein and for no other purpose. The term of this Unblocking License shall be co-extensive with the term of the corresponding licenses granted above.

8.04 Sublicenses. - GW shall have the right to grant sublicenses under any portion of the licenses granted by CURAGEN to GW Products in Section 8.00 above, provided, however, that GW remains obligated to ensure any future sub-licensee's performance of GW's royalty and milestone obligations to CURAGEN as set forth herein. For [XXXXXXXXXX] licensed pursuant to Section 8.00 above, if GW elects to license or sell or otherwise provide a third party access to such [XXXXXXXXXXXXXXX] for purposes other than the development of GW Products for GW as provided for in Section 8.00 above, GW and CURAGEN shall enter into good faith negotiations to develop and execute a business strategy to exploit such [XXXXXXXXXXXXXX].

8.05 Milestone Payments For Human Therapeutics related to the Use of XXXX. - [XXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXX], GW shall pay CURAGEN a one-time payment of [XXXXXXXXXXXX] per [XXXXX] upon the entry of the [XXXXXXXXXX XXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXX XXXXXXX XXXXXXXXXXXXXXXX]. In any event, GW shall not be liable for such payments in the event the discovered Target and/or the discovered association of the Target with a disease is in the public domain at Completion.

8.06 Milestone Payments for Human Therapeutics related to the Use of [XXXXXXX]. - GW shall pay CURAGEN [XXXXXXXXXX], upon the first entry of a Human Therapeutic product into [XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXX]

8.07 Milestone Payments For GW Diagnostics Products. For GW Diagnostic Products, [XXXXXXXXXXXXXXXXXXXXXXXXXX].

8.08 Royalty Payments For Human Therapeutics related to the Use of [XXXX]. - For GW Products for which a milestone payment was due and payable under Section 8.05 above, the royalty shall be [XXXX] percent ([XXXX]%).

8.09 Royalty Payments For Human Therapeutics related to the Use of [XXXXXXX]. -

For GW Products for which a milestone payment was due and payable under Section 8.06 above, GW shall pay CURAGEN a royalty of [XXXX] percent ([XXXX]%) of Net Sales in the Territory.

8.10 Royalty Payments For Contributions In Diagnostics. - For GW Diagnostic Products, GW shall pay CURAGEN a royalty of [XXXX] percent ([XXXX]%) of net sales in the Territory, provided that such royalty will be corrected for [XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXX.]

8.11 Remittance of Royalty Payments. - Royalty payments shall be made to CURAGEN in United States Dollars quarterly within forty-five (45) days following the end of each calendar quarter for which royalties are due. Each royalty payment shall be accompanied by a report summarizing the total Net Sales for each GW Product during the relevant three-month period and the calculation of royalties, if any, due thereon.

8.12 Foreign Currency Conversions. - All royalties shall be payable in full in the United States in United States Dollars, regardless of the countries in which sales are made. For the purpose of computing Net Sales for GW Products sold in a currency other than United States Dollars, such currency shall be converted into United States Dollars at the exchange rate for buying U.S. Dollars set forth in The Wall Street Journal for the last business day of the calendar quarter.

8.13 License Term Subject To Royalty Payments.- The term of any license granted hereunder, which is subject to the obligation to pay royalties to CURAGEN by GW, its Affiliates or sublicensees, with respect to each GW Product, shall be on a country by country basis until [XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX]. In the event that a GW product is being sold in a particular country by GW, its Affiliates or sublicensees, pursuant only to a license to a Pharmacogenomics Project Invention, the term shall be for [XXXXXX] years from the first commercial sale of such Licensed Product in that country. Following such period, GW shall have a fully paid-up, irrevocable license in such country under the relevant Patent Rights, Pharmacogenomics Project Inventions and/or CURAGEN Background Inventions in such country.

8.14 Overdue Royalties. - Royalties not paid within the time period set forth in this Article VIII shall bear interest at a rate of [XXXX] percent ([XXXX]%) per month from the due date until paid in full.

