AS FILED WITH THE SECURITIES AND EXCHANGE COMMISSION ON DECEMBER 14, 1998.
REGISTRATION NO. 333-____

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

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

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INHALE THERAPEUTIC SYSTEMS, INC.
(Exact name of registrant as specified in its charter)

| DELAWARE | 94-3134940 |
|---|---|
| (State or other jurisdiction of incorporation or organization) | (I.R.S. Employer Identification Number) |

150 INDUSTRIAL ROAD
SAN CARLOS, CALIFORNIA 94070
(650) 631-3100
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

ROBERT B. CHESS AND AJIT S. GILL
CO-CHIEF EXECUTIVE OFFICERS
INHALE THERAPEUTIC SYSTEMS, INC.
150 INDUSTRIAL ROAD
SAN CARLOS, CALIFORNIA 94070
(650) 631-3100
(Name, address, including zip code, and telephone number, including area code, of agent for service)

COPIES TO:

MARK P. TANOURY, ESQ.
COOLEY GODWARD LLP
3000 SAND HILL ROAD
BUILDING 3, SUITE 230
MENLO PARK, CALIFORNIA 94025
(650) 843-5000

APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC: If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. / / If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. /X/ If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. / / If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. If delivery of the Prospectus is expected to be made pursuant to Rule 434, please check the following box. / /

CALCULATION OF REGISTRATION FEE

| TITLE OF EACH CLASS OF SECURITIES TO BE REGISTERED | AMOUNT TO BE REGISTERED(1) | PROPOSED MAXIMUM OFFERING PRICE PER SHARE(2) | PROPOSED MAXIMUM AGGREGATE OFFERING PRICE(2) | AMOUNT OF REGISTRATION FEE |
|---|---|---|---|---|
| Common Stock | 1,200,000 | $31.69 | $38,028,000 | $10,572 |

(1) Pursuant to Rule 416 of the Securities Act, this Registration Statement also covers such indeterminable additional shares as may become issuable as a result of any future stock splits, stock dividends or similar transaction.

(2) Estimated in accordance with Rule 457(c) solely for the purpose of computing the amount of the registration fee based on the average of the high and low prices of the Company's Common Stock as reported on the Nasdaq National Market on December 8, 1998.

THE REGISTRANT HEREBY AMENDS THIS REGISTRATION STATEMENT ON SUCH DATE OR DATES AS MAY BE NECESSARY TO DELAY ITS EFFECTIVE DATE UNTIL THE REGISTRANT SHALL FILE A FURTHER AMENDMENT THAT SPECIFICALLY STATES THAT THIS

REGISTRATION STATEMENT SHALL THEREAFTER BECOME EFFECTIVE IN ACCORDANCE WITH SECTION 8(A) OF THE SECURITIES ACT OF 1933 OR UNTIL THE REGISTRATION STATEMENT SHALL BECOME EFFECTIVE ON SUCH DATE AS THE COMMISSION, ACTING PURSUANT TO SAID SECTION 8(A), MAY DETERMINE.

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

SUBJECT TO COMPLETION

PROSPECTUS DATED DECEMBER 14, 1998

# INHALE THERAPEUTIC SYSTEMS, INC.

1,200,000 SHARES

$.0001 PAR VALUE

COMMON STOCK

The selling stockholders identified in this prospectus may sell up to 1,200,000 shares of common stock of Inhale Therapeutic Systems, Inc. The selling stockholders, directly or through agents, brokers, dealers or underwriters, may sell the shares of common stock described in this prospectus (1) on terms to be determined at the time of a sale, (2) in transactions on the Nasdaq National Market, (3) in privately negotiated transactions or (4) in a combination of these methods of sale. If the selling stockholders sells shares to or through brokers or dealers, such brokers or dealers may receive compensation in the form of discounts, concessions or commissions from the selling stockholders. We will not receive any proceeds from the sale of shares by the selling stockholders.

We will not be paying any underwriting commissions or discounts in the offering of these shares. We will, however, be paying for the expenses incurred in the offering of the shares. For their shares, the selling stockholders will receive the purchase price of the shares sold less any agents' commissions and underwriters' discounts and other related expenses.

The selling stockholders and any agents, broker, dealers or underwriters that participate in the sale of the shares may be considered "underwriters" as defined in the Securities Act of 1933, and any commission they receive and any profit on the resale of the shares they purchase may be considered underwriting discounts or commissions under the Securities Act. We have agreed to indemnify the selling stockholders and certain other persons against certain liabilities, including liabilities under the Securities Act.

Please see "Where You Can Find More Information" on page 5 for additional information about us on file with the United States Securities and Exchange Commission.

We strongly urge you to read and consider this prospectus carefully and in its entirety, including the matters referred to under "Risk Factors" beginning at page 6.

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

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## THE COMPANY

THE FOLLOWING IS QUALIFIED IN ITS ENTIRETY BY THE MORE DETAILED INFORMATION INCLUDING "RISK FACTORS" APPEARING ELSEWHERE IN THIS PROSPECTUS AND THE FINANCIAL STATEMENTS AND NOTES THERETO CONTAINED IN THE COMPANY'S ANNUAL REPORT (FORM 10-K) FOR THE YEAR ENDED DECEMBER 31, 1997, INCORPORATED BY REFERENCE HEREIN (THE "ANNUAL REPORT"). EXCEPT FOR THE HISTORICAL INFORMATION CONTAINED HEREIN, THE DISCUSSION IN THIS PROSPECTUS CONTAINS FORWARD-LOOKING STATEMENTS THAT INVOLVE RISKS AND UNCERTAINTIES. THE COMPANY'S ACTUAL RESULTS COULD DIFFER MATERIALLY FROM THOSE DISCUSSED HEREIN. FACTORS THAT COULD CAUSE OR CONTRIBUTE TO SUCH DIFFERENCES INCLUDE, BUT ARE NOT LIMITED TO, THOSE DISCUSSED IN "RISK FACTORS" BEGINNING AT PAGE 6 OF THIS PROSPECTUS AND THOSE DISCUSSED IN "MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS" AND "BUSINESS" CONTAINED IN THE ANNUAL REPORT, AS WELL THOSE DISCUSSED ELSEWHERE IN THE PROSPECTUS, THE ANNUAL REPORT, AND ANY OTHER DOCUMENT INCORPORATED HEREIN PRIOR TO THE TERMINATION OF THE OFFERING.

We are developing a pulmonary drug delivery system applicable to a wide range of peptides, proteins and other molecules currently delivered by injection or by other routes including existing inhalation systems. As an alternative to invasive delivery techniques, a pulmonary delivery system potentially could expand the market for pharmaceutical drug therapies by increasing patient acceptance and improving compliance, which in turn could decrease medical complications and the associated costs of disease management. Pulmonary delivery also may enable new therapeutic uses of certain drugs. We are focusing development efforts on applying our pulmonary delivery system primarily to drugs for systemic and local lung diseases that either have proven efficacy and are approved for delivery by injection or are in late stage human clinical trials. In addition, we are applying our delivery technology to selected other applications where our approach may have significant advantages. Several of our projects are in clinical trials, including insulin (currently starting Phase III clinical trials) and numerous other projects are in various stages of research, feasibility, formulation and preclinical development.

Medical science, health care providers and consumers have been searching for alternatives to injection as a means of delivering drugs. To date, oral, transdermal, and nasal routes of delivery have shown that they have low natural bioavailabilty (the amount of drug absorbed from the delivery site into the bloodstream) due to the large size of macromolecules, making these routes commercially unattractive alternatives for the natural delivery of most macromolecule drugs.

We approach pulmonary drug delivery with the objective of maximizing overall system efficiency while addressing commercial requirements for reproducibility, formulations stability, safety and convenience. We are designing our delivery system to integrate

- customized formulations;
- proprietary fine dry powder processing;
- packaging technology; and
- our proprietary inhalation device

for efficient, reproducible lung delivery of macromolecule powders. To achieve this goal, we are combining an understanding of lung biology, aerosol science, chemical engineering, mechanical engineering, and protein formulations in our system development efforts. We intend to take bulk drugs supplied by collaborative pharmaceutical and biotechnology partners, formulate and process these drugs into fine powders and fill and package the powders into individual dosing units (blisters). We have designed the blisters to load into our device, which patients then activate to inhale the aerosolized drugs.

Our strategy is to work with collaborative partners to develop and commercialize drugs for systemic and local lung modification using our pulmonary delivery system. We are engaged in early stage feasibility, research or development collaborations with Pfizer Inc., Baxter Healthcare Corporation (a subsidiary of Baxter International), Centeon (a company of Hoechst AG and Rohne-Poulenc SA, soon to be renamed Aventis Biologicals), Eli Lilly and Company, Immunex Corporation and Genzyme Corporation as well as other major international pharmaceutical and biotechnology companies. We describe the most recent of these collaborations in greater detail below. In addition to our collaborations, we have initiated projects with several drugs (calcitonin, heparin, Interferon-Alpha, Interferon-Beta and follicle stimulating hormone). We anticipate that any product that might be developed would be commercialized through a collaborative partner and believe our partnering strategy will enable us to reduce our cash requirements while developing a large and diversified potential product portfolio.

## RECENT DEVELOPMENTS

During the past 12 months, we advanced our insulin program with Pfizer, entered into an additional collaborative agreement with Lilly, restructured our agreement with Baxter, expanded our management team, and received additional patents covering our pulmonary delivery technology.

## CLINICAL PROGRAMS

On November 10, 1998, we reported that Pfizer announced the beginning of Phase III clinical trials to test the systemic delivery of insulin through the lungs using our pulmonary delivery system. We kicked off Phase III trials with an investigators meeting held from November 7-9, and we will follow it with recruitment, enrollment and dosing of patients. We have projected the trials to include Type 1 and Type 2 diabetics at 117 sites.

On September 9, 1998, we announced preliminary results from a Phase IIb trial showing that individuals with type 2 diabetes can markedly improve their glycemic control without insulin injections by combining our pulmonary insulin with oral diabetes agents. Pfizer collected the new results from 56 of 69 outpatients in an on-going three-month Phase II multi-center clinical trial conducted by Pfizer. Patients who were failing to control their diabetes with oral agents alone achieved control using pulmonary insulin in combination with oral therapy without the need for insulin injections.

On June 16, 1998, we announced the results of three-month clinical trials with 121 outpatients conducted by our collaborator, Pfizer, which demonstrated that the pulmonary delivery of insulin resulted in blood glucose control and dose-to-dose reproducibility comparable to injection for the treatment of diabetes. In these Phase IIb trials, patients also favored inhaling over injecting insulin.

On November 4, 1998, we reported that Pfizer and Hoechst Marion Roussel AG announced that they had entered into worldwide agreements to manufacture insulin, and co-develop and co-promote inhaled insulin. Under the terms of the agreement, Pfizer and Hoechst Marion Roussel will construct a jointly owned manufacturing plant in Frankfurt, Germany. Until its completion, Hoechst Marion Roussel will provide biosynthetic recombinant insulin from its existing plant to us for powder processing. We will continue to have responsibility for manufacturing powders and supplying devices and will receive a royalty on any inhaled insulin products marketed jointly by Pfizer and Hoechst.

On April 1, 1998, we successfully completed an initial Phase II human clinical trial for one drug and a Phase I human clinical trial for a second drug resulting from our collaboration with Baxter. Both trials indicated that our pulmonary delivery system could provide significant advantages compared to current delivery alternatives for these molecules.

COLLABORATIVE PARTNERS

On January 6, 1998, we entered into a collaborative agreement with Lilly to develop pulmonary delivery for an unspecified protein product based on our deep-lung delivery system for macromolecules. This is the second collaborative agreement between us and Lilly. Under the terms of the agreement, we may receive funding of up to $20 million in research, development, and milestone payments. Lilly will receive global commercialization rights for the pulmonary delivery of any products and we will receive royalties on any marketed products. We will manufacture packaged powders for and supply inhalation devices to Lilly.

In April, 1998, we completed a review with Baxter of our two-year old collaboration. The two companies agreed to focus their efforts on the one compound that the parties believe has the largest commercial potential. Two additional compounds remain in the collaboration and we may develop them further in the future. We will receive all rights to work done on a fourth compound from the collaboration, currently in pre-clinical development, and will be free to develop further or partner the compound independently of Baxter. On October 15, 1998, we reached agreement with Baxter to amend our collaborative agreement. The purpose of the amendment was to facilitate signing a new corporate partner to fund further development and commercialization of the undisclosed compound that has been Baxter's focus since April, 1998. Baxter will continue to provide development funding for this compound in preparation for Phase II trials while the two companies are seeking the new partner.

