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**UNITED STATES  
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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**GTx, Inc.**

(Exact name of registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**62-1715807**  
(I.R.S. Employer Identification No.)

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**3 N. Dunlap Street, 3rd Floor  
Van Vleet Building  
Memphis, TN 38163  
(901) 523-9700**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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**MITCHELL S. STEINER, M.D., F.A.C.S.  
CHIEF EXECUTIVE OFFICER  
GTx, Inc.**

**3 N. Dunlap Street, 3rd Floor  
Van Vleet Building  
Memphis, TN 38163  
(901) 523-9700**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Copy to:

**SUZANNE SAWOCHKA HOOPER, ESQ.  
COOLEY GODWARD LLP  
FIVE PALO ALTO SQUARE  
3000 EL CAMINO REAL  
PALO ALTO, CA 94306-2155  
(650) 843-5000**

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**Approximate date of proposed sale to the public:  
From time to time after the effective date of this Registration Statement.**

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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.

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. o

#### CALCULATION OF REGISTRATION FEE

Title of Securities to be Registered(1)	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee(3)
Common Stock, par value \$.001 per share	\$100,000,000	\$11,770

- (1) There are being registered hereunder such indeterminate number of shares of common stock as shall have an aggregate initial offering price not to exceed \$100,000,000.
- (2) The proposed maximum aggregate offering price per share will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder.
- (3) Calculated pursuant to Rule 457(o) under the Securities Act.

**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 Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.**

**Information contained herein is subject to completion or amendment. A registration statement relating to these securities has been filed with the Securities and Exchange Commission. These securities may not be sold nor may offers to buy be accepted prior to the time the registration statement becomes effective. This prospectus shall not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of these securities in any State in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such State.**

**SUBJECT TO COMPLETION, DATED August 4, 2005**

**PROSPECTUS**



**GTx, INC.**

**\$100,000,000**

**Common Stock**

From time to time, we may sell common stock in one or more offerings for an aggregate initial offering price of up to \$100,000,000.

We will provide the specific terms of any offering in one or more supplements to this prospectus. You should read this prospectus and any prospectus supplement, as well as any documents incorporated by reference in this prospectus and any prospectus supplement, carefully before you invest.

Our common stock is quoted on the Nasdaq National Market under the trading symbol "GTXI." On August 3, 2005, the last reported sale price of our common stock on the Nasdaq National Market was \$11.50 per share.

**THIS PROSPECTUS MAY NOT BE USED TO OFFER OR SELL ANY SECURITIES UNLESS ACCOMPANIED BY A PROSPECTUS SUPPLEMENT.**

If any underwriters are involved in the sale of any securities with respect to which this prospectus is being delivered, the names of such underwriters and any applicable commissions or discounts will be set forth in a prospectus supplement. The net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

INVESTING IN OUR SECURITIES INVOLVES A HIGH DEGREE OF RISK. SEE THE SECTION ENTITLED "RISK FACTORS" ON PAGE 2 OF THIS PROSPECTUS.

The date of this prospectus is \_\_\_\_\_, 2005

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## **GTX, INC.**

GTx, Inc. is a biopharmaceutical company dedicated to the discovery, development and commercialization of therapeutics for serious men's health conditions. Our drug discovery and development programs are focused on small molecules that selectively modulate the effects of estrogens and androgens.

We have four clinical programs. We are developing Acapodene (toremifene citrate) in two clinical programs in men: (1) a pivotal Phase III clinical trial for the prevention of prostate cancer in high risk men and (2) a pivotal Phase III clinical trial for the treatment of serious side effects of androgen deprivation therapy for advanced prostate cancer. In our third clinical program, we and our partner, Ortho Biotech Products, L.P., a subsidiary of Johnson & Johnson, are developing andarine, a selective androgen receptor modulator, or SARM, for cancer cachexia. We are working with Ortho Biotech to progress andarine into a Phase II clinical trial. In our fourth clinical program, we are developing our second SARM, ostarine, for andropause and other chronic wasting conditions related to aging, including frailty and sarcopenia. We also have the exclusive right to market Fareston (toremifene citrate 60 mg) tablets, which have been approved by the U.S. Food and Drug Administration for the treatment of metastatic breast cancer, in the United States. The active pharmaceutical ingredient in Fareston is the same as in Acapodene, but at a different dose.

We were originally incorporated under the name Genotherapeutics, Inc. in Tennessee in September 1997. We changed our name to GTx, Inc. in 2001, and we reincorporated in Delaware in 2003. Our principal executive office is located at 3 N. Dunlap Street, Van Vleet Building, Memphis, Tennessee, and our telephone number is (901) 523-9700. Our website address is [www.gtxinc.com](http://www.gtxinc.com). The information contained in our website is not a part of this prospectus or any prospectus supplement.

Service marks, trademarks and trade names referred to in this prospectus are the property of their respective owners.