8.15 Records Retention. Audits. - GW, its Affiliates and sublicensees shall keep, for [XXXX] from the date of each payment of royalties, complete and accurate records of sales by GW and its Affiliates and sublicensees of each GW Product in sufficient detail to allow the accruing royalties to be determined accurately. CURAGEN shall have the right for a period of

[XXXXXXX] after receiving any report or statement with respect to royalties due and payable to appoint an independent certified public accountant reasonably acceptable to GW to inspect the relevant records of GW and its Affiliates and sublicensees to verify such report or statement. GW and its Affiliates and sublicensees shall each make its records available for inspection by such independent certified public accountant during regular business hours at such place or places where such records are customarily kept, upon reasonable notice from CURAGEN, solely to verify the accuracy of the reports and payments. Such inspection right shall not be exercised more than once in any calendar year nor more than once with respect to sales of any GW Product in any given payment period. CURAGEN agrees to hold in strict confidence all information concerning royalty payments and reports, and all information learned in the course of any audit or inspection, except to the extent necessary for CURAGEN to reveal such information in order to enforce its rights under this Agreement or if disclosure is required by law, regulation or judicial order. CURAGEN shall pay for such inspections.

8.16 Tax Withholding. - CURAGEN agrees that any tax burden levied by any countries outside of the United States covered by this Agreement on royalty income to CURAGEN of royalties from GW under this Agreement shall be borne by CURAGEN. In the event that such tax is required to be withheld by GW, its Affiliates, licensees or sublicensees, GW shall deliver to CURAGEN a statement including the amount of tax withheld and justification therefor, and such other information as may be necessary for United States foreign tax credit purposes.

8.17 Notice of Infringement. - If, during the term of License Agreement, either Party learns of any infringement or threatened infringement by a third party of the patents within Patent Rights, such Party shall promptly notify the other Party and shall provide such other Party with available evidence of such infringement.

8.18 Infringement Litigation. - GW shall have the first right (but not the obligation), at its own expense, to bring suit (or other appropriate legal action) against any actual or suspected infringement of the Patent Rights licensed hereunder provided that GW has an exclusive license to the infringed claim(s) of any such Patent Right. If GW does not take such action within one hundred twenty (120) days after written notice from CURAGEN of the infringement,

CURAGEN shall have the right (but not the obligation), at its own expense, to bring suit against such infringement. Any amount recovered, whether by judgment or settlement, shall first be applied to reimburse the costs and expenses (including attorneys' fees) of the Party bringing suit, then to the costs and expenses (including attorneys' fees), if any, of the other Party. Any amounts remaining shall be allocated to each party in accordance with each Party's damages incurred on account of such infringement, calculated in accordance with United States laws pertaining to patent damages.

8.19 Cooperation. - Each Party shall, at the expense of the other Party, execute all papers and perform such other acts as may be reasonably required to maintain any infringement suit brought in accordance with Section 8.18 above (including giving legal consent for bringing such suit, and agreeing to be named as a plaintiff or otherwise joined in such suit), and at its option and expense, may be represented in such suit by counsel of its choice.

8.20 Conditions Subsequent. - GW's obligations to remit milestone payments and royalties under this Agreement are contingent upon completion by GW of a satisfactory review of the patents of CURAGEN for compliance with GW's understanding that CURAGEN has sufficient ownership, authority, permission or right to grant the licenses contemplated by this Agreement, and that GW's practice of the patents of CURAGEN will not infringe the proprietary rights of any third party. Such review will be completed by GW no later than [XXXXX] following the Effective Date of this Agreement. To the extent GW finds any deficiencies in CURAGEN's ownership, authority or permissions to grant the licenses contemplated by this Agreement, GW will promptly, within said [XXXXXXX] period, notify CURAGEN of any and all steps GW believes need to be taken to perfect CURAGEN's right to grant such licenses, and will promptly, whether or not within said [XXXXXX] period, indicate to CURAGEN when GW is satisfied that any such steps have been completed.

ARTICLE IX
GRANTBACKS to CURAGEN

9.00 Patent License Grant-back to CURAGEN. - GW hereby grants to CURAGEN, under GW's rights in and to Pharmacogenomics Project Inventions and Patent Rights related thereto, a [XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX.]

