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

**FORM 10-K/A
Amendment No. 2**

**FOR ANNUAL AND TRANSITION REPORTS
PURSUANT TO SECTION 13 OR 15(D) OF THE
SECURITIES EXCHANGE ACT OF 1934**

(Mark One)

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES
EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2004

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ to _____

Commission file number 000-50549

GTx, Inc.

(Exact name of registrant as specified in its charter)

Delaware
*(State or Jurisdiction of
Incorporation or organization)*

62-1715807
*(I.R.S. Employer
Identification Number)*

**3 N. Dunlap Street
Van Vleet Building
Memphis, Tennessee 38163**
(Address and zip code of principal executive offices)

Registrant's telephone number, including area code: (901) 523-9700
Securities registered pursuant to Section 12(b) of the Act: None
Securities registered pursuant to Section 12(g) of the Act:
Common Stock, \$0.001 Par Value
(Title of Class)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

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

Indicate by check mark whether registrant is an accelerated filer (as defined in Exchange Act Rule 12b-2). Yes No

Based on the closing sale price of common stock on the Nasdaq National Market on June 30, 2005, the aggregate market value of the voting stock held by non-affiliates of the registrant was \$75,667,037.

The number of shares outstanding of registrant's common stock, \$0.001 par value was 24,664,716 at July 25, 2005.

DOCUMENTS INCORPORATED BY REFERENCE

None.

EXPLANATORY NOTE

GTx, Inc. (the “Company”) is filing this Amendment No. 2 (the “Amendment”) to its Annual Report on Form 10-K for the fiscal year ended December 31, 2004, as filed with the Securities and Exchange Commission on March 24, 2005, as amended, to amend and restate the Exhibit Index in Item 15 to include a footnote to the documents listed as Exhibits 10.25 and 10.26, so as to incorporate those documents by reference to a previously filed Current Report on Form 8-K/A. In addition, the Company is refiling Exhibits 31.1 and 31.2, as required by the filing of this amendment. This Amendment, together with the Annual Report on Form 10-K of the Company previously filed for the year ended December 31, 2004, as amended, constitutes the Annual Report on Form 10-K of the Company for the year ended December 31, 2004.

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ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

SIGNATURES

Exhibit Index

EXHIBIT 24.1

EXHIBIT 31.1

EXHIBIT 31.2

[Table of Contents](#)**ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES**

(b) Exhibits

<u>Number</u>	<u>Description</u>
3.1	Restated Certificate of Incorporation of GTx, Inc. filed February 6, 2004, as amended (1)
3.2	Amended and Restated Bylaws of GTx, Inc. (1)
4.1	Reference is made to Exhibits 3.1 and 3.2
4.2	Specimen of Common Stock Certificate (1)
4.3	Amended and Restated Registration Rights Agreement between Registrant and Oracle Partners, L.P. dated August 7, 2003 (1)
4.4	Amended and Restated Registration Rights Agreement between Registrant and J. R. Hyde, III dated August 7, 2003 (1)
4.5	Amended and Restated Registration Rights Agreement between Registrant and Memphis Biomed Ventures dated August 7, 2003 (1)
10.1	Genotherapeutics, Inc. 1999 Stock Option Plan (1)
10.2	GTx, Inc. 2000 Stock Option Plan (1)
10.3	GTx, Inc. 2001 Stock Option Plan (1)
10.4	GTx, Inc. 2002 Stock Option Plan (1)
10.5	2004 Equity Incentive Plan and Form of Stock Option Agreement (1)
10.6	2004 Non-Employee Directors' Stock Option Plan and Form of Stock Option Agreement (1)
10.7	Reserved
10.8	Employment Agreement dated October 1, 2003, between Registrant and Mitchell S. Steiner, M.D. (1)
10.9	Employment Agreement dated October 1, 2003, between Registrant and Marc S. Hanover (1)
10.10	Employment Agreement dated October 1, 2003, between Registrant and Mark E. Mosteller (1)
10.11	Employment Agreement dated October 1, 2003, between Registrant and Henry P. Doggrell (1)
10.12	Form of Indemnification Agreement (1)
10.13	Lease Agreement, dated March 7, 2001, between The University of Tennessee and TriStar Enterprises, Inc. (1)
10.14	Sublease Agreement dated October 1, 2000, as amended, between Registrant and TriStar Enterprises, Inc. (1)
10.15†	Amended and Restated License and Supply Agreement dated October 22, 2001, between Registrant and Orion Corporation (1)
10.16†	Amendment No. 1 to the License and Supply Agreement dated March 5, 2003, between Registrant and Orion Corporation (1)
10.17†	Production and Manufacturing Agreement dated September 9, 2002, between Registrant and ChemSyn Laboratories (Department of EaglePicher Technologies, LLC) (1)
10.18†	Amendment No. 1 to the Production and Manufacturing Agreement dated September 30, 2003, between Registrant and ChemSyn Laboratories (Department of EaglePicher Technologies, LLC) (1)
10.19†	Quotation Agreement dated August 8, 2003 between Registrant and EaglePicher Pharmaceutical Services (1)
10.20†	Amended and Restated Exclusive License Agreement dated June 3, 2002, between Registrant and University of Tennessee Research Foundation (1)
10.21†	Amended and Restated Exclusive License Agreement dated June 14, 2003, between Registrant and University of Tennessee Research Foundation (1)
10.22†	Amended and Restated Exclusive License Agreement dated August 30, 2003, between Registrant and University of Tennessee Research Foundation (1)
10.23	Amendment No. 2 to the License and Supply Agreement dated December 29, 2003, between Registrant and Orion Corporation (1)