## **ABOUT THIS PROSPECTUS**

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission using a "shelf" registration process. Under this shelf registration process, we may sell common stock in one or more offerings, up to a total dollar amount of \$100,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we sell common stock, we will provide a prospectus supplement that will contain more specific information about the terms of that offering. We may also add, update or change in the prospectus supplement any of the information contained in this prospectus. However, no prospectus supplement will fundamentally change the terms that are set forth in this prospectus or offer a security that is not registered and described in this prospectus at the time of its effectiveness. This prospectus, together with applicable prospectus supplements, includes all material information relating to this offering. If there is any inconsistency between the information in this prospectus and the information in the accompanying prospectus supplement, you should rely on the information in the prospectus supplement. Please carefully read both this prospectus and any prospectus supplement together with the additional information described below under "Where You Can Find More Information."

You should rely only on the information we have provided or incorporated by reference in this prospectus or any prospectus supplement. We have not authorized anyone to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus or any prospectus supplement. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus or any prospectus supplement is accurate only as of the date on the front of the document and that any information we have incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus or any sale of a security.

Unless otherwise mentioned or unless the context requires otherwise, all references in this prospectus to "GTx," "we," "our" or similar references mean GTx, Inc.

## **RISK FACTORS**

Investment in our securities involves a high degree of risk. You should consider carefully the risk factors in any prospectus supplement and in our filings with the Securities and Exchange Commission, as well as other information in this prospectus and any prospectus supplement and the documents incorporated by reference herein or therein, before purchasing any of our securities. Each of the risk factors could adversely affect our business, operating results and financial condition, as well as adversely affect the value of an investment in our securities.

## **FORWARD-LOOKING INFORMATION**

This prospectus, any prospectus supplement and the documents that we incorporate by reference contain statements indicating expectations about future performance and other forward-looking statements that involve risks and uncertainties. We usually use words such as “may,” “will,” “should,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “future,” “intend,” “potential” or “continue” or the negative of these terms or similar expressions to identify forward-looking statements. These statements appear throughout this prospectus, any prospectus supplement and the documents that we incorporate by reference and are statements regarding our current intent, belief or expectation, primarily with respect to our operations and related industry developments. *Examples of these statements include, but are not limited to, statements regarding the following: our current and anticipated clinical trials; the progress of our research and development programs; our corporate collaborations, including potential future licensing fees and milestone and royalty payments; our research and development expenses; protection of our intellectual property; sufficiency of our cash resources; and our operations and legal risks.* You should not place undue reliance on these forward-looking statements. Our actual results could differ materially from those anticipated in these forward-looking statements for many reasons. Important factors that could cause or contribute to such differences include, but are not limited to, those discussed in any prospectus supplement or in the documents we incorporate by reference in this prospectus, particularly in the section entitled “Additional Factors That Might Affect Future Results” contained in our filings made with the Securities and Exchange Commission from time to time. Any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

## **USE OF PROCEEDS**

Except as described in any prospectus supplement, we intend to use the net proceeds from the sale of our common stock for research and development and general corporate purposes. We may also use a portion of the net proceeds to acquire or invest in businesses, products and technologies that are complementary to our own. Pending these uses, the net proceeds will be invested in investment-grade, interest-bearing securities.

## DESCRIPTION OF CAPITAL STOCK

Our authorized capital stock consists of 60,000,000 shares of common stock, \$0.001 par value per share, and 5,000,000 shares of preferred stock, \$0.001 par value per share. As of July 25, 2005, there were 24,664,716 shares of our common stock outstanding and no shares of preferred stock outstanding.

### Common Stock

The holders of common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders and do not have cumulative voting rights. The affirmative vote of the holders of a majority of the shares of common stock entitled to vote on a matter is required to approve the matter (except when a different vote is required by law, Nasdaq rules, our certificate of incorporation or our bylaws), and directors are elected by plurality vote. Subject to preferences that may be applicable to any outstanding shares of preferred stock, the holders of common stock are entitled to receive ratably such dividends as may be declared by the board of directors out of legally available funds. Upon our liquidation, dissolution or winding up, holders of our common stock are entitled to share ratably in all assets remaining after payment of liabilities and the liquidation preferences of any outstanding shares of preferred stock. Holders of common stock have no preemptive rights and no right to convert their common stock into any other securities. There are no redemption or sinking fund provisions applicable to our common stock. All outstanding shares of our common stock are, and all shares of common stock that may be issued under this prospectus will be, fully paid and non-assessable.

The foregoing summary description of our common stock is based on the provisions of our certificate of incorporation and bylaws and the applicable provisions of the Delaware General Corporation Law. This information may not be complete in all respects and is qualified entirely by reference to the provisions of our certificate of incorporation, bylaws and the Delaware General Corporation Law. For information on how to obtain copies of our certificate of incorporation and bylaws, see "Where You Can Find More Information."

The rights of the holders of our common stock are subject to, and may be adversely affected by, the rights of holders of shares of any preferred stock that we may designate and issue in the future.

### Preferred Stock

Pursuant to our certificate of incorporation, our board of directors has the authority, without further action by the stockholders (unless such stockholder action is required by applicable law or Nasdaq rules), to issue up to 5,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges of the shares of each wholly unissued series and any qualifications, limitations or restrictions thereon, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding. Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of the common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in control of us and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock. We have no present plans to issue preferred stock.