Each of the foregoing collaborative arrangements are terminable by the partner. Therefore, there can be no assurance that we will receive additional payments as described or that any marketable products will result from the collaborations. See "Risk Factors - Dependence Upon Collaborative Partners."

MANAGEMENT TEAM

In September, 1998, we adopted a co-Chief Executive Officer (CEO) structure. The two co-CEOs of Inhale are Ajit Gill, former Chief Operating Officer, and Robert Chess, former Chief Executive Officer and President. The position of President will no longer exist. In addition, to help manage our growth, we created the positions of Vice President of Human Resources and General Counsel. Our new Vice President of Human Resources is Don Campodonico and our General Counsel is Stephen Hurst.

Ajit S. Gill has served as our Chief Financial Officer and Vice President of Technical Operations as well as Chief Operating Officer. Before joining Inhale in 1992, Mr. Gill was Vice President and General Manager of Kodak's Interactive Systems division. Mr. Gill was Chief Financial Officer for TRW-Fujitsu, Director of Business Development for Visicorp, and has served as President for three early-stage high technology companies.

Robert B. Chess has served as Inhale's President since 1991 and CEO since 1992. Mr. Chess was co-founder and president of Penederm, Inc., a dermatology pharmaceutical company focused on improved drug topical delivery, and previously held management positions at Intel Corporation and Metaphor Computer Systems (now part of IBM). Immediately before joining Inhale, he served as a member of President Bush's White House staff.

Prior to joining Inhale, Mr. Campodonico, the new Vice President of Human Resources, served as Vice President of the Octel Messaging Division of Lucent Technologies. He also served as Vice President of Octel University, where he was responsible for product, sales, and management training. Prior to his service at Octel, Mr. Campodonico held a variety of management positions at ROLM Corporation, including Vice President of Manufacturing of ROLM MilSpec Computers.

We have also appointed Stephen Hurst, previous Inhale Vice President of Intellectual Property and Licensing, as General Counsel. Mr. Hurst has been with Inhale since 1994. Prior to joining Inhale, he served as an intellectual property consultant for COR Therapeutics, Inc. Mr. Hurst was the campus Patent and Licensing Coordinator at the University of California, San Francisco prior to his consulting at COR. He also worked as an Associate Counsel at the intellectual property law firm of Townsend & Townsend.

NEW PATENTS

The United States Patent and Trademark Office granted us five new patents in 1998. In July, we announced that the PTO granted two additional patents covering our device technology for reproducibly delivering aerosolized doses of drugs to the deep lung.

In October, we were issued a patent containing 50 claims directed to methods and means for aerosolizing dry powders through use of a high pressure gas stream to draw dry powder from a receptacle such as a blister. In addition, we announced a patent covering methods and means for pulmonary delivery of dry powder alpha-1 antitrypsin for administration to a patient. A third patent announced in October extends our coverage of pulmonary delivery of active fragments of parathyroid hormone (PTH), a macromolecule being developed by pharmaceutical companies to treat osteoporosis.

In April, 1998, we signed an agreement with Initiatech Inc. under which we will license technology, intellectual property, and patents for protecting biologically active compounds in the dry state. We plan to use this technology to expand our current technology base in stabilizing dry powder aerosol formulations for peptides, proteins, and other macromolecules at room temperature.

## WHERE YOU CAN FIND MORE INFORMATION

Our principal executive offices are located at 150 Industrial Road, San Carlos, CA 94070. Our telephone number is (650) 631-3100. We maintain an Internet home page at www.Inhale.com. The contents of our web page are not incorporated herein and are not a part of this prospectus.

We have filed with the SEC a registration statement on Form S-3 to register the common stock offered by this prospectus. However, this prospectus does not contain all of the information contained in the registration statement and the exhibits and schedules to the registration statement. We strongly encourage you to carefully read the registration statement and the exhibits and schedules to the registration statement. We also file annual, quarterly and special reports, proxy statements and other information with the SEC.

You may inspect and copy such material at the public reference facilities maintained by the SEC at Room 1024, 450 Fifth Street, N.W., Washington, D.C. 20549, as well as at the SEC's regional offices at 500 West Madison Street, Suite 1400, Chicago, Illinois 60661 and 7 World Trade Center, Suite 1300, New York, New York 10048. You may also obtain copies of such material from the SEC at prescribed rates by wiring to the Public Reference Section of the SEC, 450 Fifth Street, N.W., Washington, D.C. 20549.

Please call the SEC at 1-800-SEC-0330 for further information on the public reference rooms. Our SEC filings are also available to the public from the SEC's Website at www.sec.gov.

The SEC allows us to "incorporate by reference" the information contained in documents that we file with them, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus. Information in this prospectus supersedes information incorporated by reference which we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below and any future filings we will make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934;

1. Our Annual Report on Form 10-K for the fiscal year ended December 31, 1997, filed on March 23, 1998 and an amendment thereto filed April 30, 1998, including all material incorporated by reference therein;

2. Our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 1998, filed on May 14, 1998, including all material incorporated by reference therein;

3. Our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 1998, filed on August 13, 1998, including all material incorporated by reference therein;

4. Our Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 1998, filed on November 12, 1998, including all material incorporated by reference therein;

5. Our Current Report on Form 8-K, filed on April 7, 1998, including all material incorporated by reference therein; and

6. The description of the common stock contained in our Registration Statement on Form 8-A as filed on May 2, 1994.

You may request a copy of these filings, at no cost to you, by writing or telephoning us at:

Inhale Therapeutic Systems, Inc.
Attention: Investor Relations
150 Industrial Road
San Carlos, CA 94070
Telephone: (650) 631-3100

Our common stock is quoted on the Nasdaq National Market under the symbol "INHL". The last reported sales price of the common stock on the Nasdaq National Market ("Nasdaq") on December 11, 1998 was $30.06 per share. You may inspect reports and other information concerning us at the offices of the National Association of Securities Dealers, Inc., 1735 K Street, N.W., Washington, D.C. 20006.

You should rely only on the information incorporated by reference or provided in this prospectus. We have authorized no one to provide you with different information. You should not assume that the information in this prospectus is accurate as of any date other than the date on the front of the document.

## RISK FACTORS

YOU SHOULD CONSIDER THE FOLLOWING RISK FACTORS BEFORE MAKING ANY INVESTMENT IN INHALE. YOUR UNDERSTANDING OF THESE RISK FACTORS IS IMPORTANT IN EVALUATING INHALE AND OUR BUSINESS. INVESTMENT IN OUR COMMON STOCK INVOLVES CONSIDERABLE RISK TO YOU AND MAY RESULT IN THE LOSS OF ALL OR PART OF YOUR INVESTMENT. THE FOLLOWING AREAS OF RISK ARE DISCUSSED IN MORE DETAIL BELOW:

- Early Stage Company
- Uncertainties Related to Technology and Product Development
- Uncertainties Related to Clinical Trials
- History of Operating Losses; Uncertainty of Future Profitability
- Dependence Upon Collaborative Partners
- Limited Manufacturing Experience; Risk of Scale-Up
- Uncertainty of Market Acceptance
- Future Capital Needs; Uncertainty of Additional Funding
- Dependence Upon Proprietary Technology; Uncertainty of Obtaining Licenses or Developing Technology
- Dependence Upon and Need to Attract Key Personnel
- Government Regulation; Uncertainty of Obtaining Regulatory Approval
- Uncertainty Related to the Health Care Industry and Third-Party Reimbursement
- Highly Competitive Industry; Risk of Technological Obsolescence
- Product Liability; Availability of Insurance
- Hazardous Materials
- Anti-Takeover Provisions
- Potential Volatility of Stock Price

EARLY STAGE COMPANY. We are in an early stage of development. There is a risk that our pulmonary delivery technology will not be technically feasible. Even if our pulmonary delivery technology is technically feasible, it may not be commercially accepted across a range of macromolecules and small molecule drugs. We have tested six of our thirteen pulmonary delivery formulations in human clinical trials. The pulmonary formulations tested in humans are insulin, interleukin-1 receptor, salmon calcitonin, an osteoporosis drug and two small molecules.

Many of the underlying drug compounds contained in our pulmonary formulations have been tested in humans by other companies using alternative delivery routes. Our potential products require extensive research, development and pre-clinical and clinical testing. Our potential products also may involve lengthy regulatory review before they can be sold. We do not know if and cannot assure that any of our potential products will prove to be safe and effective or meet regulatory standards. There is a risk that any of our potential products will not be able to be produced in commercial quantities at acceptable cost or marketed successfully. Our failure to achieve technical feasibility, demonstrate safety, achieve clinical efficacy, obtain regulatory approval or, together with partners, successfully market products will seriously impact the amount of our revenue and our results of operations.

UNCERTAINTIES RELATED TO TECHNOLOGY AND PRODUCT DEVELOPMENT. The success of our pulmonary drug delivery system for any drugs will depend upon our achieving the following:

- sufficient system efficiency;
- formulation stability;
- safety; and
- dosage reproducibility.

System efficiency is the product of the pulmonary bioavailability of a potential product and the percentage of each drug dose lost at various stages of the manufacturing and pulmonary delivery process. Pulmonary bioavailability is the percentage of a drug that is absorbed into the bloodstream when that drug is delivered directly to the lungs. This is the initial screen for whether pulmonary delivery of any systemic drug is feasible. The stages of the manufacturing and pulmonary delivery process are:

- drug formulation;
- dry powder processing;
- packaging; and
- moving the drug from a delivery device into the lungs.

We would not consider a drug as a good candidate for development and commercialization if its dose loss is excessive at any one stage or cumulatively in the manufacturing and delivery process or if its pulmonary bioavailability is too low.

Formulation stability is the physical and chemical stability of the drug over time and under various storage conditions. Formulation stability will vary with each pulmonary formulation and the type and amount of excipients that are used in the formulation.

The safety of our pulmonary formulations will vary with each drug and the excipients used in its formulation.

Reproducible dosing is the ability to deliver a consistent and predictable amount of drug into the bloodstream over time both for a single patient and across patient groups. Reproducible dosing requires the development of:

- an inhalation device that consistently delivers predictable amounts of dry powder formulations to the deep lung;
- accurate unit dose packaging of dry powder formulations; and
- moisture resistant packaging.

There is a risk that we will not develop reproducible dosing of any potential product. The failure to do so means that we would not consider it a good candidate for development and commercialization.

Our integrated approach to systems development relies upon several different but related technologies:

- dry powder formulations;
- dry powder processing technology;
- dry powder packaging technology; and
- pulmonary delivery devices.

At the same time we must:

- establish collaborations with partners;
- perform laboratory and clinical testing of potential products; and
- scale-up our manufacturing processes.

We must accomplish all of these steps without delaying any aspect of technology development. Any delay in one component of product or business development could delay our ability to develop, obtain

approval of or market therapeutic products using our pulmonary delivery technology.

Before we can sell any potential product, we must:

- further refine our device prototype;
- complete scale-up of our powder processing system; and
- complete scale-up of our automated packaging system.

There is a risk that we will not:

- be able to demonstrate pulmonary bioavailability for the drug candidates we have identified or may identify;
- be able to achieve commercial viability of our pulmonary delivery system;
- achieve the total system efficiency needed to be competitive with alternative routes of delivery;
- prove potential products to be safe or provide reproducible dosages of stable formulations sufficient to achieve clinical efficacy;
- gain regulatory approval or market acceptance; or
- advance the numerous aspects of product and business development needed to prevent delays in overall product development.

The failure to demonstrate pulmonary bioavailability, achieve total system efficiency, provide safe, reproducible dosages of stable formulations or advance on a timely basis the numerous aspects of product and business development will seriously impact the amounts of our revenues and our results of operations.

UNCERTAINTIES RELATED TO CLINICAL TRIALS. We have limited experience in conducting clinical trials and intend to rely primarily on our collaborative partners for such trials, including Pfizer and Eli Lilly & Company. We are, however, responsible for managing the clinical trials in our collaboration with Baxter Healthcare Corporation. Before seeking regulatory approvals for the commercial sale of products under development, we must demonstrate through pre-clinical studies and clinical trials that such products are safe and effective for use in the target indications. The results from pre-clinical studies and early clinical trials may not reflect the results that will be obtained in large-scale testing. Accordingly, therefore, we cannot be certain that clinical trials will demonstrate the levels of safety and effectiveness needed to obtain regulatory approvals or will result in marketable products.

