



DIVISION OF
CORPORATION FINANCE

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

Mail Stop 3030

May 17, 2017

Via E-mail

Amir Avniel
Chief Executive Officer
AIT Therapeutics, Inc.
2 Ilan Ramon, Science Park
Ness Ziona, 7403635 Israel

**Re: AIT Therapeutics, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed May 2, 2017
File No. 333-216287**

Dear Mr. Avniel:

We have reviewed your amended registration statement 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 by amending your registration statement and providing the requested information. 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 registration statement and the information you provide in response to these comments, we may have additional comments. Unless we note otherwise, our references to prior comments are to comments in our March 23, 2017 letter.

Business Overview, page 4

1. We note your response to prior comment 5; however, it appears you are still referring to your clinical trials as testing the "safety" or the "safety and efficacy" of your product. Please revise to limit your disclosure to the actual results of your studies.

Competition, page 5

2. We note your response to prior comment 7; however, it appears that if the FDA approves your competitor's product candidate then it would be eligible for orphan drug exclusivity. Therefore, your disclosure that it "may" be eligible appears unclear. Please revise or advise.

If we fail to comply with our obligations..., page 32

3. We note your response to prior comment 12. Please disclose here how the dates to complete the milestones compare with your timeline to commence the events disclosed on page 68 and discuss any known challenges to complete the milestones by the required time.

Security Ownership and Certain Beneficial Owners and Management, page 84

4. We note your response to prior comment 27; however, it appears that your disclosure in footnote 8 on page 84 of the number of shares underlying warrants for Mr. Grossman remains inconsistent with footnote 10 on page 86. Please revise.

Certain Relationships and Related Transactions, page 97

5. We note your response to prior comments 20 and 32; however, the timeframe and threshold amount you are applying in your analysis appear to be inconsistent with Item 404(d) and Instruction 1 to Item 404 of Regulation S-K. Please revise.

Director Independence, page 97

6. Please expand your response to prior comment 33 to clarify how you determined your conclusions regarding Mr. Bentsur, given Section 5 of Exhibit 10.14.

You may contact Andri Carpenter at (202) 551-3645 or Gary Todd, Senior Accountant, at (202) 551-3605 if you have questions regarding comments on the financial statements and related matters. Please contact Heather Percival at (202) 551-3498 or Geoff Kruczek, Special Counsel, at (202) 551-3641 with any other questions.

Sincerely,

/s/ Geoff Kruczek for

Amanda Ravitz
Assistant Director
Office of Electronics and Machinery

cc: Drew M. Altman, Esq.
Greenberg Traurig, P.A.