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

DIVISION OF
CORPORATION FINANCE

August 12, 2015

Mail Stop 4546

Via Email
Annalisa Jenkins, M.B.B.S., M.R.C.P.
President and Chief Executive Officer
Dimension Therapeutics, Inc.
840 Memorial Drive
Cambridge, MA 02139

**Re: Dimension Therapeutics, Inc.**
**Draft Registration Statement on Form S-1**
**Submitted July 17, 2015**
**CIK No. 0001592288**

Dear Dr. Jenkins:

We have reviewed your draft 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 providing the requested information and either submitting an amended draft registration statement or publicly filing your registration statement on EDGAR. 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 the information you provide in response to these comments and your amended draft registration statement or filed registration statement, we may have additional comments.

General

1 Please note that when you file a pre-effective amendment containing pricing related-information, we may have additional comments. Pricing-related information must be filed prior to circulating the prospectus. Please ensure that your price range is bona fide. We interpret this to mean that your range may not exceed $2 if your price is below $20 and 10% if you price above $20.

2. Please provide us with a copy of all graphic materials or artwork you intend to include in your prospectus. We may have comments, which you should address before printing your preliminary prospectus for distribution.

3. Please supplementally provide us with copies of all written communications, as defined in Rule 405 under the Securities Act, that you, or anyone authorized to do so on your behalf, present to potential investors in reliance on Section 5(d) of the Securities Act, whether or not they retain copies of the communications.

4. We note that you are seeking confidential treatment for several of your exhibits. Please note that comments on your confidential treatment request will be sent under separate cover.

5. We note your statement beneath the table of contents that you have not independently verified the information contained in publications which served as the basis for market data and statistical information included in your prospectus. Please delete the statement or clearly state that you are liable for the market data and statistical information included in the prospectus.

Prospectus Summary, page 1

6. We note your statement here that you are a "leading" gene therapy platform company, as well as similar statements regarding the relative strength of your market position throughout your prospectus, for example:

    - "continued leadership as an innovator in the gene therapy field" on page 5;
    - "most comprehensive manufacturing platform…" on page 99;
    - "advantage over our competitors in developing and commercializing…" page 102;

    Please provide support for these statements comparing your product candidates and technology to your competitors.

7. We note your statement that you believe your platform will allow you to "rapidly" develop your current pipeline. Please revise your disclosure to provide investors with a better sense of what you mean by your use of the word "rapidly" in this context. For example, on page 129 you describe it as "requir[ing] the expenditure of substantial time," and on page 13 you indicate that it is difficult to determine how long it will take to obtain regulatory approvals for and to commercialize your product candidates.

8. Please define the scientific terms "hypercoagulation" and "immunogenicity" at first use in order to enable a reasonable lay investor to understand such terms.

Our Pipeline of Programs, page 2

9. Your product pipeline table should highlight your products in development that are reasonably likely to result in an approved product in the foreseeable future. Research and

discovery activities that precede the identification of a product candidate are too remote to be highlighted in the pipeline table. Accordingly, please limit your table to products that are at least in the preclinical stage of development.

Our estimates of the incidence and prevalence for target patient populations …, page 28

10. Please tell us the basis for your projections of the number of people who have hemophilia A, hemophilia B, OTC deficiency, and GSDIa that you provide here and elsewhere throughout your filing to indicate the basis for your estimates.

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

Revenue, page 80

11. Please disclose the expected performance period of the Bayer arrangement and the additional research payments recorded for each period presented.

Stock-Based Compensation, page 87

12. We may have additional comments on your accounting for equity issuances, including stock compensation and beneficial conversion features. Once you have an estimated offering price, please provide us an analysis explaining the reasons for the differences between recent valuations of your common stock leading up to the IPO and the estimated offering price.

Business, page 99

Our Industrialized Manufacturing Approach, page 109

13. Please reconcile your statement on page 27 that you have no experience in manufacturing pharmaceutical or biological products on a commercial scale and your potential suppliers will have to construct and validate new commercial manufacturing facilities and obtain regulatory approvals before being able to produce your product candidates with the following additional statements:

- that you have developed the most comprehensive manufacturing platform developed to date for production of AAV product candidates at commercial scale, and
- that your proprietary mammalian cell-based AAV vector manufacturing processes and techniques can "reproducibly produce at commercial scale."

Our Product Pipeline, page 112

DTX301, page 116

14. We note your disclosure that approximately 3,400 patients in the United States and approximately 10,000 patients worldwide are affected by OTC deficiency. Additionally, we note your current strategy involves focusing on treatments that would provide benefits to only a smaller subset of those patients, namely late-onset and older patient. Please provide an estimate of the amounts of those particular patients in the United States and worldwide, if possible. Alternatively, clarify that your target population is significantly smaller than the numbers shown here.

15. We note that you plan to collaborate with the Urea Cycle Disorders Consortium for your work on OTC deficiency. Please revise your disclosure to indicate the nature of your current relationship with the Consortium and whether you currently have any formal or informal commitments from the Consortium relating to your collaboration.

DTX401, page 118

16. We note that you plan to further your work with DTX401 in collaboration with a U.S. governmental institution through a research and development agreement and with David Weinstein, M.D., M.M.Sc., as well as with certain patient organizations, including The Children's Fund for Glycogen Storage Disease Research. Please revise your disclosure to indicate the nature of your current relationship with each of these parties, including any formal or informal commitments relating to your collaboration with them.

Our Partners and Advisors, page 124

17. Please expand your disclosure to describe the nature of your clinical research collaboration with Pharmaceutical Product Development.

Employment Arrangements with Our Named Executive Officers, page 152

18. Please clarify the nature of the annual incentive bonuses that will be paid to your named executive officers. For example, will the bonuses consist of cash, deferred cash awards, equity awards, or a combination of these types of awards?

Senior Executive Incentive Bonus Plan, page 160

19. Please clarify whether the Senior Executive Bonus Plan will be separate from the annual incentive bonuses that you plan to pay to your named executive officers and, if so, whether the named executive officers will also be eligible to participate in this plan.

You may contact Franklin Wyman at (202) 551-3660 or Joel Parker at (202) 551-3651 if you have questions regarding comments on the financial statements and related matters. Please contact William H. Dorton, Staff Attorney, at (202) 551-3107 or me at (202) 551-3675 with any other questions.

Sincerely,

/s/ Suzanne Hayes
Suzanne Hayes
Assistant Director