We might also conduct clinical trials with patients having advanced stages of disease. During the course of treatment, these patients can die or suffer other adverse medical effects for reasons that may not be related to the drug being tested but that can nevertheless affect clinical trial results. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials, even after good results in earlier trials. Clinical trials for products being developed by us and our partners may be delayed by many factors, including enrolling a sufficient number of patients fitting the trial profile. If we fail to demonstrate safety and efficacy of any of our products in clinical trials, the resulting delays in developing other compounds and conducting pre-clinical testing and clinical trials will impact the amount of our revenue and our results of operations.

HISTORY OF OPERATING LOSSES; UNCERTAINTY OF FUTURE PROFITABILITY. We have never been profitable and, through September 30, 1998, have incurred a cumulative deficit of approximately $49.7 million. We expect to continue to incur substantial and increasing losses over at least the next several years as we expand our research and development efforts, testing activities and manufacturing operations, and as we complete our late stage clinical and early commercial production facility. All of our potential products are in research or in the early stages of development except for our insulin collaboration. We have generated no revenues from approved product sales. Our revenues to date have consisted primarily of payments under short-term research and feasibility agreements and development contracts. To achieve and sustain profitable operations, we must, alone or with others, successfully develop, obtain regulatory approval for, manufacture, introduce, market and sell products using our pulmonary drug delivery system. There is a risk that we will not generate sufficient product or contract research revenue to become profitable or to sustain profitability.

DEPENDENCE UPON COLLABORATIVE PARTNERS. We currently do not have the resources necessary to develop, obtain regulatory approvals, or commercialize any of our potential therapeutic products. Our ability to apply our pulmonary delivery system to a broad range of drugs depends upon our establishing and maintaining collaborative arrangements with other companies, especially for drugs currently approved for sale or in clinical testing that are covered by third-party patents. We have entered into collaborative arrangements with certain partners to fund clinical trials, assist in obtaining regulatory approvals, supply drugs for formulation and market and distribute products.

We have also entered into agreements with partners to test the feasibility of our pulmonary delivery system with certain of their proprietary molecules. There is a risk that we will not be able to enter into additional collaborations or that our feasibility agreements will lead to collaborations. In addition, we may not be able to maintain or succeed with

any of these collaborative arrangements or feasibility agreements, and our failure to enter into or maintain them will seriously impact the amounts of our revenue and our results of operations. Moreover, we cannot work with any patented drug unless the owner of the drug agrees to collaborate with us. The inability of any partner to supply drugs for formulation will seriously impact the amount of our revenue and our results of operations.

Our existing partners may pursue development of other drug delivery systems that may compete with our drug delivery system. They also have the right to terminate their agreements with us at any time without significant penalty to them. We expect future partners to have similar rights. Generally, we plan to formulate and manufacture powders for our partners and to supply the inhalation devices for such powders. Some of our partners, however, may choose to formulate or manufacture their own powders, or to develop or supply their own device. If they choose to do so, then one or more potential sources of revenue for us may be eliminated or reduced. We anticipate that we may be precluded from entering into new arrangements with companies whose products compete with those of our existing partners. In addition, we have limited or no control over the resources that any partner devotes to our potential products, or over their development efforts, including the clinical trials, and the marketing and pricing of products.

The pharmaceutical and biotechnology industries are consolidating. We may not be able to continue or initiate collaborations if our existing or potential partners are acquired or acquire other companies. There is a risk that our partners will not perform their obligations as expected, devote sufficient resources to developing, testing or marketing our potential products or will terminate or change their agreements. Our revenues and our results of operations will be seriously impacted if:

- a partner develops an alternate drug delivery systems;
- a partner develops, rather than us, components of the delivery system;

- we are precluded from entering into competitive arrangements;
- we fail to obtain timely regulatory approvals;
- an agreement is prematurely terminated;
- an agreement is renegotiated; or
- a partner fails to devote sufficient resources to developing and commercializing our potential products.

LIMITED MANUFACTURING EXPERIENCE; RISK OF SCALE-UP. We must scale-up our current powder processing and filling facilities and comply with the good manufacturing practice standards prescribed by the United States Food and Drug Administration and other standards prescribed by other regulatory agencies to achieve drug production levels that are adequate to support late stage human clinical trials and early commercial sales.

We have no experience manufacturing products for large scale clinical testing or commercial purposes. We have only performed powder processing on the small scale needed for testing formulations and for early stage and larger clinical trials. We may encounter manufacturing and control problems as we attempt to scale-up powder processing facilities. We may not be able to achieve such scale-up in a timely manner or at a commercially reasonable cost, if at all. Our failure to solve any of these problems could delay or prevent late stage clinical testing and commercialization of our products and could seriously impact the amount of our revenues and our results of operations.

To date, we have relied on one particular method of powder processing. There is a risk that this technology will not work with all drugs or that the drug losses will prohibit the commercial viability of certain drugs. Additionally, there is a risk that any alternative powder processing methods we may pursue will not be commercially practical for aerosol drugs or that we will not have or be able to acquire the rights to use such alternative methods.

Our fine particle powders and small quantity packaging require special handling. We have designed and qualified small scale automated filling equipment for small quantity packaging of fine powders. We face significant technical challenges in scaling-up an automated filling system that can handle the small dose and particle sizes of our powders in commercial quantities. There is a risk that we will not be able to scale-up our automated filling equipment in a timely manner or at commercially reasonable costs. Any failure or delay in such scale-up would delay product development or bar commercialization of our products and will impact the level of our revenues and results of operations.

We face many technical challenges in further developing our inhalation device to work with a broad range of drugs, to produce such a device in sufficient quantities and to adapt the device to different powder formulations. There is a risk that we will not successfully achieve any of these things. Our failure to overcome any of these challenges will impact our revenues and results of operations.

For late stage clinical trials and initial commercial production, we intend to use one or more contract manufacturers to produce our device. There is a risk that we will not be able to enter into or maintain arrangements with any potential contract manufacturers, and that the failure to do so will impact our revenues and results of operations.

UNCERTAINTY OF MARKET ACCEPTANCE. The commercial success of our potential products depends upon market acceptance by health care providers, third-party payors, like health insurance companies and Medicare, and patients. Our products under development use a new method of drug delivery and there is a risk that our potential products will not be accepted by the market. Market acceptance will depend on many factors, including

- the safety and efficacy results of our clinical trials;
- favorable regulatory approval and product labeling;
- the frequency of product use;
- the availability of third-party reimbursement;
- the availability of alternative technologies; and
- the price of our products relative to alternative technologies.

There is a risk that health care providers, patients or third-party payors will not accept our pulmonary drug delivery system. If the market does not accept our potential products, our revenues and results of operations will be seriously impacted if our potential products are not accepted by the market.

FUTURE CAPITAL NEEDS; UNCERTAINTY OF ADDITIONAL FUNDING. Our operations to date have consumed substantial and increasing amounts of cash. We expect that the negative cash flow from operations will continue and accelerate. The development of our technology and potential products will require a commitment of substantial funds so that we can:

- conduct costly and time-consuming research, preclinical and clinical testing;
- establish an early commercial production facility; and
- bring any such potential products to market.

Our future capital requirements will depend on many factors, including:

- continued progress in the research and development of our technology and drug delivery system;
- our ability to establish and maintain collaborative arrangements with others and the terms of those arrangements;
- payments received from partners under research and development agreements;
- progress with preclinical and clinical trials;
- the time and costs involved in obtaining regulatory approvals;
- the cost of development and the rate of scale-up of our powder processing and packaging technologies;
- the timing and costs of our late stage clinical and early commercial production facility;
- the cost involved in preparing, filing, prosecuting, maintaining and enforcing patent claims; and
- the need to acquire licenses to new technology and the status of competitive products.

We expect that our existing capital resources, revenues from collaborations and the interest thereon, will enable us to maintain our current and planned operations at least through 2000. Thereafter, we will need to raise substantial additional capital to fund our operations. We intend to seek such additional funding through new collaborative arrangements, by extending existing arrangements, or through public or private equity or debt financings. There is a risk that additional financing will not be available on acceptable terms or at all. If additional funds are raised by issuing equity securities, further dilution to stockholders will result. If adequate funds are not available, we may be required to delay, reduce the scope of, or eliminate one or more of our research or development programs or obtain funds through relinquishing rights to some of our technologies, product candidates or products that we would otherwise develop or commercialize.

DEPENDENCE UPON PROPRIETARY TECHNOLOGY; UNCERTAINTY OF OBTAINING

LICENSES OR DEVELOPING TECHNOLOGY. We must protect our proprietary technology from infringement, misappropriation, duplication and discovery to be successful. We rely principally on a combination of patent, trademark and copyright law, trade secrets and contract law to protect our technology worldwide. We have filed patent applications covering certain aspects of our device, powder processing technology, and powder formulations and pulmonary route of delivery for certain molecules, and plan to file additional patent applications. Currently we have 27 issued U.S. and foreign patents that cover certain aspects of our technology and we have a number of patent applications pending. There is a risk that any of the patents applied for will not issue, or that any patents that issue or have issued will not be valid and enforceable. Enforcing our patent rights would be time consuming and costly.

Our patent positions and the patent positions of pharmaceutical, biotechnology and drug delivery companies are uncertain and involve complex legal and factual issues. Additionally, the coverage claimed in a patent application can be significantly reduced before the patent is issued. Therefore, we do not know whether any of our patent applications will result in the issuance of patents or, if any patents issue, whether they will provide significant proprietary protection or will be circumvented or invalidated. Since patent applications in the United States are maintained in secrecy until patents issue, and since publication of discoveries in the scientific or patent literature often lag behind actual discoveries, we cannot be certain that we were the first inventor of inventions covered by our pending patent applications or issued patents or that we were the first to file patent applications for such inventions. We may have to participate in interference proceedings declared by the Patent and Trademark Office to determine ownership of a given invention, which could be costly to us, even if the eventual outcome is favorable to us. An adverse outcome could subject us to significant liabilities to third parties, require disputed rights to be licensed from or to third-parties or require us to cease using the technology in dispute.

We are aware of numerous pending and issued U.S. and foreign patent rights and other proprietary rights owned by third-parties that relate to aerosol devices and delivery, pharmaceutical formulations, dry powder processing technology and the pulmonary route of delivery for certain macromolecules. There is a risk that any of our patents or patent applications will not be considered relevant to our technology by authorities in the various jurisdictions where such rights exist, or that these rights will be asserted against us by such third-parties.

We are aware of an alternate dry powder processing technology that we are not using for our current products under development but may desire to use for certain products in the future. The ownership of this powder processing technology is unclear. We are aware that multiple parties, including Inhale, claim patent, trade secret and other rights in the technology. If we determine that this alternate powder processing technology is relevant to the development of future products and further determine that a license to this alternate powder processing technology is needed, we cannot be certain that we can obtain a license from the relevant party or parties on commercially reasonable terms, if at all.

There is a risk that we will not obtain any license to any technology that we determine we need, on reasonable terms, or that we will not develop or otherwise obtain alternate technology. Our failure to obtain licenses, if needed, will impact the level of our revenues and results of operations.

In June 1997, we acquired the intellectual property portfolio of the BioPreservation Division of Pafra Limited of Basildon, England. This portfolio includes issued U.S. and foreign patents and pending applications relating to the stabilization of macromolecule drugs in dry formulations. A granted European patent included in this portfolio is currently the subject of an opposition proceeding before the European Patent Office. The opposition proceeding allows third-parties to present evidence to the European Patent Office in a attempt to have the allowed patent declared invalid. Opposition to this patent was initiated prior to the acquisition and we are continuing the defense of this patent. There is a risk that we will not be successful in the defense of this opposition proceeding. In addition, there is a risk that any of the Pafra patent applications will not issue, or that any of the Pafra patents will not be valid and enforceable. The loss of the opposition proceeding or the inability to obtain or defend the Pafra patents could impact the level of our revenues and results of operations.

In the past, third-parties have asserted and in the future may assert that we are employing technology that is based on issued patents, trade secrets or know-how of others. In addition, future patents may not issue to third-parties that our technology may infringe. We could incur substantial costs in defending ourselves and our partners against any such claims. Parties making such claims may be able to obtain injunctive or other equitable relief that could effectively block our ability to further develop or commercialize some or all of our products in the United States and abroad, and could result in the award of substantial damages. A claim of infringement may require our partners and us to obtain one or more licenses from third-parties. There is a risk that we or our partners would not be able to obtain such licenses at a reasonable cost, if at all. Defense of any lawsuit or failure to obtain any such license could impact the level of our

revenues and results of operations.