### Registration Rights

As of the date of this prospectus, holders of approximately 11,141,057 shares of our common stock are entitled to rights with respect to the registration of those shares of common stock under the Securities Act of 1933. If we propose to register any of our securities under the Securities Act, either for our own account or for the account of others, the holders of these shares are entitled to notice of the registration and are entitled to include, at our expense, their shares of common stock in the registration and any related underwriting, provided, among other conditions, that the underwriters may limit the number of shares to be included in the registration. In addition, the holders of certain of these shares may require us, at our expense and subject to certain limitations, to file a registration statement under the Securities Act with respect to their shares of our common stock. These holders have waived these registration rights in connection with the offerings that might be made under this registration statement.

## **Anti-Takeover Effects of Provisions of Delaware Law and Our Charter Documents**

*Delaware Takeover Statute.* We are subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, the statute prohibits a publicly-held Delaware corporation such as us from engaging in a business combination with an interested stockholder for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. For purposes of Section 203, a business combination includes a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder, and an interested stockholder is a person who, together with affiliates and associates, owns, or within three years prior, did own, 15% or more of our voting stock. Section 203 of the Delaware General Corporation Law will generally have an anti-takeover effect for transactions not approved in advance by our board of directors, including discouraging attempts that might result in a premium over the market price for the shares of common stock held by our stockholders.

*Charter Documents.* Our certificate of incorporation and bylaws provide that our board of directors be divided into three classes of directors, with each class serving a staggered three-year term. The classification system of electing directors may tend to discourage a third party from making a tender offer or otherwise attempting to obtain control of us and may maintain the composition of our current board of directors, as the classification of the board of directors generally increases the difficulty of replacing a majority of directors. In addition, our certificate of incorporation and bylaws:

- provide that any action required or permitted to be taken by our stockholders must be effected at a duly called annual or special meeting of stockholders and may not be effected by any consent in writing;
- establish advance notice requirements for nominations for election to our board of directors or for proposing matters that can be acted upon at a stockholder meeting;
- provide that the authorized number of directors may be changed only by resolution of the board of directors; and
- provide that special meetings of our stockholders may be called only by the chairman of our board of directors, our chief executive officer or our board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors.

The Delaware corporate law statute provides generally that the affirmative vote of a majority of the shares entitled to vote is required to amend a corporation's bylaws, unless a corporation's certificate of incorporation requires a greater percentage or also confers the power upon the corporation's directors. Our bylaws may be amended or repealed by:

- the affirmative vote of a majority of our directors then in office; or
- the affirmative vote of the holders of at least 66-2/3% of the voting power of all then-outstanding shares of our capital stock entitled to vote generally in the election of directors.

The provisions described in the preceding paragraph that are included in our certificate of incorporation may only be amended or repealed by the affirmative vote of a majority of our directors and the affirmative vote of the holders of at least 66-2/3% of the voting power of all then-outstanding shares of our capital stock entitled to vote generally in the election of directors.

These and other provisions contained in our certificate of incorporation and bylaws could delay or discourage some types of transactions involving an actual or potential change in our control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares over then current prices, and may limit the ability of stockholders to remove current management or approve transactions that stockholders may deem to be in their best interests and, therefore, could adversely affect the price of our common stock.

## **Transfer Agent and Registrar**

The transfer agent and registrar for our common stock is Computershare. Its address is 150 Royall Street, Canton, MA 02021.



## PLAN OF DISTRIBUTION

We may sell the common stock through underwriters or dealers, through agents, or directly to one or more purchasers. One or more prospectus supplements will describe the terms of the offering of the common stock, including:

- the name or names of any agents or underwriters;
- the purchase price of the common stock and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional shares of common stock from us;
- any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchange or market on which the common stock may be listed.

Only underwriters named in the prospectus supplement are underwriters of the common stock offered by the prospectus supplement.

If underwriters are used in the sale, they will acquire the common stock for their own account and may resell the common stock from time to time in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the common stock will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the common stock to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all the common stock offered by the prospectus supplement if they are to purchase any of such offered shares. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may change from time to time. We may use underwriters with whom we have a material relationship. We will describe in the prospectus supplement naming the underwriter, the nature of any such relationship.

We may sell the common stock directly or through agents we designate from time to time. We will name any agent involved in the offering and sale of the common stock and we will describe any commissions we will pay the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, our agent will act on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain types of institutional investors to purchase the common stock from us at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. We will describe the conditions to these contracts and the commissions we must pay for solicitation of these contracts in the prospectus supplement.

We may provide agents and underwriters with indemnification against certain civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to such liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

Any underwriter may engage in over-allotment, stabilizing transactions, short covering transactions and penalty bids in accordance with Regulation M under the Securities Exchange Act of 1934. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying shares of common stock so long as the stabilizing bids do not exceed a specified maximum price. Short covering transactions involve exercise by underwriters of an over-allotment option or purchases of the common

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stock in the open market after the distribution is completed to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the shares of common stock originally sold by the dealer are purchased in a short covering transaction. Those activities may cause the price of the common stock to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Our common stock is quoted on the Nasdaq National Market. One or more underwriters may make a market in our common stock, but the underwriters will not be obligated to do so and may discontinue market making at any time without notice. We cannot give any assurance as to liquidity of the trading market for our common stock.

