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September 6, 2019

**VIA EDGAR AND OVERNIGHT DELIVERY**

Division of Corporation Finance  
Office of Healthcare & Insurance  
United States Securities and Exchange Commission  
100 F Street, N.E.  
Mail Stop 4720  
Washington, D.C. 20549  
Attn: Donald Field

Re: **Frequency Therapeutics, Inc.**  
**Draft Registration Statement on Form S-1**  
**Submitted August 22, 2019**  
**CIK 0001703647**

Dear Mr. Field:

On behalf of Frequency Therapeutics, Inc., a Delaware corporation (the “**Company**”), we are transmitting this letter in response to comments received from the staff (the “**Staff**”) of the Securities and Exchange Commission by letter dated September 4, 2019 with respect to the Company’s confidential Draft Registration Statement on Form S-1 submitted on August 22, 2019 (the “**Draft Registration Statement**”). This letter is being submitted together with the Company’s Registration Statement on Form S-1 (the “**Registration Statement**”), which has been revised to address various of the Staff’s comments. The bold and numbered paragraphs below correspond to the numbered paragraphs in the Staff’s letter and are followed by the Company’s responses. For the Staff’s convenience, we are also sending, by courier, copies of this letter and marked copies of the Registration Statement that reflect changes made to the Draft Registration Statement.

**LATHAM & WATKINS** LLP

**Impact and prevalence of hearing, page 99**

1. **We note your response to comment 4. Please revise the exhibit index to indicate that you will file a consent from Health Advances LLC pursuant to Rule 436 of the Securities Act. For guidance, please refer to Question 233.02 of our Securities Act Rules Compliance and Disclosure Interpretations, which are available on our website.**

Response: The Company respectfully acknowledges the Staff's comment and advises the Staff that the consent from Health Advances LLC has been filed as Exhibit 23.3 to the Registration Statement.

**Unaudited Consolidated Financial Statements as of June 30, 2018 and 2019**

**Consolidated Balance Sheets, page F-31**

2. **Please revise to reflect only the conversion of preferred stock existing at the latest balance sheet date in the pro forma information presented on the face of your historical financial statements. In this regard, while we do not object to the inclusion of other pro forma adjustments on your capitalization table, we believe that the pro forma presentation on the face of the historical statements should be limited to the impact of pro forma adjustments on financial instruments actually outstanding at the balance sheet date.**

Response: The Company respectfully acknowledges the Staff's comment and advises the Staff that it has revised pages F-31 and F-36 in response to the Staff's comment.

Please do not hesitate to contact me at 212-906-2916 or Jennifer Yoon at 617-880-4540 with any questions or further comments you may have regarding this filing or if you wish to discuss the Company's responses above.

Sincerely,

/s/ Nathan Ajiashvili

Nathan Ajiashvili  
of LATHAM & WATKINS LLP

cc: David L. Lucchino, Frequency Therapeutics, Inc.  
Michael D. Bookman, Frequency Therapeutics, Inc.  
Jennifer A. Yoon, Latham & Watkins LLP  
Arthur D. Robinson, Simpson Thacher & Bartlett LLP