Our access or our partners' access to the drugs to be formulated will affect our ability to develop and commercialize our technology. Many drugs, including powder formulations of certain drugs that are presently under development by us, are subject to issued and pending United States and foreign patents that may be owned by our competitors. We know that there are issued patents and pending patent applications relating to the pulmonary delivery of macromolecule drugs, including several for which we are developing pulmonary delivery formulations. This situation is highly complex, and the ability of any one company, including Inhale, to commercialize a particular biopharmaceutical drug is, therefore, highly unpredictable.

We intend generally to rely on the ability of our partners to provide access to the drugs that are to be formulated for pulmonary delivery. There is a risk that our partners will not be able to provide access to such drug candidates. Even if such access is provided, there is a risk that our partners or we will be accused of, or determined to be, infringing a third-party's rights and will be prohibited from working with the drug or be found liable for damages that may not be subject to indemnification. Any such restriction on access or liability for damages would impact the level of our revenues and results of operations.

We also rely on trade secrets and contract law to protect certain of our proprietary technology. There is a risk that any such contract will be breached, and that if breached, that we will not have adequate remedies. There is a risk that any of our trade secrets will become known or independently discovered by third-parties, thereby eliminating its value as a trade secret.

In 1995 the Patent and Trademark Office adopted changes to the United States patent law that changed the term of issued patents, subject to certain transition periods, to 20 years from the date of filing rather than 17 years from date of issuance. Beginning in June 1995, the patent term became 20 years from the earliest effective filing date of the underlying patent application. Such change may reduce the

effective term of protection for patents that are pending for more than three years in the Patent and Trademark Office. In addition, as of January 1996, all inventors who work outside of the United States are able to establish a date of invention on the same basis as those working in the United States. Such change could adversely affect our ability to prevail in a priority of invention dispute with a third party located or doing work outside of the United States. While we cannot predict the effect that such changes will have on our business, such changes could affect our ability to protect our ownership of our technology and sustain the commercial viability of our products. The possibility of extensive delays in such process could effectively reduce the term during which a marketed product is protected by patents.

DEPENDENCE UPON AND NEED TO ATTRACT KEY PERSONNEL. We depend on the principal members of our scientific and management staff. We do not have employment contracts with our key employees, nor do we have key man insurance policies on them. We also rely on consultants and advisors to assist us in formulating research and development strategy. To pursue our product development and commercialization plans, we will need to hire additional qualified scientific personnel to perform research and development, as well as personnel with expertise in clinical testing, government regulation and manufacturing. We also expect to expand product development and manufacturing which will require additional management personnel and the development of additional expertise by existing management personnel. Retaining and attracting qualified personnel, consultants and advisors will be critical to our success. We face competition for qualified individuals from numerous pharmaceutical, biotechnology and drug delivery companies, universities and other research institutions. There is a risk that we will not be able to retain our current key employees or attract and retain qualified additional personnel and management when needed. Our failure to do so would impact our ability to develop and sell our products.

GOVERNMENT REGULATION; UNCERTAINTY OF OBTAINING REGULATORY APPROVAL. Numerous governmental authorities in the United States and other countries regulate the production and marketing of our products and our ongoing research and development activities. Prior to marketing a new dosage form of any drug, including one developed for use with our pulmonary drug delivery system, the product must undergo rigorous preclinical and clinical testing and an extensive review process mandated by the FDA and equivalent foreign authorities. This is true whether or not such drug was already approved for marketing in another dosage form. These processes generally take a number of years and require the expenditure of substantial resources. We have not submitted any products to the FDA for marketing approval. We have no experience obtaining such regulatory approval, nor do we have the expertise or other resources to do so. We intend to rely on our partners to fund clinical testing and to obtain product approvals.

The time required for completing such testing and obtaining such approvals is uncertain. We need to further refine our device prototype, further scale-up the powder processing system and automated powder filling and packaging system before our partners or we initiate later stage clinical trials or market our products. Any delay in any of these components of product development may delay testing. In addition, we may encounter delays or rejections based upon changes in the United States Food and Drug Administration policy, including policy relating to good manufacturing practice compliance, during the period of product development. We may encounter similar delays in other countries.

Even if regulatory approval of a product is granted, the approval may limit the indicated uses for which the product may be marketed. In addition, the marketed product, its manufacturer, and its manufacturing facilities are subject to continual review and periodic inspections. Later discovery of previously unknown problems with a product, manufacturer or facility may result in restrictions on such product or manufacturer, including withdrawal of the product from the market. There is a risk that we will not obtain regulatory approval for any products on a timely basis, or at all. The failure to obtain timely regulatory approval of our products, any product marketing limitations or a product withdrawal would impact the level of our revenue and results of operations.

UNCERTAINTY RELATED TO THE HEALTH CARE INDUSTRY AND THIRD-PARTY REIMBURSEMENT. Political, economic and regulatory influences are subjecting the health care industry in the United States to fundamental change. Recent initiatives to reduce the federal deficit and to reform health care delivery are increasing cost-containment efforts. We anticipate that Congress, state legislatures and the private sector will continue to review and assess

- alternative benefits;
- controls on health care spending through limitations on the growth of private health insurance premiums and Medicare and Medicaid spending;
- the creation of large insurance purchasing groups;
- price controls on pharmaceuticals; and
- other fundamental changes to the health care delivery system.

Any such proposed or actual changes could cause us or our collaborative partners to limit or eliminate spending on development projects. We expect legislative debate to continue in the future. We also expect that market forces will demand reduced healthcare costs. We cannot predict what effect the adoption of any federal or state health care reform measures or future

private sector reforms may have on our business.

In both domestic and foreign markets, sales of our products under development will depend in part upon the availability of reimbursement from third-party payors, such as government health administration authorities, managed care providers, private health insurers and other organizations. In addition, other third-party payors are increasingly challenging the price and cost effectiveness of medical products and services. Significant uncertainty exists as to the reimbursement status of newly approved health care products. There is a risk that our proposed products will not be considered cost effective and that adequate third-party reimbursement will not be available to allow us to maintain competitive price levels. Legislation and regulations affecting the pricing of pharmaceuticals may change before our proposed products are approved for marketing. Adoption of such legislation could further limit reimbursement for medical products. If the governments and third party payors do not provide adequate coverage and reimbursements, the market acceptance of these products would be limited, which would impact the level of our revenues and results of operations.

HIGHLY COMPETITIVE INDUSTRY; RISK OF TECHNOLOGICAL OBSOLESCENCE. The biotechnology and pharmaceutical industries are highly competitive. We expect rapidly evolving and significant developments to continue at a rapid pace. Our success depends upon maintaining a competitive position in the development of products and technologies for pulmonary delivery of pharmaceutical drugs. Our business would be adversely impacted if a competing company were to develop, or acquire rights to:

- a better dry powder pulmonary delivery device or fine powder processing technology;
- a better system for efficiently and reproducibly delivering drugs to the deep lung;

- a non-invasive drug delivery system which is more attractive for the delivery of drugs than pulmonary delivery; or
- an invasive delivery system which overcomes some of the drawbacks of current invasive systems for chronic or subchronic indications (such as a sustained release system).

We compete with pharmaceutical, biotechnology and drug delivery companies, hospitals, research organizations, individual scientists and nonprofit organizations engaged in developing alternative drug delivery systems or new drug research and testing. We also compete with entities producing and developing injectable drugs. We are aware of a number of companies developing new products and non-invasive alternatives to injectable drug delivery, including oral delivery systems, intranasal delivery systems, transdermal systems and colonic absorption systems. Several of these companies may have developed or be developing dry powder devices that could be used for pulmonary delivery.

We are also aware of other companies engaged in developing and commercializing pulmonary drug delivery systems and enhanced injectable drug delivery systems. Many of these companies have greater research and development capabilities, experience, manufacturing, marketing, financial and managerial resources than we do and represent significant competition for us. Acquisitions of competing drug delivery companies by large pharmaceutical companies could enhance our competitors' financial, marketing and other resources. Accordingly, our competitors may succeed in developing competing technologies, obtaining United States Food and Drug Administration approval for products or gain market acceptance before us. We cannot assure that developments by others will not make our products or technologies uncompetitive or obsolete.

PRODUCT LIABILITY; AVAILABILITY OF INSURANCE. The design, development and manufacture of our products involve an inherent risk of product liability claims and associated adverse publicity. Although we currently maintain general liability insurance, there is a risk that the coverage limits of our insurance policies will not be adequate. We obtained clinical trial product liability insurance of $3.0 million per event for certain clinical trials and intend to obtain insurance for future clinical trials of insulin and other products under development. There is a risk, however, that we will not be able to obtain or maintain insurance for any future clinical trials. Such insurance is expensive, difficult to obtain and may not be available in the future on acceptable terms, or at all. A successful claim brought against us in excess of our insurance coverage would impact the level of our revenue and results of operations.

HAZARDOUS MATERIALS. Our research and development includes the controlled use of hazardous materials, chemicals and various radioactive compounds. Although we believe that our safety procedures for handling and disposing of such materials comply with the standards prescribed by state and federal regulations, the risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of such an accident, we could be held liable for any damages that result and any such liability could exceed the our resources. We may incur substantial costs to comply with environmental regulations.

ANTI-TAKEOVER PROVISIONS. Certain provisions of our Certificate of Incorporation and the Delaware General Corporation Law could discourage a third party from attempting to acquire, or make it more difficult for a third party to acquire, control of Inhale without approval of our Board of Directors. Such provisions could also limit the price that certain investors might be willing to pay in the future for shares of Common Stock. Certain of the provisions allow the Board of Directors to authorize the issuance of Preferred Stock with rights superior to those of the Common Stock.

POTENTIAL VOLATILITY OF STOCK PRICE. The market prices for securities of early stage biotechnology companies have historically been highly volatile and the market from time to time has experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies. A variety of factors may have a significant effect on the market price of the Common Stock, including:

- fluctuations in our operating results;
- announcements of technological innovations or new therapeutic products;
- announcement or termination of collaborative relationships by Inhale or our competitors;
- governmental regulation;
- clinical trial results;
- developments in patent or other proprietary rights;
- public concern as to the safety of drug formulations developed by Inhale or others; and
- general market conditions.

Our securities are subject to a high degree of risk and volatility. In the past, following periods of volatility in the market price of a company's securities, class action securities litigation have often been instituted against such a company. Any such litigation instigated against us could result in substantial costs and a diversion of management's attention and resources, which could have a serious impact on our revenues and results of operations.

## USE OF PROCEEDS

We will not receive any proceeds from the sale of Common Stock by the selling stockholders in the offering.

## DIVIDEND POLICY

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

## SELLING STOCKHOLDERS

The selling stockholders acquired the shares of common stock covered by this Prospectus from the Company pursuant to a stock purchase agreement, dated December 8, 1998, between Inhale Therapeutic Systems, Inc. and Capital Research and Management Company for an aggregate purchase price of $37,200,000.00 ($31.00 per share). The offer and sale by us of the common stock to the selling stockholders pursuant to the stock purchase agreement was made pursuant to an exemption from the registration requirements of the Securities Act provided by Section 4(2) thereof. The stock purchase agreement contains representations and warranties as to the selling stockholders' status as "accredited investors" as such term is defined in Rule 501 promulgated under the Securities Act.

Pursuant to the stock purchase agreement, the selling stockholders have represented that they acquired the shares for investment and with no present intention of distributing the shares. We agreed, in the stock purchase agreement to prepare and file a registration statement as soon as practicable and to bear all expenses other than fees and expenses of counsel for the selling stockholders and underwriting discounts and commissions and brokerage commissions and fees. In addition, and in recognition of the fact that the selling stockholders, even though purchasing the shares without a view to distribution, may wish to be legally permitted to sell the shares when they deem appropriate, we filed with the Commission a Registration Statement on Form S-3, of which this Prospectus forms a part, with respect to, among other things, the resale of the shares from time to time at prevailing prices in the over-the-counter market or in privately-negotiated transactions and have agreed to prepare and file such amendments and supplements to the Registration Statement as may be necessary to keep the Registration Statement effective until such shares are no longer, by reason of Rule 144(k) under the Securities Act or any other rule of similar effect, required to be registered for the sale thereof by the selling stockholders.