Any underwriters who are qualified market makers on the Nasdaq National Market may engage in passive market making transactions in the securities on the Nasdaq National Market in accordance with Rule 103 of Regulation M under the Securities Exchange Act of 1934, during the five business days prior to the pricing of the offering, before the commencement of offers or sales of the securities. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded.

In compliance with guidelines of the National Association of Securities Dealers, or NASD, the maximum consideration or discount to be received by any NASD member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

### **LEGAL MATTERS**

The validity of the securities being offered hereby will be passed upon by Cooley Godward LLP, Palo Alto, California.

### **EXPERTS**

Ernst & Young LLP, independent registered public accounting firm, has audited our financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2004, as set forth in their report, which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

### **WHERE YOU CAN FIND MORE INFORMATION**

We are a reporting company and file annual, quarterly and current reports, proxy statements and other information with the Securities and Exchange Commission. We have filed with the Securities and Exchange Commission a registration statement on Form S-3 under the Securities Act with respect to the common stock we are offering under this prospectus. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. For further information with respect to us and the common stock we are offering under this prospectus, we refer you to the registration statement and the exhibits filed as a part of the registration statement. You may read and copy the registration statement, as well as our reports, proxy statements and other information, at the Securities and Exchange Commission's public reference room at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. You can request copies of these documents by writing to the Securities and Exchange Commission and paying a fee for the copying cost. Please call the Securities and Exchange Commission at 1-800-SEC-0330 for more information about the operation of the public reference room. Our Securities and Exchange Commission filings are also available at the Securities and Exchange Commission's website at <http://www.sec.gov>.

The Securities and Exchange Commission allows us to "incorporate by reference" information that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is an important part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the Securities and Exchange Commission prior to the date of this prospectus, while information that we file later with the Securities and Exchange Commission will

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automatically update and supersede this information. We incorporate by reference into this registration statement and prospectus the documents listed below and any future filings we will make with the Securities and Exchange Commission under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, after the date of the initial registration statement but prior to effectiveness of the registration statement and after the date of this prospectus but prior to the termination of the offering of the securities covered by this prospectus, except in each case for information contained in any such filing where we indicate that such information is being furnished and is not to be considered "filed" under the Securities Exchange Act of 1934, as amended.

The following documents filed with the Securities and Exchange Commission are incorporated by reference in this prospectus:

- our Annual Report on Form 10-K, as amended, for the year ended December 31, 2004, filed with the Securities and Exchange Commission on March 24, 2005;
- our Quarterly Report on Form 10-Q, as amended, for the quarter ended March 31, 2005, filed with the Securities and Exchange Commission on April 29, 2005;
- our Current Report on Form 8-K filed with the Securities and Exchange Commission on February 1, 2005;
- our Current Report on Form 8-K filed with the Securities and Exchange Commission on February 2, 2005;
- our Current Report on Form 8-K/A filed with the Securities and Exchange Commission on March 7, 2005;
- our Current Report on Form 8-K filed with the Securities and Exchange Commission on June 2, 2005;
- our Quarterly Report on Form 10-Q for the quarter ended June 30, 2005, filed with the Securities and Exchange Commission on July 27, 2005; and
- the description of our common stock contained in our registration statement on Form 8-A filed with the Securities and Exchange Commission on January 13, 2004, including all amendments and reports filed for the purpose of updating such information.

We will furnish without charge to you, upon written or oral request, a copy of any or all of the documents incorporated by reference, including exhibits to these documents. You should direct any requests for documents to GTx, Inc., Attention: Corporate Secretary, 3 N. Dunlap Street, Van Vleet Building, Memphis, TN 38163. Our phone number is (901) 523-9700.

**PART II**  
**INFORMATION NOT REQUIRED IN THE PROSPECTUS**

**Item 14. Other Expenses of Issuance and Distribution**

The following table sets forth the estimated costs and expenses, other than the underwriting discounts and commissions, payable by the registrant in connection with the offering of the securities being registered. All the amounts shown are estimates, except for the registration fee.

Securities and Exchange Commission registration fee	\$ 11,770
Accounting fees and expenses	100,000
Legal fees and expenses	150,000
Printing, transfer agent and miscellaneous expenses	<u>75,000</u>
<b>Total</b>	<b><u>\$336,770</u></b>

**Item 15. Indemnification of Officers and Directors**

Our certificate of incorporation contains provisions permitted under Delaware law relating to the liability of directors. These provisions eliminate a director's personal liability for monetary damages resulting from a breach of fiduciary duty, except in circumstances involving wrongful acts, such as:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of the law;
- any act related to unlawful stock repurchases, redemptions or other distribution or payments of dividends; or
- any transaction from which the director derived an improper personal benefit.

These provisions do not limit or eliminate our rights or any stockholder's rights to seek non-monetary relief, such as an injunction or rescission, in the event of a breach of director's fiduciary duty. These provisions will not alter a director's liability under federal securities laws.

