



Jaime L. Chase
+1 202 728 7096
jchase@cooley.com

BY EDGAR and COURIER

FOIA Confidential Treatment Request
Confidential Treatment Requested by Applied Therapeutics, Inc.
in connection with Registration Statement on Form S-1 (File No. 333-230838)

April 24, 2019

David Plattner
Tom Kluck
Office of Healthcare and Insurance
Division of Corporation Finance
U.S. Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Re: Applied Therapeutics, Inc.
Registration Statement on Form S-1
Filed April 12, 2019
File No. 333-230838

Dear Mr. Plattner and Mr. Kluck:

On behalf of Applied Therapeutics, Inc. (the "**Company**"), we are submitting this supplemental letter in further response to comment 8 received from the staff (the "**Staff**") of the Securities and Exchange Commission (the "**Commission**") by letter dated February 14, 2019 (the "**Comment Letter**") with respect to the Company's Confidential Draft Registration Statement on Form S-1 originally submitted to the Commission on January 25, 2019, resubmitted to the Commission on March 8, 2019 and March 27, 2019, and subsequently filed with the Commission on April 12, 2019 (the "**Registration Statement**").

Due to the commercially sensitive nature of information contained in this letter, this submission is accompanied by the Company's request for confidential treatment for selected portions of this letter. The Company has filed a separate letter with the Office of Freedom of Information and Privacy Act Operations in connection with the confidential treatment request pursuant to Rule 83 of the Commission's Rules on Information and Requests, 17 C.F.R. § 200.83. For the Staff's reference, we have enclosed a copy of the Company's letter to the Office of Freedom of Information and Privacy Act Operations as well as a copy of this correspondence, marked to show the portions redacted from the version filed via EDGAR and for which the Company is requesting confidential treatment.

For the convenience of the Staff, we have recited the prior comment from the Staff in italicized type and have followed the comment with the Company's response.

Stock-Based Compensation, page 72

8. Once you have an estimated offering price or range, please explain to us how you determined the fair value of the common stock underlying your equity issuances and the reasons for any differences between the recent valuations of your common stock leading up to your initial public

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offering and the estimated offering price. This information will help facilitate our review of your accounting for equity issuances including stock compensation and beneficial conversion features.

Preliminary Price Range

The Company advises the Staff that the Company currently expects a price range of \$[***] to \$[***] per share of common stock (the “***Preliminary Price Range***”) for its initial public offering (“***IPO***”), which Preliminary Price Range reflects a [***]-for-[***] stock split of the Company’s capital stock that will be effected prior to the effectiveness of the Registration Statement. This Preliminary Price Range implies a pre-money valuation range for the Company of \$[***] million to \$[***] million. The share and per-share numbers in this letter are presented on a post-split basis.

The Preliminary Price Range is based in part upon the Company’s prospects, prospects for the biopharmaceutical industry, the general condition of the securities markets and the recent market prices of, and the demand for, publicly traded shares of generally comparable companies in the biopharmaceutical industry, as well as input received from Citigroup Global Markets Inc., Cowen and Company LLC and UBS Securities LLC, the lead underwriters (the “***Representatives***”) for the IPO. The Company notes that, as is typical in IPOs, the Preliminary Price Range for the Company’s IPO was not derived using a formal determination of fair value, but was determined by discussions between the Company and the Representatives based on the assessment of the foregoing factors.

The Company will include a bona fide price range of the common stock, which the Company expects to be a two-dollar range within the Preliminary Price Range, in an amendment to the Registration Statement that will be filed before the commencement of the Company’s road show. However, the parameters of the bona fide price range will be subject to then-current market conditions, continuing discussions with the Representatives and material business developments impacting the Company, and due to the volatility in the securities markets, in particular the volatility experienced in the market by recent IPO issuers, there is a possibility that the bona fide price range for the IPO may fall outside of the Preliminary Price Range. In any event, the Company confirms to the Staff that the bona fide price range will comply with Item 501(b)(3) of Regulation S-K and C&DI 134.04.