The following table sets forth the name of the selling stockholders, the number of shares of common stock owned beneficially by the selling stockholders as of December 10, 1998 and the number of shares that may be offered pursuant to this Prospectus. This information is based upon information provided to us by the selling stockholders. There are currently no agreements, arrangements or understandings with respect to the sale of any of the shares. The shares are being registered to permit public secondary trading of the shares, and the selling stockholders may offer the shares for resale from time to time.

| NAME | SHARES BENEFICIALLY OWNED PRIOR TO THE OFFERING | | MAXIMUM NUMBER OF SHARES BEING OFFERED | SHARES BENEFICIALLY OWNED AFTER THE OFFERING | |
|---|---|---|---|---|---|
| | NUMBER | PERCENT(1) | | NUMBER | PERCENT(1) |
| Capital Research and Management Company on behalf of SMALLCAP World Fund, Inc. | 1,000,000 | 5.91% | 1,000,000 | 0 | 0 |
| Capital Research and Management Company on behalf of American Variable Insurance Series-Growth Fund | 200,000 | 1.18% | 200,000 | 0 | 0 |
| TOTAL | 1,200,000 | 7.09% | 1,200,000 | 0 | 0 |

(1) Applicable percentage of ownership is based on 16,914,620 shares of common stock outstanding on December 10, 1998, and includes the sale and issuance of 1,200,000 shares of common stock to the selling stockholders pursuant to the stock purchase agreement.

## PLAN OF DISTRIBUTION

The shares offered hereunder may be sold from time to time by the selling stockholders, or by pledgees, donees, transferees or other successors in interest. Such sales may be made on the Nasdaq National Market or in the over-the-counter market or otherwise, at prices and on terms then prevailing or related to the then-current market price, or in negotiated transactions. The shares may be sold to or through one or more broker-dealers, acting as agent or principal, in underwritten offerings, block trades, agency placements, exchange distributions, brokerage transactions or otherwise, or in any combination of transactions.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the shares may not simultaneously engage in market making activities with respect to our common stock for a period of two business days prior to the commencement of such distribution. In addition and without limiting the foregoing, the selling stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including, without limitation, Rules 10b-6 and 10b-7, which provisions may limit the timing of purchases and sales of shares of common stock by the selling stockholders.

At the time a particular offer of shares is made, to the extent required, a supplemental prospectus will be distributed that will set forth the number of shares being offered and the terms of the offering including the name or names of any underwriters, dealers or agents, the purchase price paid by any underwriter for the shares purchased from the selling stockholders and any discounts, concessions or commissions allowed or reallowed or paid to dealers.

In connection with any transaction involving the shares, broker-dealers or others may receive from the selling stockholders, and/or the purchasers of the shares for whom such broker-dealers act as agents or to whom they may sell as principals or both, compensation in the form of discounts, concessions or commissions in amounts to be negotiated at the time (which compensation as to a particular broker-dealer might be in excess of customary commissions). Broker-dealers and any other persons participating in a distribution of the shares may be deemed to be "underwriters" within the meaning of the Act in connection with such distribution, and any such discounts, concessions or commissions may be deemed to be underwriting discounts or commissions under the Act.

Any or all of the sales or other transactions involving the shares described above, whether effected by the selling stockholders, any broker-dealer or others, may be made pursuant to this Prospectus. In addition, any shares that qualify for sale pursuant to Rule 144 under the Act may be sold under Rule 144 rather than pursuant to this Prospectus.

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

All costs associated with this offering, other than fees and expenses of counsel for the selling stockholders and underwriting discounts and commissions and brokerage commissions and fees, will be paid by us. We have agreed to indemnify the selling stockholders against certain liabilities in connection with any offering of the shares pursuant to this Prospectus, including liabilities arising under the Act.

## LEGAL MATTERS

The validity of the Common Stock offered hereby will be passed upon for the Company by Cooley Godward LLP, Menlo Park, California, ("Cooley Godward").

## EXPERTS

Ernst & Young LLP, independent auditors, have audited our financial statements included in our Annual Report on Form 10-K for the year ended December 31, 1997, as set forth in their report, which is incorporated in this prospectus by reference. Our financial statements are incorporated by reference in reliance on their report, given on their authority as experts in accounting and auditing.

WE HAVE AUTHORIZED NO ONE TO GIVE ANY INFORMATION OR TO MAKE ANY REPRESENTATIONS THAT ARE NOT CONTAINED IN THIS PROSPECTUS. YOU SHOULD RELY ONLY ON THE INFORMATION INCORPORATED BY REFERENCE OR PROVIDED IN THIS PROSPECTUS. YOU MUST NOT RELY ON ANY UNAUTHORIZED INFORMATION.

THIS PROSPECTUS DOES NOT OFFER TO SELL OR BUY ANY SHARES IN ANY JURISDICTION WHERE IT IS UNLAWFUL. YOU SHOULD NOT ASSUME THAT THE INFORMATION IN THIS PROSPECTUS IS ACCURATE AS OF ANY DATE OTHER THAN THE DATE ON THE FRONT OF THE DOCUMENT.

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1,200,000 SHARES

COMMON STOCK

INHALE THERAPEUTIC
SYSTEMS, INC. LOGO

PROSPECTUS

DECEMBER 14, 1998

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

ITEM 14. OTHER EXPENSES OF ISSUANCE AND DISTRIBUTION

The following table sets forth all expenses payable by Inhale Therapeutic Systems, Inc., hereinafter referred to as the "Registrant" or the "Company" in connection with the sale of the Shares being registered. All the amounts shown are estimates except for the registration fee. None of these expenses will be paid by the selling stockholders.

| | |
|---|---|
| Registration fee | $10,572 |
| Printing and engraving expenses | $ 3,000 |
| Legal fees and expenses | $30,000 |
| Accounting fees and expenses | $10,000 |
| Miscellaneous | $ 2,000 |
| Total | $55,572 |

ITEM 15. INDEMNIFICATION OF OFFICERS AND DIRECTORS.

Under Section 145 of the Delaware General Corporation Law, the Registrant has broad powers to indemnify its directors and officers against liabilities they may incur in such capacities, including liabilities under the Securities Act of 1933, as amended (the "Securities Act").

The Registrant's Certificate of Incorporation provides for the elimination of liability for monetary damages for breach of the directors' fiduciary duty of care to the Registrant and its stockholders. These provisions do not eliminate the directors' duty of care and, in appropriate circumstances, equitable remedies such an injunctive or other forms of non-monetary relief will remain available under Delaware law. In addition, each director will continue to be subject to liability for breach of the director's duty of loyalty to the Registrant, for acts or omissions not in good faith or involving intentional misconduct, for knowing violations of law, for any transaction from which the director derived an improper personal benefit, and for payment of dividends or approval of stock repurchases or redemptions that are unlawful under Delaware law. The provision does not affect a director's responsibilities under any other laws, such as the federal securities laws or state or federal environmental laws.

ITEM 16. EXHIBITS

| EXHIBIT NUMBER | DESCRIPTION OF DOCUMENT |
|---|---|
| 4.1 | Stock Purchase Agreement between the Registrant and Capital Research and Management Company, dated December 8, 1998. |
| 5.1 | Opinion of Cooley Godward LLP. |
| 23.1 | Consent of Ernst and Young LLP, Independent Auditors. |
| 23.2 | Consent of Cooley Godward LLP. Reference is made to Exhibit 5.1. |
| 24.1 | Power of Attorney (included on signature pages). |

ITEM 17. UNDERTAKINGS.

The undersigned registrant hereby undertakes:

(1) To file, during any period during which offers or sales are being made, a post-effective amendment to this registration statement;

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

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

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement.

PROVIDED, HOWEVER, that paragraphs (a)(1)(i) and (a)(1)(ii) do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

(2) That, for purposes of determining liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities to be offered therein, and the offering of such securities at that time shall be deemed to be an initial BONA FIDE offering thereof.

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

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial BONA FIDE offering thereof.

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

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement Form S-3 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of San Carlos, County of San Mateo, State of California, on the 11th day of December, 1998.

INHALE THERAPEUTIC SYSTEMS

By: /s/ Robert B. Chess
---
Robert B. Chess
Co-Chief Executive Officer and Director

By: /s/ Ajit S. Gill
---
Ajit S. Gill
Co-Chief Executive Officer and Director

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Robert B. Chess and Ajit S. Gill his true and lawful attorneys-in-fact and agents, each acting alone, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any or all amendments (including post-effective amendments) to the Registration Statement on Form S-3, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as full to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, each acting alone, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

| SIGNATURE | TITLE | DATE |
|---|---|---|
| /s/ Robert B. Chess<br>- ----------<br>Robert B. Chess | Co-Chief Executive Officer and Director (Co-Principal Executive Officer) | December 11, 1998 |
| /s/ Ajit S. Gill<br>- ----------<br>Ajit S. Gill | Co-Chief Executive Officer and Director (Co-Principal Executive Officer) | December 11, 1998 |
| /s/ Christian O. Henry<br>- ----------<br>Christian O. Henry | Controller (Principal Financial and Accounting Officer) | December 11, 1998 |
| /s/ Terry L. Ondendyk<br>- ----------<br>Terry L. Ondendyk | Chairman of the Board | December 11, 1998 |
| /s/ Mark J. Gabrielson<br>- ----------<br>Mark J. Gabrielson | Director | December 11, 1998 |
| /s/ James B. Galvin<br>- ----------<br>James B. Galvin | Director | December 11, 1998 |
| /s/ John S. Patton<br>- ----------<br>John S. Patton | Vice President and Director | December 11, 1998 |
| /s/ Melvin Perelman<br>- ----------<br>Melvin Perelman | Director | December 11, 1998 |

INDEX TO EXHIBITS

| EXHIBIT NUMBER | DESCRIPTION OF DOCUMENT |
|---|---|
| 4.1 | Stock Purchase Agreement between the Registrant and Capital Research and Management Company, dated December 8, 1998. |
| 5.1 | Opinion of Cooley Godward LLP. |
| 23.1 | Consent of Ernst and Young LLP, Independent Auditors. |
| 23.2 | Consent of Cooley Godward LLP. Reference is made to Exhibit 5.1. |
| 24.1 | Power of Attorney (included on signature pages). |

# STOCK PURCHASE AGREEMENT

BETWEEN

INHALE THERAPEUTIC SYSTEMS, INC.

AND

CAPITAL RESEARCH AND MANAGEMENT COMPANY

DATED DECEMBER 8, 1998

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STOCK PURCHASE AGREEMENT

THIS AGREEMENT is made as of 8th December 1998, by and between INHALE THERAPEUTIC SYSTEMS, INC., a Delaware corporation with its principal office at 150 Industrial Road, San Carlos, California 94070 (the "Company"), and CAPITAL RESEARCH AND MANAGEMENT COMPANY, a Delaware corporation with its principal office at 333 S. Hope Street, 55th Floor, Los Angeles, California 90071 (the "Purchaser"), on behalf of SMALLCAP World Fund, Inc. and American Variable Insurance Series-Growth Fund.

IN CONSIDERATION of the mutual covenants and agreements contained herein, the Company and the Purchaser agree as follows:

1. PURCHASE OF COMMON STOCK. Subject to the terms and conditions of this Agreement, and in reliance on the representations and warranties contained herein, at the Closing (as hereinafter defined) the Company agrees to sell to Purchaser and Purchaser agrees to purchase from the Company, one million two hundred thousand (1,200,000) shares of the Company's Common Stock (the "Shares"). The purchase price per share shall be $31.00.

2. CLOSING DATE; DELIVERY.

2.1 CLOSING; CLOSING DATE. Subject to the terms of Section 5, the closing of the sale and purchase of the Shares under Section 1 of this Agreement (the "Closing") shall be held at 2:00 p.m. (PDT) on December 9, 1998 the "Closing Date") at the offices of the Company, or at such other time and place as the Company and Purchaser may agree.

2.2 DELIVERY. At the Closing, subject to the terms and conditions hereof, the Company will deliver to Purchaser a stock certificate, in the names designated by Purchaser, representing the shares of Common Stock deliverable at such Closing, dated as of Closing, against payment of the purchase price therefor by wire transfer, unless other means of payment shall have been agreed upon by Purchaser and the Company.

3. REPRESENTATIONS AND WARRANTIES OF THE COMPANY. Subject to and except as disclosed by the Company in the Schedule of Exceptions attached hereto as Exhibit A, the Company hereby represents and warrants and covenants to Purchaser as follows:

3.1 AUTHORIZATION. All corporate action on the part of the Company, its officers, directors and stockholders necessary for the authorization, execution and delivery of this Agreement has been taken. The Company has the requisite corporate power to enter into this Agreement and carry out and perform its obligations under the terms of this Agreement. At the Closing, the Company will have the requisite corporate power to sell the shares of Common Stock to be sold at such Closing. This Agreement has been duly authorized, executed and delivered by the Company and, upon due execution and delivery by Purchaser, this Agreement will be a valid and binding obligation of the Company, except as enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally or by equitable principles.