As permitted by Section 145 of the Delaware General Corporation Law, our bylaws require us to indemnify our directors and executive officers to the fullest extent not prohibited by the Delaware law. We may expand the extent of such indemnification by individual contracts with our directors and executive officers. Further, we may decline to indemnify any director or executive officer in connection with any proceeding initiated by such person or any proceeding by such person against us or our directors, officers, employees or other agents, unless such indemnification is expressly required to be made by law or the proceeding was authorized by our board of directors.

We have entered into indemnity agreements with each of our current directors and our executive officers to give such directors and officers additional contractual assurances regarding the scope of the indemnification set forth in our certificate of incorporation and bylaws and to provide additional procedural protections. At present, there is no pending litigation or proceeding involving any of our directors, officers or employees for which indemnification is sought, nor are we aware of any threatened litigation that may result in claims for indemnification.

We have the power to indemnify our other officers, employees and other agents, as permitted by Delaware law, but we are not required to do so.

We have a directors' and officers' insurance and registrant reimbursement policy. The policy insures directors and officers against unindemnified losses arising from certain wrongful acts in their capacities as directors and officers and reimburses the registrant for those losses for which the registrant has lawfully indemnified the directors and officers. The policy contains various exclusions, none of which apply to this offering.

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The underwriting agreement that we might enter into (Exhibit 1.1) will provide for indemnification by any underwriters of GTx, our directors, our officers who sign the registration statement and our controlling persons for some liabilities, including liabilities arising under the Securities Act of 1933.

### **Item 16. Exhibits and Financial Statement Schedules**

#### **(a) Exhibits**

<b>Exhibit Number</b>	<b>Description of Document</b>
1.1	Form of Underwriting Agreement.(1)
4.1	Amended and Restated Certificate of Incorporation of the Company.
4.2	Amended and Restated Bylaws of the Company.(2)
4.3	Specimen Common Stock Certificate.(2)
5.1	Opinion of Cooley Godward LLP.
23.1	Consent of Ernst & Young LLP, independent registered public accounting firm.
23.2	Consent of Cooley Godward LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included in the signature page).

(1) To be filed by amendment or as an exhibit to a current report of the registrant on Form 8-K and incorporated herein by reference.

(2) Filed as an exhibit to the registrant's registration statement on Form S-1 or amendments thereto (File No. 333-109700), originally filed with the Securities and Exchange Commission on October 15, 2003, as amended, and incorporated herein by reference.

### **Item 17. Undertakings**

The undersigned registrant hereby undertakes:

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

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

(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 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 or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Securities and Exchange Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

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(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 (1)(i) and (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 Securities and Exchange 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 the purpose of determining any 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 offered therein, and the offering of the securities at that time shall be deemed to be the initial bona fide offering thereof.

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

(4) 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 section 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.

(5) That: (i) for purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act of 1933 shall be deemed to be part of the registration statement as of the time it was declared effective; and (ii) for the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus 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 of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, 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 of 1933 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 a 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 of 1933 and will be governed by the final adjudication of such issue.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Memphis, State of Tennessee, on August 4, 2005.

GTx, Inc.

By: /s/ Mitchell S. Steiner  
Mitchell S. Steiner, M.D., F.A.C.S.  
*Chief Executive Officer*

## POWER OF ATTORNEY

**KNOW ALL PERSONS BY THESE PRESENTS**, that each person whose signature appears below constitutes and appoints Mitchell S. Steiner, Marc S. Hanover, Henry P. Doggrell and Mark E. Mosteller, and each of them, as true and lawful attorneys-in-fact and agents, with full powers of substitution and resubstitution, for them and in their name, place and stead, in any and all capacities, to sign any and all amendments (including pre-effective and post-effective amendments) to this registration statement and any additional registration statements filed pursuant to Rule 462, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission (the "SEC"), and generally to do all such things in their names and behalf in their capacities as officers and directors to enable GTx to comply with the provisions of the Securities Act of 1933 and all requirements of the SEC, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his or her substitutes or substitute, 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 below by the following persons in the capacities and on the dates indicated.

<u>Signatures</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Mitchell S. Steiner</u> Mitchell S. Steiner	Chief Executive Officer, Vice-Chairman and Director (Principal Executive Officer)	August 4, 2005
<u>/s/ Mark E. Mosteller</u> Mark E. Mosteller	Chief Financial Officer (Principal Financial and Accounting Officer)	August 4, 2005
<u>/s/ J.R. Hyde, III</u> J.R. Hyde, III	Chairman of the Board of Directors	August 4, 2005
<u>/s/ Marc S. Hanover</u> Marc S. Hanover	Chief Operating Officer and Director	August 4, 2005
<u>/s/ Andrew M. Clarkson</u> Andrew M. Clarkson	Director	August 4, 2005
<u>/s/ J. Kenneth Glass</u> J. Kenneth Glass	Director	August 4, 2005
<u>/s/ Robert Karr</u> Robert Karr	Director	August 4, 2005
<u>/s/ Rosemary Mazanet</u> Rosemary Mazanet, M.D., Ph.D.	Director	August 4, 2005
<u>/s/ John H. Pontius</u> John H. Pontius	Director	August 4, 2005
<u>/s/ Timothy R. G. Sear</u> Timothy R. G. Sear	Director	August 4, 2005

**INDEX TO EXHIBITS**

<b>Exhibit Number</b>	<b>Description of Document</b>
1.1	Form of Underwriting Agreement.(1)
4.1	Amended and Restated Certificate of Incorporation of the Company.
4.2	Amended and Restated Bylaws of the Company.(2)
4.3	Specimen Common Stock Certificate.(2)
5.1	Opinion of Cooley Godward LLP.
23.1	Consent of Ernst & Young LLP, independent registered public accounting firm.
23.2	Consent of Cooley Godward LLP (included in Exhibit 5.1).
24.1	Power of Attorney (included in the signature page).