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10.24†	Joint Collaboration and License Agreement dated March 16, 2005, between Registrant and Ortho Biotech, L.P. (3)
10.25†	Purchase Agreement dated December 13, 2004, between Registrant and Orion Corporation (4)
10.26†	Amended and Restated License and Supply Agreement effective January 1, 2005, between Registrant and Orion Corporation (4)
14.1	Code of Ethics (2)
13.1*	Annual Report to Shareholders
23.1*	Consent of Ernst & Young LLP
24.1	Power of Attorney
31.1	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2*	Certification of Chief Financial Officer Pursuant to 18. U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

† Confidential treatment requested. The redacted portions have been filed separately with the SEC as required by Rule 406 of Regulation C.

* Previously filed.

- (1) Incorporated by reference to the same exhibit filed with GTX's Registration Statement on Form S-1 (File No. 333-109700).
 - (2) Incorporated by reference to the same exhibit filed with GTX's Annual Report on Form 10-K for the year ended December 31, 2003.
 - (3) Incorporated by reference to the same exhibit filed with GTX's Form 10-Q for the period ended March 31, 2004, filed on May 7, 2004.
 - (4) Incorporated by reference to Exhibits 10.1 and 10.2 filed with GTX's Current Report on Form 8-K/A, filed on March 7, 2005.
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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this Report to be signed on its behalf by the undersigned, thereunto duly authorized.

GTx, INC.

By: /s/ MARK MOSTELLER

Mark Mosteller

Vice President and Chief Financial Officer

Date: July 27, 2005

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POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENT, that each person whose signature appears below constitutes and appoints Mitchell S. Steiner and Mark E. Mosteller, and each or any one of them, his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to the Annual Report on Form 10-K of GTX, Inc., and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, 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 might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Signatures	Title	Date
/s/ Mitchell S. Steiner _____ Mitchell S. Steiner	Chief Executive Officer, Vice-Chairman and Director (Principal Executive Officer)	July 27, 2005
/s/ Mark E. Mosteller _____ Mark E. Mosteller	Chief Financial Officer (Principal Financial and Accounting Officer)	July 27, 2005
/s/ J.R. Hyde, III _____ J.R. Hyde, III	Chairman of the Board of Directors	July 27, 2005
/s/ Marc S. Hanover _____ Marc S. Hanover	Chief Operating Officer and Director	July 27, 2005
/s/ Andrew M. Clarkson _____ Andrew M. Clarkson	Director	July 27, 2005
/s/ J. Kenneth Glass _____ J. Kenneth Glass	Director	July 27, 2005
/s/ Robert Karr _____ Robert Karr	Director	July 27, 2005
/s/ Rosemary Mazanet, M.D., Ph.D. _____ Rosemary Mazanet, M.D., Ph.D.	Director	July 27, 2005
/s/ John H. Pontius _____ John H. Pontius	Director	July 27, 2005
/s/ Timothy R. G. Sear _____ Timothy R. G. Sear	Director	July 27, 2005

CERTIFICATION

I, Mitchell S. Steiner, certify that:

1. I have reviewed this Annual Report on Form 10-K of GTx, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 27, 2005

/s/ MITCHELL S. STEINER

Mitchell S. Steiner, M.D., F.A.C.S.

Chief Executive Officer and Vice-Chairman of the Board
of Directors

CERTIFICATION

I, Mark E. Mosteller, certify that:

1. I have reviewed this Annual Report on Form 10-K of GTx, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 27, 2005

/s/ MARK E. MOSTELLER

Mark E. Mosteller

Vice President and Chief Financial Officer