3.2 NO CONFLICT WITH OTHER INSTRUMENTS. The execution, delivery and performance of this Agreement will not result in any violation of, be in conflict with, or constitute a default under, with or without the passage of time or the giving of notice: (a) any provision of the Company's Certificate of Incorporation or Bylaws as either shall be in effect; (b) any provision of any judgment, decree or order to which the Company is a party or by which it is bound; (c) any material contract, obligation or commitment to which the Company is a party or

by which it is bound; or (d) any statute, rule or governmental regulation applicable to the Company.

3.3 CERTIFICATE OF INCORPORATION; BY-LAWS. Attached hereto as Exhibits B and C, respectively, are true, correct and complete copies of the Certificate of Incorporation and Bylaws of the Company, as in effect on the date hereof.

3.4 ORGANIZATION, GOOD STANDING AND QUALIFICATION. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has all requisite corporate power and authority to carry on its business as now conducted and as proposed to be conducted. The Company is duly qualified to transact business and is in good standing in each jurisdiction in which the failure so to qualify would have a material adverse effect on its business or properties.

3.5 DISCLOSURE DOCUMENTS. The Company's Form 10-K filed with the Securities and Exchange Commission on March 23, 1998, as amended on April 30, 1998, and Forms 10-Q for the fiscal quarters ended March 31, June 30, and September 30, 1998, did not, when filed with the Securities and Exchange Commission, contain any untrue statements of material fact or omit to state any material fact necessary in order to make the statements therein, in light of the circumstances in which they were made, not misleading.

3.6 CAPITALIZATION

(a) The authorized capital stock of the Company consists of 50,000,000 shares of Common Stock, of which 15,688,596 shares were issued and outstanding as of September 30, 1998, and 10,000,000 shares of Preferred Stock, none of which are outstanding. All such issued and outstanding shares have been duly authorized and validly issued, and are fully paid and nonassessable and have been issued in compliance with all applicable federal and state securities laws.

(b) The Company had outstanding options to purchase 2,939,256 shares of Common Stock and outstanding warrants to purchase 20,000 shares of Common Stock as of September 30, 1998. There are no preemptive or other outstanding rights, options, warrants, conversion rights or agreements for the purchase or acquisition from the Company of any shares of its capital stock or other securities of the Company.

3.7 SUBSIDIARIES. The Company does not presently own or control, directly or indirectly, and has no stock or other interest as owner or principal in, any other corporation or partnership, joint venture, association or other business venture or entity.

3.8 VALID ISSUANCE OF SHARES. The shares of Common Stock which will be purchased by Purchaser hereunder, when issued, sold and delivered in accordance with the terms hereof for the con-sideration expressed herein, will be duly and validly authorized and issued, fully paid and nonassessable and, based in part upon the representations of Purchaser in Section 4.3 of this Agreement, will be issued in compliance with all applicable federal and state securities laws.

3.9 LITIGATION, ETC. There is no action, suit or proceeding pending nor, to the best of its knowledge, any action, suit, proceeding or investigation currently threatened against the Company, nor, to the best of its knowledge, is there any basis therefor, which might result, either individually or in the aggregate, in any material adverse change in the assets, condition, affairs or prospects of the Company, financial or otherwise. The foregoing includes, without limitation, any action, suit, proceeding or investigation, pending or threatened, that questions the validity of this Agreement or the right of the Company to enter into the Agreement.

3.10 GOVERNMENTAL CONSENTS. No consent, approval, order or authorization of, or registration, qualification, designation, declaration or filing with, any federal, state, local or provincial governmental authority on the part of the Company is required in connection with the consummation of the transactions contemplated by this Agreement, except for notices required or permitted to be filed with certain state and federal securities commissions, which notices will be filed on a timely basis.

3.11 BROKERS FEE. Except for Volpe Brown Whelan & Company, no broker, finder or investment banker is entitled to any brokerage, finder's or other fee or commission in connection with the transactions contemplated by this Agreement based on arrangements made by the Company. The Company is solely responsible for any fee or commission payable to Volpe Brown Whelan & Company in connection with the transactions contemplated by this Agreement, and covenants to pay such fee or commission at Closing and agrees to indemnify Purchaser against all liabilities related to such fees.

3.12 CONTRACTS. The contracts described in the Private Placement Memorandum (as defined below) or incorporated by reference therein are in full force and effect on the date hereof; and neither the Company, nor to the best of the Company's knowledge, any other party is in material breach of or default under any of such contracts.

3.13 NO MATERIAL CHANGE. Since September 30, 1998 and except as described in or specifically contemplated by the Private Placement Memorandum, (i) the Company has not incurred any material liabilities or obligations, indirect, or contingent, or entered into any material verbal or written agreement or other transaction which is not in the ordinary course of business or which could result in a material adverse effect on the Company; (ii) the Company has not sustained any material loss or interference with its business or properties from fire, flood, windstorm, accident or other calamity, whether or not covered by insurance; (iii) the Company has not paid or declared any dividends or other distributions with respect to its capital stock and the Company is not in material default in the payment of principal or interest on any outstanding debt obligations; (iv) there has not been any change in the capital stock other than the sale of the Shares hereunder, shares issued pursuant to employee equity incentive plans or purchase plans approved by the Company's Board of Directors or indebtedness material to the Company (other than in the ordinary course of business); and (v) there has not been any material adverse change in the condition (financial or otherwise), business, properties or results of operations of the Company.

3.14 INTELLECTUAL PROPERTY. Except as disclosed in or specifically contemplated by the Private Placement Memorandum or incorporated by reference therein, the Company has sufficient trademarks, trade names, patent rights, copyrights, licenses, and governmental authorizations to conduct its businesses as now conducted; and the Company has no knowledge of any material infringement by it of trademark, trade name rights, patent rights, copyrights, licenses, trade secrets or other similar rights of others, and no claim has been made against the Company regarding trademark, trade name, patent, copyright, license, trade secrecy or other infringement which could have a material adverse effect on the condition (financial or otherwise), business or results of operations of the Company.

3.15 COMPLIANCE. The Company has not been advised, and has no reason to believe, that it is not conducting its business in compliance with all applicable laws, rules and regulations of the jurisdictions in which it is conducting business, including, without limitation, all applicable local, state and federal environmental laws and regulations; except where failure to be so in compliance would not materially adversely affect the condition (financial or otherwise), business or results of operations of the Company.

3.16 INVESTMENT COMPANY. The Company is not an "investment company" within the meaning of the Investment Company Act of 1940, as amended.

3.17 SEC DOCUMENTS; FINANCIAL STATEMENTS. The Company has filed in a timely manner all documents that it was required to file with the SEC under Sections 13, 14(a) and 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), during the twelve (12) months preceding the date of this Agreement. As of their respective filing dates (or, if amended prior to the date of this Agreement, when amended), all documents filed by the Company with the SEC (the "SEC Documents") complied in all material respects with the requirements of the Exchange Act. None of the SEC Documents as of their respective dates contained any untrue statement of material fact or omitted to state a material fact required to be stated therein or necessary to make the statements made therein, in light of the circumstances under which they were made, not misleading. The financial statements of the Company included in the SEC Documents (the "Financial Statements") comply as to form in all material respects with applicable accounting requirements and with the published rules and regulations of the SEC with respect thereto. The Financial Statements have been prepared in accordance with generally accepted accounting principles consistently applied and fairly present the financial position of the Company at the dates thereof and the results of its operations and cash flows for the periods then ended (subject, in the case of unaudited statements, to normal, recurring adjustments). The Company is eligible to use the Registration Statement on Form S-3 for resale of the Shares.

3.18 ADDITIONAL INFORMATION. The Company represents and warrants that the information contained in the Private Placement Memorandum dated December 8, 1998 (the "Private Placement Memorandum") containing certain summary information relating to the sale by the Company of the Shares pursuant to the Agreement, including all addenda and exhibits thereto (other than the Appendices), is true and correct in all material respects.

4. REPRESENTATIONS AND WARRANTIES OF PURCHASER.

Purchaser hereby represents and warrants to the Company as follows:

4.1 LEGAL POWER. Purchaser has the requisite legal power to enter into this Agreement, to carry out and perform its obligations under the terms of this Agreement and, at the Closing, will have the requisite legal power to purchase the Shares.

4.2 DUE EXECUTION. This Agreement has been duly authorized, executed and delivered by Purchaser, and, upon due execution and delivery by the Company, this Agreement will be a valid and binding obligation of Purchaser, except as enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally or by equitable principles.

4.3 INVESTMENT REPRESENTATIONS. In connection with the purchase of the Shares, the Purchaser makes the following representations:

(a) the Purchaser, taking into account the personnel and resources it can practically bring to bear on the purchase of the Shares contemplated hereby, is knowledgeable, sophisticated and experienced in making, and is qualified to make, decisions with respect to investments in shares representing an investment decision like that involved in the purchase of the Shares, including investments in securities issued by the Company, and has requested, received, reviewed and considered all information it deems relevant in making an informed decision to purchase the Shares;

(b) the Purchaser is acquiring the Shares in the ordinary course of its business and for its own account for investment only (as defined for purposes of the Hart-Scott-Rodino Antitrust Improvement Act of 1976 and the regulations thereunder) and with no present intention of distributing any such Shares or any arrangements or understanding with any other persons regarding the distribution of such Shares;

(c) the Purchaser will not, directly or indirectly, offer, sell, pledge, transfer, or otherwise dispose of (or solicit any offers to buy, purchase or otherwise acquire or take a pledge of) any of the Shares except in compliance with the Securities Act of 1933, as amended, (the "Act") and the rules and regulations of the Securities and Exchange Commission (the "SEC");

(d) the Purchaser has completed or caused to be completed the Registration Statement Questionnaire and the Stock Certificate Questionnaire, both attached hereto as Appendix I, for use in preparation of the Registration Statement and the answers thereto are true and correct to the best knowledge of the Purchaser as of the date hereof and will be true and correct as of the effective date of the Registration Statement;

(e) the Purchaser has, in connection with its decision to purchase the Shares, relied solely upon the Private Placement Memorandum and the documents included therein and the representations and warranties of the Company contained herein;

(f) the Purchaser is an "accredited investor" within the meaning of Rule 501 of Regulation D promulgated under the Act;

(g) the Purchaser understands that (i) the shares of Common Stock to be purchased under this Agreement have not been registered under the Act by reason of a specific exemption therefrom, that such securities must be held by Purchaser, and that Purchaser must, therefore, bear the economic risk of such investment, until a subsequent disposition thereof is registered under the Act or is exempt from such registration; (ii) each certificate representing such shares will be endorsed with the following legends:

(1) THE SECURITIES REPRESENTED HEREBY HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "ACT"), OR UNDER THE SECURITIES LAWS OF CERTAIN STATES. THESE SECURITIES ARE SUBJECT TO RESTRICTIONS ON TRANSFERABILITY AND RESALE AND MAY NOT BE TRANSFERRED OR RESOLD EXCEPT AS PERMITTED UNDER THE ACT AND THE APPLICABLE STATE SECURITIES LAWS, PURSUANT TO REGISTRATION OR EXEMPTION THEREFROM. THE ISSUER OF THESE SECURITIES MAY REQUIRE AN OPINION OF COUNSEL IN FORM AND SUBSTANCE SATISFACTORY TO THE ISSUER TO THE EFFECT THAT ANY PROPOSED TRANSFER OR RESALE IS IN COMPLIANCE WITH THE ACT AND ANY APPLICABLE STATE SECURITIES LAWS.

(2) THE SECURITIES REPRESENTED BY THIS CERTIFICATE ARE SUBJECT TO THE TERMS AND CONDITIONS, INCLUDING RESTRICTIONS ON TRANSFERABILITY, OF THAT CERTAIN STOCK PURCHASE AGREEMENT, DATED DECEMBER 8, 1998. A COPY OF SUCH STOCK PURCHASE AGREEMENT WILL BE FURNISHED TO THE RECORD HOLDER OF THIS CERTIFICATE WITHOUT CHARGE UPON WRITTEN REQUEST TO INHALE THERAPEUTIC SYSTEMS, INC. AT ITS PRINCIPAL PLACE OF BUSINESS."