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(1) To be filed by amendment or as an exhibit to a current report of the registrant on Form 8-K and incorporated herein by reference.

(2) Filed as an exhibit to the registrant's registration statement on Form S-1 or amendments thereto (File No. 333-109700), originally filed with the Securities and Exchange Commission on October 15, 2003, as amended, and incorporated herein by reference.



RESTATED  
CERTIFICATE OF INCORPORATION  
OF  
GTX, INC.

GTX, INC., a corporation organized and existing under the General Corporation Law of the State of Delaware (the "Corporation"), does hereby certify as follows:

FIRST: The name of the Corporation is GTX, Inc.

SECOND: The original Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on September 4, 2003.

THIRD: At a meeting of the Board of Directors of the Corporation a resolution was duly adopted pursuant to Sections 242 and 245 of the General Corporation Law of the State of Delaware, setting forth this Restated Certificate of Incorporation and declaring this Restated Certificate of Incorporation to be advisable. The stockholders of the Corporation duly approved and adopted this Restated Certificate of Incorporation by unanimous written consent in accordance with Section 228, 242 and 245 of the General Corporation Law of the State of Delaware.

FOURTH: The Certificate of Incorporation of this Corporation is hereby amended and restated in its entirety to read as follows:

ARTICLE I

The name of the Corporation is GTX, Inc.

ARTICLE II

The address of the Corporation's registered office in the State of Delaware is:

2711 Centerville Road, Suite 400  
Wilmington, Delaware 19808  
County of New Castle

The name of its registered agent at such address is Prentice-Hall Corporation System, Inc.

ARTICLE III

The purpose of the Corporation is to engage in any lawful act or activity for which a corporation may be organized under the Delaware General Corporation Law ("DGCL").

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## ARTICLE IV

A. Authorized Stock. The total number of shares which the Corporation shall have authority to issue is sixty-five million (65,000,000), consisting of sixty million (60,000,000) shares of Common Stock, par value \$0.001 per share (the "Common Stock"), and five million (5,000,000) shares of Preferred Stock, par value \$0.001 per share (the "Preferred Stock").

B. Preferred Stock. The Preferred Stock may be issued from time to time in one or more series. The Board of Directors is hereby expressly authorized at any time and from time to time to provide for the issuance of all or any of the shares of the Preferred Stock in one or more series, and to fix the number of shares and to determine or alter for each such series, such voting powers, full or limited, or no voting powers, and such designation, preferences, and relative, participating, optional, or other rights and such qualifications, limitations, or restrictions thereof, as shall be stated and expressed in the resolution or resolutions adopted by the Board of Directors providing for the issuance of such shares to the fullest extent as may now or hereafter be permitted by the DGCL. The Board of Directors is also expressly authorized to increase or decrease the number of shares of any series subsequent to the issuance of shares of that series, but not below the number of shares of such series then outstanding. In case the number of shares of any series shall be decreased in accordance with the foregoing sentence, the shares constituting such decrease shall resume the status that they had prior to the adoption of the resolution originally fixing the number of shares of such series.

### C. Common Stock.

1. Voting Rights. Each outstanding share of Common Stock shall entitle the holder thereof to one vote on each matter properly submitted to the stockholders of the Corporation for their vote; provided, however, that, except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Certificate of Incorporation (which as used herein, shall mean the certificate of incorporation of the Corporation, as amended from time to time, including any certificate of designation filed with respect to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon by law or pursuant to this Certificate of Incorporation.

2. Dividends. Subject to the rights of the holders of any series of Preferred Stock then outstanding, the holders of shares of Common Stock shall be entitled to receive, when and if declared by the Board of Directors, out of the assets of the Corporations which are by law available therefor, dividends payable either in cash, in property or in shares of capital stock.

3. Dissolution, Liquidation or Winding Up. In the event of any dissolution, liquidation or winding up of the affairs of the Corporation, after distribution in full of the preferential amounts, if any, to be distributed to the holders of shares of any series of Preferred Stock then outstanding, the holders of Common Stock shall be entitled, unless otherwise provided by law or this Certificate of Incorporation, to receive all of the remaining assets of the Corporation of whatever kind available for distribution to stockholders ratably in proportion to the number of shares of Common Stock held by them respectively.

## ARTICLE V

A. Management of Business. The business and affairs of the Corporation shall be managed by or under the direction of its Board of Directors.

B. Number of Directors. The authorized number of directors of the Corporation shall be determined from time to time exclusively by resolution adopted by the affirmative vote of a majority of the authorized number of directors at any regular or special meeting of such Board of Directors, within any limits prescribed in the Bylaws of the Corporation.