9.01 Data Set Exclusivity Grant-back to CURAGEN. - Upon expiration of the last

to expire Data Exclusivity Period related to a particular Project Data Set, GW hereby grants back to CURAGEN under GW's rights in and to Pharmacogenomics Project Inventions and Patent Rights related to such Project Data Set, a fully paid up, non-exclusive license in the Territory to develop, make, have made, use, have used, sell, have sold, offer for sale, import and have imported such Pharmacogenomics Project Inventions and Patent Rights for any purpose. Such license shall include the right to grant sublicenses at CURAGEN's sole discretion.

9.02 Unblocking Licenses Grant-back to CURAGEN. - Upon grant of a license pursuant to Sections 9.00 or 9.01 above, GW grants to CURAGEN, a fully paid up, non-exclusive license in the Territory to any background inventions solely to the extent necessary to allow CURAGEN to practice the licenses granted to CURAGEN herein and for no other purpose. In the event GW has not previously acquired transferable rights for such background inventions, GW shall use best efforts to obtain such rights on CURAGEN's behalf. For the purposes of this Agreement, best efforts shall mean efforts that are no less than what GW would make to acquire such rights for itself. GW does not warrant or undertake that it will be successful at obtaining such rights.

9.03 Research License Grant-back to CURAGEN. - GW grants back to CURAGEN under GW's rights in Pharmacogenomics Project Inventions and Patent Rights related thereto, a fully-paid non-exclusive license to make, have made, use or import any such licensed Pharmacogenomics Project Inventions, Patent Rights and CURAGEN Proprietary Materials for internal research purposes. Nothing in this Section 9.03 shall limit any license otherwise granted to CURAGEN.

9.04 [XXXXXXXXXXXXXXXXXXXXXXX. - XXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

ARTICLE X

TERMINATION

10.0 Early Termination. - Either Party may terminate the Pharmacogenomics Collaboration without cause at its sole discretion upon three (3) months prior written notice to the other Party , however neither party shall be able to terminate this Agreement prior to fifteen (15) months after the Effective Date of the Agreement.

10.01 Effects of Early Termination Upon Rights. - Any termination of the Pharmacogenomics Program under Section 10.00 shall be without prejudice to the rights of either Party against the other, then accruing or otherwise accrued under this Agreement. Upon any such termination, all Proprietary Materials provided hereunder shall be destroyed or returned to the providing Party. Notwithstanding any provision in this Section 10.01 to the contrary:

(i) Where termination is by GW not for cause - CURAGEN shall complete processing of GW samples submitted prior to notification. Any Primary Data Exclusivity Period in effect at such termination shall automatically and immediately convert to non-exclusive, provided that GW may elect to extend the Data Exclusivity Period as per Section 3.13 and 3.14 within ten (10) days of such conversion. All Extended Data Exclusivity Periods and Perpetual Data Exclusivity Periods shall not be effected by such termination.

(ii) Where termination is by CURAGEN not for cause - CURAGEN shall complete processing of GW samples submitted prior to notification. GW will be entitled to add at no additional cost to GW [XXXXX] of exclusivity to any Primary Data Exclusivity Period and any Extended Data Exclusivity Period in effect at such termination. Any funds paid to CURAGEN under Section 4.00 that remain after CURAGEN completes processing of GW samples under this subsection shall be refunded to GW within sixty (60) days of completion of sample processing.

10.02 Post-Termination Access To GeneScape. In the event the Pharmacogenomics Collaboration is terminated under Section 10.00, GW shall be entitled to retain access to GeneScape(R) for up to [XXXXXXXX] after the date of termination. All provisions governing the use of GeneScape(R) shall survive such termination. At the end of the [XXXXXXXXX] extension, CURAGEN shall deliver to GW all raw and processed Project Data Sets in an appropriate format to be analyzed by GW independent of GeneScape(R).

10.03 Termination with Cause. - This Agreement and licenses granted by one Party to the other hereunder may be terminated upon any breach by the other Party of any material obligation or condition, effective thirty (30) days after giving written notice to the breaching Party of such termination in the case of a payment breach and sixty (60) days after giving written notice to the breaching Party of such termination in the case of any other breach, which notice shall describe such breach in reasonable detail. The foregoing notwithstanding, if the default or breach is cured or shown to be non-existent within the aforesaid thirty (30) or sixty (60) day period, the notice shall be deemed automatically withdrawn and of no effect.

