August 8, 2006

Mr. Jim B. Rosenberg Senior Assistant Chief Accountant United States Securities and Exchange Commission 100 F Street, NE Washington, D.C. 20549

Re: GTx, Inc. Form 10-K for the Fiscal Year Ended December 31, 2005 File No. 000-50549

Dear Mr. Rosenberg:

We received your letter dated June 27, 2006, attached as Exhibit A for your reference. This letter amends our letter to you dated July 21, 2006. Please find below GTx, Inc.'s responses to your comments.

Form 10-K for the Fiscal Year Ended December 31, 2005

Management's Discussion and Analysis of Financial Condition and Results of Operations

Critical Accounting Policies, page 48

1. We acknowledge your revenue recognition policy as noted herein and within your "Summary of Significant Accounting Policies" in the accompanying notes to your consolidated financial statements. We believe that your disclosure related to your rebate and sales returns accruals could be defined and improved. Please provide us with the information that follows in a disclosure-type format.

COMMENT:

a) Tell us how you estimate sales returns and recognize revenue according to the provisions of SFAS No. 48, given your absence of historical experience, which would seem to preclude your ability to estimate future returns under paragraphs 6/8 of SFAS No. 48. Please also clarify, in a disclosure-type format, your accounting policy for rebates in relation to EITF No. 01-9, particularly paragraph 9.

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RESPONSE:

a) On January 1, 2005, GTx, Inc., "GTx" or "the Company", obtained the rights to market and distribute FARESTON from Shire Corporation. FARESTON was first sold in the United States in 1997 by Schering Plough who sold the distribution rights to Roberts Pharmaceuticals in 1999. Roberts was later merged into Shire Corporation. Shire distributed FARESTON for approximately six years. GTx performed due diligence procedures at Shire Corporation prior to obtaining the rights to distribute FARESTON. The due diligence procedures included obtaining an understanding of Shire's marketing, distribution, and pricing practices, including rebates and discounts. The majority of the distribution of FARESTON, while Shire distributed the product as well as currently as GTx distributes the product, is conducted by three large wholesale distributors. These three distributors accounted for 94% of gross FARESTON sales for GTx in 2005. GTx entered into distribution agreements with the three largest Shire FARESTON distributors and several others. GTx continued the same distribution network and marketing activities.

During its due diligence procedures, the Company examined FARESTON product sales and product returns data for a twenty-one month period through September 2004. This information illustrated that product returns over the twenty-one month period represented approximately nine percent of product sales for the same period. As the Company uses the same wholesale distributors, the same distribution channels and the same marketing activities as did Shire, the Company believes that the trend of FARESTON product returns experienced by Shire will be consistent with FARESTON product returns that it expects in the future. Based on the number of years Shire distributed FARESTON, the Company believes this historical information provides it with the ability to make a reasonable estimate of the amount of future returns as required by paragraph 8 of SFAS No. 48. In addition to utilizing the nine percent historical FARESTON product return percentage to estimate its product returns as necessary. In addition, the Company utilizes inventory and customer sales information obtained from its three largest distributors in order to estimate the number of months of FARESTON inventory on hand which it uses in making its estimate of future product returns.

The Company sells FARESTON and gives its customers the right to return the product in accordance with its product return policy. The Company recognizes revenue from the sale of FARESTON in accordance with paragraph six and eight of SFAS No. 48 at the time of sale only if all of the following conditions are met:

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a. The seller's price to the buyer is substantially fixed or determinable at the date of sale. (The sales price of FARESTON is fixed and is communicated to all customers by way of a published price list for 30 count and 100 count bottles).

b. The buyer has paid the seller, or the buyer is obligated to pay the seller and the obligation is not contingent on resale of the product. (No sales of FARESTON are contingent upon the customer's ultimate sale of the product).

c. The buyer's obligation to the seller would not be changed in the event of theft or physical destruction or damage of the product. (Theft or physical loss of FARESTON does not relieve the customer of its obligation to GTx for the sales price).

d. The buyer acquiring the product for resale has economic substance apart from that provided by the seller. (The Company's three largest wholesale distributors which account for 94% of FARESTON product sales have substantial economic substance which is not materially impacted by revenues derived from the sale of FARESTON).