C. Classes of Directors. Subject to the rights of the holders of any series of Preferred Stock to elect additional directors under specified circumstances, the directors shall be divided into three classes, as nearly equal in number as possible, designated as Class I, Class II and Class III, respectively. At the annual meeting of stockholders held in 2005, the term of office of the Class I directors shall expire and Class I directors shall be elected for a term ending on the date of the third annual meeting of stockholders following the annual meeting at which such director was elected. At the annual meeting of stockholders held in 2006, the term of office of the Class II directors shall expire and Class II directors shall be elected for a term ending on the date of the third annual meeting of stockholders following the annual meeting at which such director was elected. At the annual meeting of stockholders held in 2007, the term of office of the Class III directors shall expire and Class III directors shall be elected for a term ending on the date of the third annual meeting of stockholders following the annual meeting at which such director was elected. At each succeeding annual meeting of stockholders, directors shall be elected for a term ending on the date of the third annual meeting of stockholders following the annual meeting at which such director was elected to succeed the directors of the class whose terms expire at such annual meeting. If any newly created directorship may, consistently with the rule that the three classes shall be as nearly equal in number as possible, be allocated to more than one class, the Board of Directors shall allocate it to the available class whose term of office is due to expire at the earliest date following such allocation. Notwithstanding any provision of this section to the contrary, each director shall serve until his or her successor is duly elected and qualified or until his or her death, resignation, disqualification or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

D. Vacancies. Subject to the rights of the holders of any series of Preferred Stock then outstanding, any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other causes and any newly created directorships resulting from any increase in the number of directors, shall, unless the Board of Directors determines by resolution that any such vacancies or newly created directorships shall be filled by the stockholders, except as otherwise provided by law, be filled only by the affirmative vote of a majority of the directors then in office, even though less than a quorum of the Board of Directors, and not by the stockholders. Any director elected in accordance with the preceding sentence shall hold office for the remainder of the full term of the director for which the vacancy was created or occurred and until such director's successor shall have been elected and qualified or until his or her death, resignation, disqualification or removal.

E. Elections. The directors of the Corporation need not be elected by written ballot unless the Bylaws of the Corporation so provide.

## ARTICLE VI

A. Action by Stockholders. No action required or permitted to be taken by the stockholders of the Corporation shall be taken except at a duly called annual or special meeting of stockholders of the Corporation, and no action shall be taken by the stockholders by written consent.

B. Special Meetings of Stockholders. Special meetings of stockholders of the Corporation may be called only by the Chairman of the Board, the Chief Executive Officer or by the Board of Directors acting pursuant to a resolution adopted by a majority of the authorized number of directors, and any power of stockholders to call a special meeting is specifically denied. Only such business shall be considered at a special meeting of stockholders as shall have been stated in the notice for such meeting.

C. Advance Notice. Advance notice of stockholder nominations for the election of directors and of business to be brought by stockholders before any meeting of the stockholders of the Corporation shall be given in the manner provided in the Bylaws of the Corporation.

## ARTICLE VII

The Board of Directors is expressly empowered to adopt, amend or repeal the Bylaws of the Corporation. Any adoption, amendment or repeal of the Bylaws of the Corporation by the Board of Directors shall require the approval of a majority of the directors then in office. The stockholders shall also have power to adopt, amend or repeal the Bylaws of the Corporation; provided, however, that, in addition to any vote of the holders of any class or series of stock of the Company required by law or by this Restated Certificate of Incorporation, the affirmative vote of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the voting power of all of the then-outstanding shares of the capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required to adopt, amend or repeal any provision of the Bylaws of the Corporation.

## ARTICLE VIII

A. Limitation of Liability. Except to the extent that the DGCL prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty, no director of the Corporation shall be liable to the Corporation or its stockholders for monetary damages for breach of his or her fiduciary duty as director. If the DGCL or any other statute of the State of Delaware hereafter is amended to authorize the further elimination or limitation of the liability of directors of the Corporation, then the liability of a director of the Corporation shall be limited to the fullest extent permitted by the statutes of the State of Delaware, as so amended, and such elimination or limitation of liability shall be in addition to, and not in lieu of, the limitation on the liability of a director provided by the foregoing provisions of this Article VIII.

B. Indemnification. The Corporation shall indemnify each person who is or was a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, by reason of the fact that the person is or was a director, officer, employee or agent of the Corporation, or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation or of a partnership, joint venture, trust or other enterprise, from and against all expense, liability and loss (including, without limitation, attorney's fees, judgments, fines, penalties and amounts paid in settlement) actually and reasonably incurred or suffered by such person in connection with such action, suit or proceeding, to the fullest extent permitted under the DGCL, as it exists on the date hereof or as it may hereafter be amended; provided, however, that, except with respect to proceedings to enforce rights to indemnification, the Corporation shall not be required to indemnify any such person seeking indemnification in connection with an action, suit or proceeding (or part thereof) initiated by such person unless such action, suit or proceeding (or part thereof) was authorized by the Board of Directors.

C. Repeal and Modification. Any repeal or modification of the foregoing provisions of this Article VIII shall not affect adversely any right or protection of any director, officer, employee or agent of the Corporation existing at the time of such repeal or modification.