10.04. Termination Following Bankruptcy. - If either Party files for protection under bankruptcy laws, makes an assignment for the benefit of creditors, appoints or suffers appointment of a receiver or trustee over its property, files a petition under any bankruptcy or insolvency act or has any such petition filed against it which is not discharged within sixty (60) days of the filing thereof, then the other Party may terminate this Agreement by notice to such Party.

10.05 Effect of Termination under Section 10.03. - Upon termination of this Agreement under Section 10.03 by either Party, all relevant licenses granted by the terminating Party to the breaching Party hereunder shall terminate automatically. In addition, upon any termination pursuant to Section 10.03, the breaching Party shall be deemed without any further action to have granted to the terminating Party an exclusive, worldwide, [XXXXX] license (including the right to grant sublicenses), under the breaching Party's ownership interest in any Pharmacogenomics Project Inventions and Patent Rights licensed hereunder for any use in all fields. At the request of the terminating Party, the breaching Party shall execute and deliver such bills of sale, assignments and licenses and other documents, if any, as may be necessary to fully vest in the terminating Party all right, title and interest provided for in this Section. In the event the breaching Party is GW, then all Data Exclusivity Periods then in effect shall automatically convert from exclusive to non-exclusive status, except as provided for in Section 6.06. In the event that CURAGEN is the breaching Party, then all Primary Data Exclusivity Periods and Extended Data Exclusivity Periods shall automatically convert to [XXXXXX] Data Exclusivity Periods.

10.06 Payment Obligations. - GW shall remain liable for all obligations accruing prior to termination.

10.07 Remedies. If either Party shall fail to perform or observe its material obligations, or otherwise breaches any of its material obligations under this Agreement, in addition to any right to terminate this Agreement, the non-defaulting Party shall not be deemed to have waived any other relief or remedies available under law or equity.

10.09 Surviving Provisions. - Notwithstanding any provision herein to the contrary, the rights and obligations set forth in Article V hereof, as well as any rights and obligations otherwise accrued, shall survive the normal expiration or early termination of this Agreement.

ARTICLE XI
MISCELLANEOUS

11.00 CURAGEN Representations and Covenants. - CURAGEN represents and warrants that: (a) the execution and delivery of this Agreement and the performance of the transactions contemplated hereby have been duly authorized by all appropriate CURAGEN corporate actions; (b) CURAGEN is under no obligation which is inconsistent with this Agreement, except as specifically set forth herein; (c) CURAGEN has the full right and legal capacity to grant the rights to GW recited pursuant to Article VIII without violating the rights of any third party; and that (d) CURAGEN's GeneScape(R) software is "Year 2000" compliant. CURAGEN covenants that (a) CURAGEN will obtain from its employees and consultants rights of assignment with respect to all Pharmacogenomics Project Inventions; and (b) CURAGEN will not, without GW's prior written consent, enter into any agreement with any third party that would prevent CURAGEN's performance of CURAGEN's obligations to GW under this Agreement. Nothing in this Agreement shall be interpreted as obligating GW to perform any additional work beyond that set forth in the Pharmacogenomics Plan.

11.01 GW Representations and Covenants. - GW represents and warrants that: (a) the execution and delivery of this Agreement and the performance of the transactions contemplated hereby have been duly authorized by all appropriate GW corporate action; (b) GW is under no obligation which is inconsistent with this Agreement; and (c) GW has the full right and legal capacity to grant the rights to CURAGEN recited pursuant to Article IX without violating the rights of any third party, except as provided for in Section 6.06. GW covenants that (a) GW will obtain from its employees and consultants rights of assignment with respect to all Pharmacogenomics Project Inventions; and (b) GW will not, without CURAGEN's prior written consent, enter into any agreement with any third party that is inconsistent with the terms of GW's obligations to CURAGEN under this Agreement.

11.02 No Infringement As of the Effective Date, CURAGEN represents that it has neither been notified of infringement, nor sued for infringement by any third party relating to CURAGEN proprietary technology that would be used in the course of GW's participation in the Pharmacogenomics Collaboration.