e. The seller does not have significant obligations for future performance to directly bring about resale of the product by the buyer. (GTx has no future performance obligation directly to bring about the resale of FARESTON).

f. The amount of future returns can be reasonably estimated depending on many factors and circumstances that will vary from one case to the next, but including, the following factors which may impair the ability to make a reasonable estimate:

1. The susceptibility of the product to significant external factors, such as technological obsolescence or changes in demand. (FARESTON is not immediately susceptible to obsolescence or significant unforeseen changes in demand due to its low market share).

2. Relatively long periods in which a particular product may be returned. (Under GTx's current returned goods policy, which is consistent with industry standards, FARESTON can be returned to the Company within 180 days of the expiration of the product and 180 days after the expiration of the product).

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3. Absence of historical experience with similar types of sales of similar products, or inability to apply such experience because of changing circumstances, for example, changes in the selling enterprise's marketing policies or relationships with its customers. (As GTx has retained the same customers, distribution channel and marketing activities as Shire, it believes that the historical product return data gives it a reasonable basis for estimating future product returns).

4. Absence of a large volume of relatively homogeneous transactions. (FARESTON product sales represent a large volume of homogeneous transactions).

According to EITF No. 01-9, paragraph 9, sales incentives given to customers should be characterized as a reduction of revenue.

The Company accounts for rebates to certain governmental agencies as a reduction of revenue.

In future filings beginning with its Form 10-Q for the quarter ended June 30, 2006, the Company will revise its revenue recognition policy disclosure to enhance the description of its accounting policy for rebates and returns (please refer to our response in Comment b).

COMMENT:

b) Expand your disclosure of the factors that you consider in estimating your sales returns accrual. Specifically, please address how you consider factors such as levels of FARESTON inventory in your distribution channels and FARESTON's estimated remaining product shelf life, particularly since you disclose that you accept product returns "near their expiration date."

RESPONSE:

b) In addition to assessing actual and historical product returns in estimating its accrual for product returns, the Company considers the amount of product in the distribution channel and the remaining months of product dating. The Company's current return policy states that customers may return product with up to 180 days of effective dating remaining and for a period of up to 180 days after the expiration of the product. The Company obtains certain data from various sources including from its three largest wholesale distributors who accounted for 94% of its FARESTON product sales in 2005, which includes FARESTON inventory levels

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and FARESTON sales by the distributors, and end-customer demand data (IMS consumption data).

The Company utilizes this data to estimate the remaining number of months of FARESTON product in the distribution channel and the remaining number of months of effective dating of the FARESTON product in the distribution channel. In the event that a certain amount of FARESTON product in a distributor's inventory exceeds the amount that is forecasted to be sold prior to the product expiring, the Company considers the potential product return in estimating its product return accrual.

In future filings beginning with its Form 10-Q for the quarter ended June 30, 2006, the Company will expand its financial statement footnote and critical accounting policy disclosures in a manner substantially consistent with the following:

Critical Accounting Policies

Revenue Recognition

We recognize net product sales revenue from the sale of FARESTON less deductions for estimated sales discounts and sales returns. We recognize revenue from product sales when the goods are shipped and title and risk of loss pass to the customer and the other criteria of SAB 104 and FAS 48 are satisfied. We account for rebates to certain governmental agencies as a reduction of revenue. We allow customers to return product within a specified period prior to and subsequent to the expiration date. We estimate our accrual for product returns based on factors which include historical product returns and estimated product in the distribution channel which is estimated to exceed its expiration date. At March 31, 2006 and December 31, 2005, the Company's accrual for product returns was \$368,000 and \$274,000, respectively. If actual future results are different than our estimates, we may need to adjust our estimated accrual for product returns, which could have an effect on earnings in the period of the adjustment.

COMMENT:

c) To the extent that the information you consider in b. is quantifiable, disclose both quantitative and qualitative factors and discuss the extent of availability and your use of information from external sources; for example, end-customer demand data compared to inventory levels. In discussing your estimate of product returns, consider disclosing the total amount of FARESTON in sales dollars that you believe could potentially be returned as of the most recent balance sheet date, disaggregated by expiration period, if any.