(3) Any legend required to be placed thereon by the Company's Bylaws (and shown on Exhibit C hereto or as may hereafter be added to such Bylaws

with respect to all Common Stock of the Company) or under applicable state securities laws; and (iii) the Company will instruct any transfer agent not to register the transfer of the shares of Common Stock purchased pursuant to this Agreement (or any portion thereof) unless the conditions specified in the foregoing legends are satisfied, until such time as a transfer is made, pursuant to the terms of this Agreement, and in compliance with Rule 144 or pursuant to a registration statement or, if the opinion of counsel referred to above is to the further effect that such legend is not required in order to establish compliance with any provisions of the Act or this Agreement; and

(h) the Purchaser has such knowledge and experience in financial or business matters that it is capable of evaluating the merits and risks of the investment in the shares of Common Stock purchased hereunder.

4.4 NO BROKERS. No broker, finder or investment banker is entitled to any brokerage, finder's or other fee or commission in connection with the transactions contemplated by this Agreement based on arrangements made by Purchaser.

5. CONDITIONS TO CLOSING.

5.1 CONDITIONS TO OBLIGATIONS OF PURCHASER AT CLOSING. Purchaser's obligation to purchase the Shares at the Closing is subject to the fulfillment to Purchaser's satisfaction, on or prior to the Closing, of all of the following conditions, any of which may be waived by Purchaser:

(a) REPRESENTATIONS AND WARRANTIES TRUE; PERFORMANCE OF OBLIGATIONS. The representations and warranties made by the Company in Section 3 hereof shall be true and correct in all material respects on the Closing Date with the same force and effect as if they had been made on and as of said date and the Company shall have performed and complied with all obligations and conditions herein required to be performed or complied with by it on or prior to the Closing and a certificate duly executed by an officer of the Company, to the effect of the foregoing, shall be delivered to the Purchaser.

(b) PROCEEDINGS AND DOCUMENTS. All corporate and other proceedings in connection with the transactions contemplated at the Closing and all documents and instruments incident to such transactions shall be reasonably satisfactory in substance and form to counsel to the Purchaser, and counsel to the Purchaser shall have received all such counterpart originals or certified or other copies of such documents as they may reasonably request.

(c) QUALIFICATIONS, LEGAL INVESTMENT. All authorizations, approvals, or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful sale and issuance of the Shares shall have been duly obtained and shall be effective on and as of the Closing. No stop order or other order enjoining the sale of the Shares such Closing shall have been issued and no proceedings for such purpose shall be pending or, to the knowledge of the Company, threatened by the Securities and Exchange Commission, or any commissioner of corporations or similar officer of any state having jurisdiction over this transaction. At the time of the Closing, the sale and issuance of the Shares shall be legally permitted by all laws and regulations to which the Purchaser and the Company are subject.

(d) OPINION OF COUNSEL TO THE COMPANY. In connection with any sale of shares hereunder, the Purchaser shall have received from Cooley Godward LLP, counsel to the Company, an opinion letter addressed to it, dated the date of the Closing in substantially the form attached hereto as Exhibit D.

5.2 CONDITIONS TO OBLIGATIONS OF THE COMPANY AT CLOSING. The Company's obligation to issue and sell the Shares to be sold at the Closing is subject to the fulfillment to the Company's satisfaction, on or prior to the Closing of the following conditions, any of which may be waived by the Company:

(a) REPRESENTATIONS AND WARRANTIES TRUE. The representations and warranties made by the Purchaser in Section 4 hereof shall be true and correct in all material respects at the date of the Closing with the same force and effect as if they had been made on and as of the date hereof.

(b) PERFORMANCE OF OBLIGATIONS. Purchaser shall have performed and complied with all agreements and conditions herein required to be performed or complied with by it on or before the Closing and a Certificate duly executed by an officer of the Purchaser, to the effect of the foregoing, shall be delivered to the Company.

(c) QUALIFICATIONS, LEGAL INVESTMENT. All authorizations, approvals, or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful sale and issuance of the Shares shall have been duly obtained and shall be effective on and as of the Closing. No stop order or other order enjoining the sale of such shares shall have been issued and no proceedings for such purpose shall be pending or, to the knowledge of the Company, threatened by the SEC, or any commissioner of corporations or similar officer of any state having jurisdiction over this transaction. At the time of the Closing the sale and issuance of the Shares shall be legally permitted by all laws and regulations to which the Purchaser and the Company are subject.

6. REGISTRATION OF THE SHARES.

6.1 As soon as practical following the Closing, and in any event within 10 days thereafter, the Company will prepare and file with the SEC a registration statement on Form S-3 (or such other form that the Company may be eligible to use) relating to the sale of the Shares by Purchaser from time to time (the "Registration Statement"), and use its best efforts, subject to receipt of necessary information from Purchaser, to cause such Registration Statement to be declared effective by the SEC as soon as practicable after the SEC has completed its review process. In the event the Registration Statement has not been declared effective by the SEC within 60 days of its filing date, the purchase price shall be re-calculated as follows: (a) if the effective date occurs more than 60 days but less than 75 days from the filing date, the purchase price shall be reduced by five percent (5%), (b) if the effective date occurs more than 75 days but less than 120 days from the filing date, the purchase price shall be reduced by ten percent (10%) and (c) if the effective date has not occurred within 120 days from the filing date, the purchase price shall be reduced by twenty-five percent (25%). Within 15 days of the earlier of (i) the effective date of the Registration Statement or (ii) the date that is 120 days from the filing date, the Company shall refund the amount of the discount to the Purchaser by making a cash payment to Purchaser. The Company agrees to use its best efforts to keep such Registration Statement effective until the date on which the Shares may be resold by Purchaser without registration by reason of Rule 144(k) under the Act of 1933 or any other rule of similar effect. Notwithstanding the foregoing, following the effectiveness of the Registration Statement, the Company may, at any time, suspend the effectiveness of the Registration Statement for up to no longer than 30 days, as appropriate (a "Suspension Period"), by giving notice to the Purchaser, if the Company shall have determined that the Company may be required to disclose any material corporate development. The Company will use its best efforts to minimize the length of any Suspension Period. Notwithstanding the foregoing, no more than two Suspension Periods may occur in any twelve (12) month period. Purchaser agrees that, upon receipt of any notice from the Company of a Suspension Period, Purchaser will not sell any Shares pursuant to the Registration Statement until (i) Purchaser is advised in writing by the Company that the use of the applicable prospectus

may be resumed, (ii) Purchaser has received copies of any additional or supplemental or amended prospectus, if applicable, and (iii) Purchaser has received copies of any additional or supplemental filings which are incorporated or deemed to be incorporated by reference in such prospectus. Purchaser further covenants to notify the Company promptly of the sale of all of its Shares.

6.2 INDEMNIFICATION. For the purpose of this Section 6.2:

(i) the term "Purchaser/Affiliate" shall include Purchaser and any affiliate of Purchaser;

(ii) the term "Registration Statement" shall include any final prospectus, exhibit, supplement or amendment included in or relating to the Registration Statement referred to in Section 6.1.

(a) The Company agrees to indemnify and hold harmless Purchaser and each person, if any, who controls Purchaser within the meaning of the Securities Act, against any losses, claims, damages, liabilities or expenses to which Purchaser or such controlling person may become subject, under the Securities Act, the Exchange Act, or any other federal or state statutory law or regulation, or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of the Company), insofar as such losses, claims, damages, liabilities or expenses (or actions in respect thereof as contemplated below) arise out of or are based upon any untrue statement or alleged untrue statement of any material fact contained in the Registration Statement, including the prospectus, financial statements and schedules, and all other documents filed as a part thereof or incorporated by reference therein, as amended at the time of effectiveness of the Registration Statement, including any information deemed to be a part thereof as of the time of effectiveness pursuant to paragraph (b) of Rule 430A, or pursuant to Rule 434, of the Rules and Regulations, or the prospectus, in the form first filed with the Commission pursuant to Rule 424(b) of the Regulations, or filed as part of the Registration Statement at the time of effectiveness if no Rule 424(b) filing is required (the "Prospectus"), or any amendment or supplement thereto, or arise out of or are based upon the omission or alleged omission to state in any of them a material fact required to be stated therein or necessary to make the statements in any of them not misleading, or arise out of or are based in whole or in part on any inaccuracy in the representations and warranties of the Company contained in this Agreement, or any failure of the Company to perform its obligations hereunder or under law, and will reimburse Purchaser and each such controlling person for any legal and other expenses as such expenses are reasonably incurred by Purchaser or such controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action; PROVIDED, HOWEVER, that the Company will not be liable in any such case to the extent that any such loss, claim, damage, liability or expense arises out of or is based upon an untrue statement or alleged untrue statement or omission or alleged omission made in the Registration Statement, the Prospectus or any amendment or supplement thereto in reliance upon and in conformity with written information furnished to the Company (i) by or on behalf of Purchaser expressly for use therein or (ii) the failure of Purchaser to comply with the covenants and agreements contained in this Agreement respecting the sale of the Shares, the inaccuracy of any representations made by Purchaser herein or any statement or omission in any Prospectus that is corrected in any subsequent Prospectus that was delivered to Purchaser prior to the pertinent sale or sales by Purchaser. In addition to its other obligations under this paragraph (a), the Company agrees that, as an interim measure during the pendency of any claim, action, investigation, inquiry or other proceeding arising out of or based upon any statement or omission, or any alleged statement or omission, or any inaccuracy in the representations and warranties of the Company in this Agreement or failure to perform its obligations in this Agreement, all as described in this paragraph (a), it will reimburse Purchaser on a quarterly basis for all reasonable legal or other

expenses incurred in connection with investigating or defending any such claim, action, investigation, inquiry or other proceeding, notwithstanding the absence of a judicial determination as to the propriety and enforceability of the Company's obligation, to reimburse Purchaser for such expenses and the possibility that such payments might later be held to have been improper by a court of competent jurisdiction. To the extent that any such interim reimbursement payment is so held to have been improper, Purchaser shall promptly return it to the Company together with interest, compounded daily, determined on the basis of the prime rate (or other commercial lending rate for borrowers of the highest credit standing) announced from time to time by Bank of America National Trust and Savings Association, San Francisco, California (the "Prime Rate"). Any such interim reimbursement payments which are not made to a Purchaser within 30 days of a request for reimbursement shall bear interest at the Prime Rate from the date of such request. This indemnity agreement will be in addition to any liability which the Company may otherwise have.

(b) Purchaser will indemnify and hold harmless the Company, each of its directors, each of its officers who signed the Registration Statement and each person, if any, who controls the Company within the meaning of the Securities Act, against any losses, claims, damages, liabilities or expenses to which the Company, each of its directors, each of its officers who signed the Registration Statement or controlling person may become subject, under the Securities Act, the Exchange Act, or any other federal or state statutory law or regulation, or at common law or otherwise (including in settlement of any litigation, if such settlement is effected with the written consent of Purchaser) insofar as such losses, claims, damages, liabilities or expenses (or actions in respect thereof as contemplated below) arise out of or are based upon any failure of Purchaser to comply with the covenants and agreements contained in this Agreement respecting the sale of the Shares, the inaccuracy of any representation made by Purchaser herein or any untrue or alleged untrue statement of any material fact contained in the Registration Statement, the Prospectus, or any amendment or supplement thereto, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in the Registration Statement, the Prospectus, or any amendment or supplement thereto, in reliance upon and in conformity with written information furnished to the Company by or on behalf of any Purchaser expressly for use therein, and will reimburse the Company, each of its directors, each of its officers who signed the Registration Statement or controlling person for any legal and other expense reasonably incurred by the Company, each of its directors, each of its officers who signed the Registration Statement or controlling person in connection with investigating, defending, settling, compromising or paying any such loss, claim, damage, liability, expense or action. In addition to its other obligations under this paragraph (b), Purchaser agrees that, as an interim measure during the pendency of any claim, action, investigation, inquiry or other proceeding arising out of or based upon any failure to comply, statement or omission, or any alleged failure to comply, statement or omission, described in this paragraph (b) which relates to written information furnished to the Company by or on behalf of any purchaser, it will reimburse the Company (and, to the extent applicable, each officer, director or controlling person) on a quarterly basis for all reasonable legal or other expenses incurred in connection with investigating or defending any such claim, action, investigation, inquiry or other proceeding, notwithstanding the absence of a judicial determination as to the propriety and enforceability of Purchaser's obligations to reimburse the Company (and, to the extent applicable, each officer, director or controlling person) for such expenses and the possibility that such payments might later be held to have been improper by a court of competent jurisdiction. To the extent that any such interim reimbursement payment is so held to have been improper, the Company (and, to the extent applicable, each officer, director or controlling person) shall promptly return it to Purchaser together with interest, compounded daily, determined on the basis of the Prime Rate. Any such interim reimbursement payments which are not made to the Company within 30 days of a request for reimbursement shall bear interest at the Prime Rate

from the date of such request. This indemnity agreement will be in addition to any liability which Purchaser may otherwise have.

