



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

DIVISION OF
CORPORATION FINANCE

December 15, 2010

Mitchell S. Steiner
Chief Executive Officer, Vice Chairman and Director
GTx, Inc.
175 Toyota Plaza, 7th Floor
Memphis, Tennessee 38103

**Re: GTx, Inc.
Form 10-K
Filed March 15, 2010
File No. 000-50549**

Dear Mr. Steiner:

We have reviewed your filing and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Form 10-K, filed March 15, 2010

Licenses and Collaborative Relationships, page 14

1. You disclose that you have upfront and milestone payments, annual license fees and/or royalty payments in connection with your license and supply agreement with Orion and your license agreements with UTRF. Although you have been granted confidential treatment for certain provisions of these agreements, the material terms of these agreements should be disclosed in your filing. Please provide draft disclosure to be included in your 2010 Form 10-K describing the material terms of each agreement, including, but not limited to the aggregate payments to date, a range of royalty rates not to exceed ten percent and the remaining aggregate milestone payments.

Intellectual Property, page 19

2. We note that with respect to the method of use of toremifene 80 mg and the method of use of toremifene 20 mg outside of the United States, you have some patents issued and other pending patent applications. Please provide draft disclosure to be included in your 2010 Form 10-K stating the foreign countries where these patents are issued and where other patent applications are pending and the expiration dates of the issued foreign patents in regard to each product.
3. We note that for Ostarine and your other SARMs, you have an exclusive license from UTRF for two sets of its issued patents and pending patent applications in the United States and internationally. Please provide draft disclosure to be included in your 2010 Form 10-K stating the expiration dates for the United States and foreign patents and the countries in which the foreign patents have been issued or patent applications are pending.

Proxy Statement on Schedule 14A, filed March 18, 2010

4. We note that you have not included any disclosure in response to Item 402(s) of Regulation S-K. Please advise us of the basis for your conclusion that disclosure is not necessary and describe the process you undertook to reach that conclusion.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Exchange Act of 1934 and all applicable Exchange Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

In responding to our comments, please provide a written statement from the company acknowledging that:

- the company is responsible for the adequacy and accuracy of the disclosure in the filing;
- staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

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Please contact Johnny Gharib at (202) 551-3170 or Jennifer Riegel at (202) 551-3575 with any questions.

Sincerely,

Jeffrey Riedler
Assistant Director