#### ARTICLE IX

A. Reservation of Rights. The Company reserves the right to amend, alter, change or repeal any provision contained in this Certificate of Incorporation, in the manner now or hereafter prescribed by statute, except as provided in section B of this Article IX, and all rights conferred upon the stockholders herein are granted subject to this reservation.

B. Requisite Vote. Notwithstanding any other provisions of this Certificate of Incorporation or any provision of law which might otherwise permit a lesser vote or no vote, but in addition to any affirmative vote of the holders of any particular class or series of the voting stock of the Company required by law, this Certificate of Incorporation or any certificate of designation of Preferred Stock, the affirmative vote of the holders of at least sixty-six and two-thirds percent (66 2/3%) of the voting power of all of the then-outstanding shares of the capital stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required to alter, amend or repeal Articles V, VI, VII, VIII and IX of this Certificate of Incorporation.

IN WITNESS WHEREOF, this Restated Certificate of Incorporation, which restates, integrates and amends the certificate of incorporation of the Corporation, and which has been duly adopted in accordance with Sections 228, 242 and 245 of the Delaware General Corporation Law, has been executed on behalf of GTx, Inc. by the undersigned officer, thereunto duly authorized, this 6th day of February, 2004.

GTx, Inc.

By: /s/ Henry P. Doggrell

Henry P. Doggrell  
Secretary

**Cooley Godward LLP**

ATTORNEYS AT LAW

Five Palo Alto Square  
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703 456-8000  
San Diego, CA  
858 550-6000  
San Francisco, CA  
415 693-2000

August 4, 2005

GTx, Inc.  
3 N. Dunlap Street  
Van Vleet Building  
Memphis, Tennessee 38163www.cooley.com  
SUZANNE SAWOCHKA HOOPER  
(650) 843-5180  
hooperss@cooley.com

Ladies and Gentlemen:

We have acted as counsel to GTx, Inc., a Delaware corporation (the "Company"), in connection with the Registration Statement on Form S-3 (the "Registration Statement") under the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration of the Company's common stock, par value \$0.001 per share ("Common Stock"). The aggregate public offering price of the Common Stock being registered is \$100,000,000 (the "Shares"). The Shares are being registered for offering and sale from time to time pursuant to Rule 415 of the General Rules and Regulations promulgated under the Securities Act (the "Securities Act Rules").

In connection with this opinion, we have examined and relied upon the originals, or copies certified to our satisfaction, of such records, documents, certificates, opinions, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. As to certain factual matters, we have relied upon certificates of the officers of the Company and have not sought to independently verify such matters.

In rendering this opinion, we have assumed the genuineness and authenticity of all signatures on original documents; the authenticity of all documents submitted to us as originals; the conformity to originals of all documents submitted to us as copies; the accuracy, completeness and authenticity of certificates of public officials; and the due authorization, execution and delivery of all documents where authorization, execution and delivery are prerequisites to the effectiveness of such documents. We have also assumed that, at the time of issuance and sale, a sufficient number of shares of Common Stock is authorized and reserved or available for issuance and that the consideration for the issuance and sale of such shares of Common Stock is not less than the par value of the Common Stock, and that, prior to any offering and sale of the Shares, the Company's board of directors (the "Board"), including any appropriate committee appointed thereby, will duly authorize the terms of and the prices at which the Shares are to be issued and sold.

Our opinion herein is expressed solely with respect to the Delaware General Corporation Law. We express no opinion as to whether the laws of any jurisdiction are applicable to the subject matter hereof. We are not rendering any opinion as to compliance with any federal or state antifraud law, rule or regulation relating to securities, or to the sale or issuance thereof.

On the basis of the foregoing and in reliance thereon, and subject to the qualifications herein stated, we are of the opinion that, with respect to any offering of the Shares, when (i) the

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# Cooley Godward LLP

GTx, Inc.  
August 4, 2005  
Page Two

Registration Statement, as finally amended, has become effective; (ii) an appropriate prospectus supplement with respect to the Shares has been prepared, filed and delivered in compliance with the Securities Act and the applicable Securities Act Rules; (iii) if the Shares are to be sold pursuant to a purchase, underwriting or similar agreement, such purchase, underwriting or similar agreement has been duly authorized, executed and delivered by the Company and the other parties thereto and has become a valid and binding agreement of the Company; (iv) the Board, including any appropriate committee appointed thereby, and appropriate officers of the Company have taken all necessary corporate action to approve the issuance and sale of the Shares and related matters; and (v) the issuance and sale of the Shares does not violate any applicable law and complies with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company, then the Shares, when issued and sold, against payment therefor, in accordance with a duly authorized, executed and delivered purchase, underwriting or similar agreement, will be duly authorized, validly issued, fully paid and nonassessable.

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

Sincerely,

COOLEY GODWARD LLP

/s/ Suzanne Sawochka Hooper

By: Suzanne Sawochka Hooper



Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in the Registration Statement and related Prospectus of GTx, Inc. for the registration of \$100,000,000 of its common stock and to the incorporation by reference therein of our report dated February 11, 2005, with respect to the financial statements and schedules of GTx, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2004, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Memphis, Tennessee  
August 3, 2005