

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

SCHEDULE 13G

Under the Securities Exchange Act of 1934
(Amendment No.)*

GTx, Inc.

(Name of Issuer)

Common Stock, \$0.001 par value

(Title of Class of Securities)

40052B108

(CUSIP Number)

December 31, 2004

(Date of Event Which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

- Rule 13d-1 (b)
- Rule 13d-1 (c)
- Rule 13d-1 (d)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the notes).

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

1. Name of Reporting Person: Mitchell S. Steiner, M.D., F.A.C.S. I.R.S. Identification Nos. of above persons (entities only):

2. Check the Appropriate Box if a Member of a Group:
(a)
(b)

3. SEC Use Only:

4. Citizenship or Place of Organization:
United States of America

5. Sole Voting Power:
0

Number of
Shares
Beneficially
Owned by
Each
Reporting
Person With

6. Shared Voting Power:
5,662,147

7. Sole Dispositive Power:
0

8. Shared Dispositive Power:
5,662,147

9. Aggregate Amount Beneficially Owned by Each Reporting Person:
5,662,147

10. Check if the Aggregate Amount in Row (9) Excludes Certain Shares:

11. Percent of Class Represented by Amount in Row (9):
23.0%

12. Type of Reporting Person:
IN

Item 1(a). Name of Issuer: GTx, Inc.

Item 1(b). Address of Issuer's Principal Executive Offices: 3 N. Dunlap Street
Van Vleet Building
Memphis, TN 38163

Item 2(a). Name of Person Filing: Mitchell S. Steiner, M.D., F.A.C.S.

Item 2(b). Address of Principal Business Office or, if none, Residence: 3 N. Dunlap Street
Memphis, TN 38163

Item 2(c). Organization/Citizenship: United States of America
Title of Class

Item 2(d). Of Securities: Common Stock, \$0.001 par value

Item 2(e). CUSIP Number: 40052B108

Item 3. Inapplicable.

Item 4. Ownership.

<u>Person</u>	<u>Total Shares of Common Stock Beneficially Owned</u>	<u>Percent of Class(1)</u>	<u>Sole Voting Power</u>	<u>Shared Voting Power</u>	<u>Sole Power to Dispose</u>	<u>Shared Power to Dispose</u>
Mitchell S. Steiner, M.D., F.A.C.S.	5,662,147	23.0%	0	5,662,147	0	5,662,147

(1) Based on 24,664,716 shares of Common Stock outstanding as of February 28, 2005.

- Item 5. Ownership of Five Percent or Less of a Class.
Inapplicable
- Item 6. Ownership of More than Five Percent on Behalf of Another Person.
Inapplicable
- Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company.
Inapplicable
- Item 8. Identification and Classification of Members of the Group.
Inapplicable
- Item 9. Notice of Dissolution of Group.
Inapplicable
- Item 10. Certification.

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

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13G

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SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

4/8/05

Date

/s/ Mitchell S. Steiner, M.D.

(Signature)

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

Chief Executive Officer and Vice Chairman of the Board of
Directors of GTx, Inc.