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RESPONSE:

c) Please see also response to Comment b above. The Company estimates the number of months of inventory in the distribution channel for its three largest wholesale distributors based on inventory levels and sales data provided by the distributors. Based on the number of months of inventory on hand, the Company estimates whether the product on hand at the distributor has a sufficient number of remaining months of effective dating in order to be consumed prior to the expiration date of the product. The FARESTON product has 36 months of effective dating from the time of manufacturing. The manufacturing, packaging and shipping process on average consumes six months of effective dating. Therefore, the FARESTON product has on average 30 months of effective dating at the time it arrives at the GTx warehouse. The Company estimates the number of months of remaining effective dating based upon the month the product is shipped to the distributor. At the time the Company acquired the rights to FARESTON on January 1, 2005, it also acquired and repackaged the remaining inventory of FARESTON from Shire. Therefore, the initial product shipped to distributors by GTx had approximately fifteen months of remaining effective dating. The Company took into consideration the remaining effective dating of the FARESTON product acquired from Shire in estimating its accrual for sales returns.

At March 31, 2006 and December 31, 2005, the Company's accrual for product return was \$368,000 and \$274,000, respectively.

COMMENT:

d) If applicable, discuss any shipments made as a result of incentives and/or in excess of your wholesalers' inventory levels in the ordinary course of business, in particular as they pertain to your rebate accruals, which are inherently affected by the underlying product sales volumes and growth. Please also discuss your revenue recognition policy for such shipments.

RESPONSE:

d) Shipments of FARESTON by GTx have not historically been influenced by incentives and/or been in excess of our wholesale distributors' inventory levels in the ordinary course of business. The Company has not provided any specific sales incentives to its wholesale distributors. It is the Company's policy to review increases in sales volume in connection with product price increases to determine if customers are purchasing more inventory than they can reasonably sell in the ordinary course of business prior to the expiration of the product, based on historical data. An estimated sales return allowance and reduction of revenue would be recorded for any sales, which the Company estimates, may be returned due to overstocking. The Company's revenue recognition policy requires that accruals for rebates, discounts, and product returns be recorded as a reduction of product revenues.

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COMMENT:

e) For the year ended December 31, 2005 and separately for the quarter ended March 31, 2006, provide a roll-forward of each accrual that includes the following:

- beginning balance;
- current estimate related to sales made in current period;
- current estimate related to sales made in prior periods (this item will not be applicable for the year ended December 31, 2005);
- actual returns or credits in current period related to sales made in current period;
- actual returns or credits in current period related to sales made in prior periods (this item will not be applicable for the year ended December 31, 2005); and
- ending balance

RESPONSE:

e) The Company did not expect significant FARESTON product returns during 2005 and the first quarter of 2006 as a result of the expiration dates of the product sold during those periods. The actual product returns received were in line with the Company's expectations. The Company does expect FARESTON product returns in future periods as any unsold product in the distribution channel approaches its expiration date. The Company's only significant contra revenue account is product returns. The following tables provide a roll-forward of the product returns accrual for the specified periods.

For the year ended December 31, 2005:

Beginning balance	\$ 0
Current estimate related to sales made in current period	276,258
Current estimate related to sales made in prior period	0
Actual returns or credits in current period related to sales made in current period	2,457
Actual returns or credits in current period related to sales made in prior period	0
Ending balance	\$273,801

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For the quarter ended March 31, 2006:

Beginning balance	\$273,801
Current estimate related to sales made in current period	98,155
Current estimate related to sales made in current period	50,155
Actual returns or credits in current period related to sales made in current period	0
Actual returns or credits in current period related to sales made in current period	4.076
	4,076
Ending balance	\$367,880

In connection with responses to your comments, the Company acknowledges 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.

We hope the responses provided above will be sufficient to address the comments outlined in your letter of June 27, 2006. Please let us know if you require any additional information.

Best regards,

/s/ Mark E. Mosteller Mark E. Mosteller Vice President and Chief Financial Officer

MEM/jf