(c) Promptly after receipt by an indemnified party under this Section 6.2 of notice of the commencement of any action, such indemnified party will, if a claim in respect thereof is to be made against an indemnifying party under this Section 6.2 notify the indemnifying party in writing of the commencement thereof; but the omission so to notify the indemnifying party will not relieve it from any liability which it may have to any indemnified party for contribution or otherwise than under the indemnity agreement contained in this Section 6.2 or to the extent it is not prejudiced as a proximate result of such failure. In case any such action is brought against any indemnified party and such indemnified party seeks or intends to seek indemnity from an indemnifying party, the indemnifying party will be entitled to participate in, and, to the extent that it may wish, jointly with all other indemnifying parties similarly notified, to assume the defense thereof with counsel reasonably satisfactory to such indemnified party; provided, however, if the defendants in any such action include both the indemnified party and the indemnifying party and the indemnified party shall have reasonably concluded that there may be a conflict between the positions of the indemnifying party and the indemnified party in conducting the defense of any such action or that there may be legal defenses available to it and/or other indemnified parties which are different from or additional to those available to the indemnifying party, the indemnified party or parties shall have the right to select separate counsel to assume such legal defenses and to otherwise participate in the defense of such action on behalf of such indemnified party or parties. Upon receipt of notice from the indemnifying party to such indemnified party of its election so to assume the defense of such action and approval by the indemnified party of counsel, the indemnifying party will not be liable to such indemnified party under this Section 6.2 for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof unless (i) the indemnified party shall have employed such counsel in connection with the assumption of legal defenses in accordance with the proviso to the preceding sentence (it being understood, however, that the indemnifying party shall not be liable for the expenses of more than one separate counsel, approved by such indemnifying party in the case of paragraph (a), representing the indemnified parties who are parties to such action) or (ii) the indemnified party shall not have employed counsel reasonably satisfactory to the indemnified party to represent the indemnified party within a reasonable time after notice of commencement of action, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying party.

(d) If the indemnification provided for in this Section 6.2 is required by its terms but is for any reason held to be unavailable to or otherwise insufficient to hold harmless an indemnified party under paragraphs (a), (b) or (c) of this Section 6.2 in respect to any losses, claims, damages, liabilities or expenses referred to herein, then each applicable indemnifying party shall contribute to the amount paid or payable by such indemnified party as a result of any losses, claims, damages, liabilities or expenses referred to herein (i) in such proportion as is appropriate to reflect the relative benefits received by the Company and Purchaser from the placement of Common Stock or (ii) if the allocation provided by clause (i) above is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to in clause (i) above but the relative fault of the Company and Purchaser in connection with the statements or omissions or inaccuracies in the representations and warranties in this Agreement which resulted in such losses, claims, damages, liabilities or expenses, as well as any other relevant equitable considerations. The respective relative benefits received by the Company on the one hand and Purchaser on the other shall be deemed to be in the same proportion as the amount paid by Purchaser to the Company pursuant to this Agreement for the Shares purchased by Purchaser that were sold pursuant to the Registration Statement bears to the difference (the "Difference") between the amount Purchaser paid for the Shares that were sold pursuant to the Registration Statement and the amount received by Purchaser from such sale. The relative fault of the Company and Purchaser shall be determined by reference to,

among other things, whether the untrue or alleged statement of a material fact or the omission or alleged omission to state a material fact or the inaccurate or the alleged inaccurate representation and/or warranty relates to information supplied by the Company or by Purchaser and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such statement or omission. The amount paid or payable by a party as a result of the losses, claims, damages, liabilities and expenses referred to above shall be deemed to include, subject to the limitations set forth in paragraph (c) of this Section 6.2 any legal or other fees or expenses reasonably incurred by such party in connection with investigating or defending any action or claim. The provisions set forth in paragraph (c) of this Section 6.2 with respect to notice of commencement of any action shall apply if a claim for contribution is to be made under this paragraph (d); PROVIDED, HOWEVER, that no additional notice shall be required with respect to any action for which notice has been give under paragraph (c) for purposes of indemnification. The Company and Purchaser agree that it would not be just and equitable if contribution pursuant to this Section 6.2 were determined solely by pro rata allocation (even if Purchaser were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to in this paragraph. Notwithstanding the provisions of this Section 6.2, the Purchaser shall not be required to contribute any amount in excess of the amount by which the Difference exceeds the amount of any damages that Purchaser has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation.

(e) It is agreed that any controversy arising out of the operation of the interim reimbursement arrangements set forth in paragraphs (a) and (b) of this Section 6.2, including the amounts of any requested reimbursement payments and the method of determining such amounts, shall be settled by arbitration conducted under the provisions of the Judicial Arbitration and Mediation Service (JAMS) and shall be held in San Francisco, California. Any such arbitration must be commenced by service of a written demand for arbitration or a written notice of intention to arbitrate, therein electing the arbitration tribunal. In the event the party demanding arbitration does not make such designation of any arbitration tribunal in such demand or notice, then the party responding to said demand or notice is authorized to do so. Such an arbitration would be limited to the operation of the interim reimbursement provisions contained in paragraphs (a) and (b) of this Section 6.2 and would not resolve the ultimate propriety or enforceability of the obligation to reimburse expenses which is created by the provisions of such paragraphs (a) and (b).

## 7. MISCELLANEOUS.

7.1 SURVIVAL OF REPRESENTATIONS, WARRANTIES AND AGREEMENTS. Notwithstanding any investigation made by any party to this Agreement, all covenants, agreements, representations and warranties made by the Company and each Purchaser herein and in the certificates for the securities delivered pursuant hereto shall survive the execution of this Agreement, the delivery to the Purchasers of the Shares being purchased and the payment therefor and shall expire on the second anniversary of the date hereof.

7.2 GOVERNING LAW. This Agreement shall be governed by and interpreted in accordance with the substantive laws of the State of California and the United States of America, without regard to choice of law rules.

7.3 SUCCESSORS AND ASSIGNS. Except as otherwise expressly provided herein, the provisions hereof shall inure to the benefit of, and be binding upon, the successors, and permitted assigns of the parties hereto.

7.4 ENTIRE AGREEMENT. This Agreement and the Exhibits hereto, and the other documents delivered pursuant hereto, constitutes the full and entire understanding and agreement among the parties with regard to the subjects hereof and no party shall be liable or bound to any other party in any manner by any representations, warranties, covenants, or agreements except as specifically set forth herein or therein. Nothing in this Agreement, express or implied, is intended to confer upon any party, other than the parties hereto and their respective successors and assigns, any rights, remedies, obligations, or liabilities under or by reason of this Agreement, except as expressly provided herein.

7.5 SEVERABILITY. Whenever possible, each provision of the Agreement will be interpreted in such manner as to be effective and valid under applicable law, but if any provision of the Agreement is held to be prohibited by or invalid under applicable law, such provision will be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of the Agreement. In the event of such invalidity, the parties shall seek to agree on an alternative enforceable provision that preserves the original purpose of this Agreement.

7.6 AMENDMENT AND WAIVER. Except as otherwise provided herein, any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance, either retroactively or prospectively, and either for a specified period of time or indefinitely), with the written consent of the Company and Purchaser.

7.7 NOTICES. All notices and other communications required or permitted hereunder shall be in writing and shall be deemed effectively given and received (a) upon personal delivery, (b) on the fifth day following mailing by registered or certified mail, return receipt requested, postage prepaid, addressed to the Company and Purchaser at their respective addresses first above written, (c) upon transmission of telegram or facsimile (with telephonic notice), or (d) upon confirmed delivery by overnight commercial courier service.

7.8 FEES AND EXPENSES. The Company and the Purchaser shall bear their own expenses and legal fees incurred on their behalf with respect to this Agreement and the transactions contemplated hereby.

7.9 TITLES AND SUBTITLES. The titles of the sections and subsections of this Agreement are for convenience of reference only and are not to be considered in construing this Agreement.

7.10 COUNTERPARTS. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one instrument.

7.11 NASDAQ. The Company will promptly file a Notification of Listing of Additional Shares with Nasdaq covering the Shares. The Company agrees to take all action reasonable and necessary to maintain the listing of its Common Stock on Nasdaq.

7.12 ACKNOWLEDGMENT OF PURCHASER REGARDING DOCUMENT DELIVERY. Purchaser acknowledges that the Company, with Purchaser's consent, did not deliver to Purchaser in paper format Exhibits B and C to this Agreement and Exhibits A through D to the Private Placement Memorandum. Purchaser further acknowledges that in lieu of such delivery, Purchaser has obtained such documents from the SEC's web site at www.sec.gov.

IN WITNESS WHEREOF, the foregoing Stock Purchase Agreement is hereby executed as of the date first above written.

INHALE THERAPEUTIC SYSTEMS, INC.

By: /s/ Stephen L. Hurst
---

Name: Stephen L. Hurst
---

Title: Secretary and General Counsel
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CAPITAL RESEARCH AND MANAGEMENT COMPANY, ON BEHALF OF SMALLCAP WORLD FUND, INC. AND AMERICAN VARIABLE INSURANCE SERIES-GROWTH FUND

By: /s/ Michael Downer
---

Name: Michael Downer
---

Title:
---

APPENDIX I

INHALE THERAPEUTIC SYSTEMS
STOCK CERTIFICATE QUESTIONNAIRE

In connection with the Agreement, please provide us with the following information:

1. The exact name that your Shares are to be registered in (this is the name that will appear on your stock certificate(s)). You may use a nominee name if appropriate: _____

2. The relationship between the Purchaser of the Shares and the Registered Holder listed in response to item 1 above: _____

3. The mailing address of the Registered Holder listed in response to item 1 above: _____
_____
_____
_____

4. The Social Security Number or Tax Identification Number of the Registered Holder listed in response to item 1 above: _____

APPENDIX I

INHALE THERAPEUTIC SYSTEMS
REGISTRATION STATEMENT QUESTIONNAIRE

In connection with the preparation of the Registration Statement, please provide us with the following information:

1. Pursuant to the "Selling Shareholder" section of the Registration Statement, please state your or your organization's name exactly as it should appear in the Registration Statement:

2. Please provide the number of shares that you or your organization will own immediately after Closing, including those Shares purchased by you or your organization pursuant to this Purchase Agreement and those shares purchased by you or your organization through other transactions:

3. Have you or your organization had any position, office or other material relationship within the past three years with the Company or its affiliates other than as disclosed in the Prospectus included in the Registration Statement?

_____ Yes _____ No

If yes, please indicate the nature of any such relationships below:

_____

_____

_____

_____

_____

EXHIBIT 5.1

[COOLEY GODWARD LLP LETTERHEAD]

December 11, 1998

Inhale Therapeutic Systems, Inc.
150 Industrial Road
San Carlos, CA 94070

Ladies and Gentlemen:

You have requested our opinion with respect to certain matters in connection with the filing by Inhale Therapeutic Systems, Inc., a Delaware corporation (the "Company"), of a Resale Registration Statement on Form S-3 (the "Registration Statement") with the Securities and Exchange Commission (the "Commission") on December 14, 1998 covering the offering of up to 1,200,000 shares of the Company's common stock, par value $.0001 per share (the "Shares"). All of the Shares are to be sold by certain stockholders as described in the Registration Statement.

In connection with this opinion, we have examined and relied upon the Registration Statement and related Prospectus included therein, the Company's Certificate of Incorporation and Bylaws, and the originals or copies certified to our satisfaction of such records, documents, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. We have assumed the genuineness and authenticity of all documents submitted to us as originals, and the conformity to originals of all documents where due execution and delivery are a prerequisite to the effectiveness thereof.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares are validly issued, fully paid and nonassessable.

We consent to the reference to our firm under the caption "Legal Matters" in the Prospectus included in the Registration Statement and to the filing of this opinion as an exhibit to the Registration Statement.

Sincerely,

Cooley Godward LLP

/s/ Mark P. Tanoury

Mark P. Tanoury

EXHIBIT 23.1

CONSENT OF ERNST & YOUNG LLP, INDEPENDENT AUDITORS

We consent to the reference to our firm under the caption "Experts" in the Registration Statement (Form S-3) and related Prospectus of Inhale Therapeutic Systems, Inc. for the registration of 1,200,000 shares of its common stock and to the incorporation by reference therein of our report dated January 22, 1998, with respect to the financial statements of Inhale Therapeutic Systems, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 1997, filed with the Securities and Exchange Commission.

/S/ ERNST & YOUNG LLP

Palo Alto, California
December 11 , 1998