11.03 No Warranties.

(a) Nothing in this Agreement is or shall be construed as:

(i) a warranty or representation by CURAGEN as to the validity or scope of any application or patent within the Patent Rights;

(ii) a warranty or representation that anything made, used, sold or otherwise disposed of under any license granted pursuant to this Agreement is or will be free from infringement of patents, copyrights, and other rights of third parties.

(b) Except as expressly set forth above in this Agreement,

NEITHER PARTY MAKES ANY REPRESENTATIONS OR EXTENDS ANY WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED. THERE ARE NO EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS, OR FITNESS FOR A PARTICULAR PURPOSE, OR OF NON-INFRINGEMENT OF ANY PATENT, COPYRIGHT, TRADEMARK, OR OTHER RIGHTS, OR ANY OTHER EXPRESS OR IMPLIED WARRANTIES.

11.04 Liability. - NOTWITHSTANDING ANYTHING ELSE IN THIS AGREEMENT OR OTHERWISE, NEITHER PARTY WILL BE LIABLE WITH RESPECT TO ANY SUBJECT MATTER OF THIS AGREEMENT UNDER ANY CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER LEGAL OR EQUITABLE THEORY FOR (I) ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OR LOST PROFITS OR (II) COST OF PROCUREMENT OF SUBSTITUTE GOODS, TECHNOLOGY OR SERVICES, PROVIDING HOWEVER, THAT CURAGEN WILL BE LIABLE FOR DIRECT DAMAGES PROXIMATELY CAUSED BY FAILURE OF PERFORMANCE OF ITS OBLIGATIONS UNDER THIS AGREEMENT AND BOTH PARTIES WILL BE LIABLE FOR DIRECT DAMAGES PROXIMATELY CAUSED BY FAILURE OF THE VERACITY OF THEIR REPRESENTATIONS AND WARRANTIES CONTAINED IN THIS AGREEMENT.

11.05 Notices. - Any notices, requests, deliveries, approvals or consents required or permitted to be given under this Agreement to GW or CURAGEN shall be in writing and shall be personally delivered or sent by facsimile (with written confirmation to follow via United States first class mail), overnight courier providing evidence of receipt or certified mail, return receipt requested, postage prepaid, in each case to the respective address specified below (or to such address as may be specified in writing to the other Party hereto):

If to CURAGEN: 555 Long Wharf Drive, 11th Floor
New Haven, CT 06511
Attn: Executive Vice President
Facsimile No. (203) 401-3333

If to GW: Five Moore Drive
PO Box 13398
Research Triangle Park, NC 27709-3398
Attn: Company Secretary
Facsimile No. (919) 549-8687

Such notices shall be deemed to have been sufficiently given on: (a) the date sent if delivered in person, (b) the next business day after dispatch

in the case of transmission by facsimile or overnight courier or (c) five (5) business days after deposit in the U.S. mail in the case of certified mail.

11.06 Arbitration - Any dispute arising out of or relating to this Agreement, or any alleged breach of this Agreement, shall be settled by binding arbitration in accordance with the Rules of the American Arbitration Association ("AAA"), except as modified by this Section 11. Each arbitration shall be conducted by three arbitrators, consisting of one arbitrator chosen by each party and the third arbitrator chosen by the first two. In the event that the first two arbitrators are not able to agree upon and choose a third arbitrator, the third arbitrator shall be appointed in accordance with the AAA Rules. The arbitration proceeding shall be conducted in the English language in New York, N.Y., unless the Parties agree to conduct the arbitration in another location. The arbitration shall be binding and not appealable to any court in any jurisdiction. The prevailing party may enter the arbitration decision in any court having competent jurisdiction.

11.07 Currency - The Parties agree that, unless otherwise indicated, all monetary amounts referred to in this Agreement are in United States currency.

11.08 Further Assurances - The Parties agree to execute such further documents and to do such further acts as may be necessary to implement and carry out the intent of this Agreement.

11.09 Limitations - Except as set forth elsewhere in this Agreement, neither Party grants to the other Party any right or license to any of its respective intellectual property.

11.10 Waiver. - The terms or conditions of this Agreement may be waived only by a written instrument executed by the Party waiving compliance. The failure of either Party at any time or times to require performance of any provision hereof shall in no manner affect its rights at a later time to enforce the same. No waiver by either Party of any condition or term shall be deemed as a continuing waiver of such condition or term or of another condition or term.

11.11 Assignment. - This Agreement may not be assigned by either Party without the consent of the other, except that each Party may, without such consent, assign this Agreement and the rights, obligations and interests of such Party, in whole or in part, to any of its Affiliates, to any purchaser of all or substantially all of its assets in the line of business to which this Agreement pertains or to any successor corporation resulting from any merger or consolidation of such Party with or into such corporations.

11.12 Force Majeure. - Neither Party shall be liable for failure of or delay in performing obligations set forth in this Agreement, and neither shall be deemed in breach of its obligations, if such failure or delay is due to natural disasters or any causes beyond the reasonable control of such Party. In event of such force majeure, the Party affected thereby shall use reasonable efforts to cure or overcome the same and resume performance of its obligations hereunder.

11.13 Construction. - The Parties hereto acknowledge and agree that: (i) each Party and its counsel reviewed and negotiated the terms and provisions of this Agreement and have contributed to its revision; (ii) the rule of construction to the effect that any ambiguities are resolved against the drafting Party shall not be employed in the interpretation of this Agreement; and (iii) the terms and provisions of this Agreement shall be construed fairly as to all Parties hereto and not in favor of or against any Party, regardless of which Party was generally responsible for the preparation of this Agreement.

11.14 Severability. - If any provision(s) of this Agreement are or become invalid, are ruled illegal by any court of competent jurisdiction or are deemed unenforceable under then current applicable law from time to time in effect during the Term hereof, it is the intention of the Parties that the remainder of this Agreement shall not be affected thereby provided that a Party's rights under this Agreement are not materially affected, in which circumstance the Parties hereto covenant and agree to renegotiate any such term, covenant or application of this Agreement in good faith in order to provide a reasonably acceptable alternative to the term, covenant or condition of this Agreement or the application thereof that is invalid, illegal or unenforceable, it being the intent of the Parties that the basic purposes of this Agreement are to be effectuated.

11.15 Status. - Nothing in this Agreement is intended to, or shall be deemed to, constitute a partnership, agency, employer-employee, or joint venture relationship between the Parties.

11.16 GW Indemnification of CURAGEN. - GW shall indemnify, defend and hold harmless CURAGEN, its Affiliates and their respective directors, officers, employees, and agents and their respective successors, heirs and assigns (the "CURAGEN Indemnitees"), against any liability, damage, loss or expense (including reasonable attorneys' fees and expenses of litigation) incurred by or imposed upon the CURAGEN Indemnitees, or any of them, in connection with any claims, suits, actions, demands or judgments of third parties, including without limitation personal injury matters (except to the extent such claims, suits,

actions, demands or judgments result from a material breach of this Agreement, or the negligence or willful misconduct on the part of CURAGEN) arising out of or relating to any actions of GW under this Agreement including, without limitation, the supply of samples for use in the Pharmacogenomics Program.

11.17 CURAGEN Indemnification of GW. - CURAGEN shall indemnify, defend and hold harmless GW, its Affiliates and their respective directors, officers, employees, and agents and their respective successors, heirs and assigns (the "GW Indemnitees"), against any liability, damage, loss or expense (including reasonable attorneys' fees and expenses of litigation) incurred by or imposed upon the GW Indemnitees, or any of them, in connection with any claims, suits, actions, demands or judgments of third parties, including without limitation personal injury matters (except to the extent such claims, suits, actions, demands or judgments

result from a material breach of this Agreement, or the negligence or willful misconduct on the part of GW) arising out of the performance of the Pharmacogenomics Program by CURAGEN, except to the extent such claims, suits, actions, demands or judgments are based on the use of the samples or information provided to CURAGEN by GW under this Agreement.

11.18 Governing Law. - The Parties agree that this Agreement shall be governed and construed in accordance with the laws of the State of North Carolina.

11.19 Entire Agreement. - The Parties agree that the provisions contained in this Agreement constitute the entire agreement between the Parties with respect to the subject matter and supersede all previous communications, representations and agreements (whether verbal or written) between the Parties with respect to the subject matter hereof, including, without limitation, the Term Sheet of October 6, 1998.

11.20 Captions and Headings. - The Parties agree that the captions and headings appearing in this Agreement have been inserted for reference and as a matter of convenience and in no way define, limit or enlarge the scope or meaning of this Agreement or any provision.

11.21 Amendments. - Any amendment to this Agreement shall only be effective if the amendment is in writing and is signed by all of the Parties to this Agreement.

11.22 Counterparts. - This Agreement may be executed in facsimile counterparts, each of which shall be deemed to be an original and both of which together shall

constitute one and the same Agreement.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized representatives in two (2) originals on the dates indicated by the signators.

CURAGEN CORPORATION	GLAXO WELLCOME, INC.
By: /s/ Gregory T. Went	By: /s/ James Niedel
Name: Gregory T. Went	Name: James Niedel
Title Executive Vice President	Title: Executive Director, Science & Technology
Date: 11/18/98	Date: 11/9/98

EXHIBIT 11

CURAGEN CORPORATION
COMPUTATION OF NET LOSS PER SHARE
ATTRIBUTABLE TO COMMON STOCKHOLDERS

<TABLE>
<CAPTION>

	Year Ended December 31,		
	1996	1997	1998
<S>	<C>	<C>	<C>
Net loss	($589,135)	($7,222,010)	($18,428,485)
Preferred dividends	(17,106)	(68,424)	(508,435)
Net loss attributable to common stockholders	($606,241)	($7,290,434)	($18,936,920)
Basic and diluted net loss per share attributable to common stockholders	$ (0.12)	$ (0.92)	$ (1.55)
Weighted average number of shares used in computing basic and diluted net loss per share attributable to common stockholders	5,097,073	7,888,383	12,201,006

</TABLE>

EXHIBIT 21.1

Subsidiaries of the Registrant

GeneScape, Inc.

EXHIBIT 23.1

INDEPENDENT AUDITORS' CONSENT

We consent to the incorporation by reference in Registration Statement No. 333-56829 of CuraGen Corporation on Form S-8 of our report dated February 12, 1999, appearing in this Annual Report on Form 10-K of CuraGen Corporation for the year ended December 31, 1998.

DELOITTE & TOUCHE LLP
Hartford, Connecticut
March 25, 1999

<TABLE> <S> <C>

<ARTICLE> 5

<S>	<C>	<C>
<PERIOD-TYPE>	YEAR	YEAR
<FISCAL-YEAR-END>	DEC-31-1997	DEC-31-1998
<PERIOD-START>	JAN-01-1997	JAN-01-1998
<PERIOD-END>	DEC-31-1997	DEC-31-1998
<CASH>	17,417,161	43,293,995
<SECURITIES>	0	0
<RECEIVABLES>	588,314	610,641
<ALLOWANCES>	0	0
<INVENTORY>	0	0
<CURRENT-ASSETS>	1,254,614	506,353
<PP&E>	8,656,032	20,100,403
<DEPRECIATION>	1,735,836	4,200,122
<TOTAL-ASSETS>	26,519,029	60,804,501
<CURRENT-LIABILITIES>	4,521,417	11,345,381
<BONDS>	0	0
<PREFERRED-MANDATORY>	0	0
<PREFERRED>	1,459,196	0
<COMMON>	85,801	133,168
<OTHER-SE>	12,137,178	42,342,025
<TOTAL-LIABILITY-AND-EQUITY>	26,519,029	60,804,501
<SALES>	0	0
<TOTAL-REVENUES>	5,896,543	9,257,025
<CGS>	0	0
<TOTAL-COSTS>	9,742,546	19,989,395
<OTHER-EXPENSES>	3,481,251	9,128,705
<LOSS-PROVISION>	0	0
<INTEREST-EXPENSE>	0	0
<INCOME-PRETAX>	(7,222,010)	(18,428,485)
<INCOME-TAX>	0	0
<INCOME-CONTINUING>	(7,222,010)	(18,428,485)
<DISCONTINUED>	0	0
<EXTRAORDINARY>	0	0
<CHANGES>	0	0
<NET-INCOME>	(7,290,434)	(18,936,920)
<EPS-PRIMARY>	(0.92)	(1.55)
<EPS-DILUTED>	(0.92)	(1.55)

</TABLE>