Common Stock Valuation Methodologies

As there has been no public market for the Company’s common stock to date, the estimated fair value of its common stock has been determined by the Company’s board of directors (the “***Board***”), as of the date of each option grant, with input from management, considering the Company’s most recent arm’s-length sales of its preferred stock and the most recent third-party valuation of its common stock, as well as the Board’s assessment of additional objective and subjective factors that the Board believed were relevant and which may have changed from the date of the most recent third-party valuation through the date of the grant. The Board considered various objective and subjective factors to determine the fair value of the common stock as of each grant date, including:

- the prices at which the Company sold preferred stock and the superior rights and preferences of the preferred stock relative to the common stock at the time of each grant;
- the progress of the Company’s research and development programs, including the status and results of clinical trials for AT-001;
- the Company’s stage of development and its business strategy;

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- external market conditions affecting the healthcare industry in general, and the biotechnology industry in particular, and trends within such industries;
- the Company's financial position, including cash on hand, and its historical and forecasted performance and operating results;
- the lack of an active public market for the common stock and preferred stock;
- the likelihood of achieving a liquidity event, such as an IPO, in light of prevailing market conditions;
- the Company's IPO timeline and related activities; and
- the analysis of IPOs and the market performance of similar companies in the healthcare industry.

The third-party valuations of the Company's common stock that the Board considered in making its determinations were prepared in accordance with the American Institute of Certified Public Accountants Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation* (the "**Practice Guide**"), which prescribes several valuation approaches for determining the value of an enterprise, such as the cost, market and income approaches, and various methodologies for allocating the value of an enterprise to its capital structure and specifically the common stock.

In accordance with the Practice Guide, the Company considered the following methods for allocating the enterprise value across its classes and series of capital stock to determine the fair value of its common stock at each valuation date.

- *Option Pricing Method ("OPM")*. The OPM estimates the value of the common equity of the Company using the various inputs in the Black-Scholes option pricing model. The OPM treats the rights of the holders of common stock as equivalent to that of call options on any value of the enterprise above certain break points of value based upon the liquidation preferences of the holders of the Company's convertible preferred stock, as well as their rights to participation, and the stock prices of the outstanding options. Thus, the value of the common stock can be determined by estimating the value of its portion of each of these call option rights. Under this method, the common stock has value only if the funds available for distribution to stockholders exceed the value of the liquidation preference at the time of a liquidity event, such as a merger or sale. Given the common stock represents a non-marketable equity interest in a private enterprise, an adjustment to the preliminary value estimates had to be made to account for the lack of liquidity that a stockholder experiences. This adjustment is commonly referred to as a discount for lack of marketability ("**DLOM**").
- *Probability-Weighted Expected Return Method ("PWERM")*. The PWERM is a scenario-based analysis that estimates the value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes considered by the Company, as well as the economic and control rights of each share class.
- *Hybrid Method*. The hybrid method is a weighted-average method that combines both OPM and PWERM. Weighting allocations are assigned to the OPM and PWERM methods factoring in possible future liquidity events.

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Common Stock Valuations

In order for the Board to determine the estimated fair value of the common stock, the OPM was utilized for the independent third-party valuation of the Company’s common stock as of March 8, 2018 (the “**March 2018 Valuation**”) discussed below, and the PWERM was utilized by the independent third-party valuations of the Company’s common stock as of December 17, 2018 (the “**December 17, 2018 Valuation**”), December 31, 2018 (the “**December 31, 2018 Valuation**”) and March 18, 2019 (the “**March 18, 2019 Valuation**”) because the Company had better visibility into the timing of a potential IPO. Equity value for each liquidity event scenario was weighted based on a probability of each event’s occurrence. In each of the IPO scenarios discussed below, the Company assumed that all outstanding shares of the Company’s convertible preferred stock would be converted into shares of common stock. In the sale of the Company, the Company allocated the value per share by taking into account the liquidation preferences and participation rights of the convertible preferred stock consistent with the method outlined in the Practice Guide. A summary of the valuations is set forth in the following table:

Date of Valuation	Estimated Fair Value (\$)
February 28, 2017	[***]
March 8, 2018	[***]
December 17, 2018	[***]
December 31, 2018	[***]
March 18, 2019	[***]

At each grant date, the Board evaluated any recent events and their potential impact on the estimated fair value per share of the common stock. For grants of stock awards made on dates for which there was no contemporaneous independent third-party valuation, the Board determined the fair value of the common stock on the date of grant taking into consideration the immediately preceding valuation report as well as other pertinent information available to it at the time of the grant. In connection with valuations prior to December 17, 2018, the Company considered the most recent arm’s length preferred stock financings prior to the issuance of any option grants, as the basis for the value of its common shares at the date of the option grant. After December 17, 2018, the valuation methodology changed to the use of PWERM, as the Company had obtained better visibility into the near-term timing of a potential IPO, but still considered the uncertainty around the Company’s value should an IPO not occur. The PWERM is commonly used in these situations and is consistent with guidance from the Practice Guide.

Common Stock Valuations and Stock Option Grants

Since March 2018, the Company has granted stock options as follows:

Date of the Grant	Numbers of Shares Subject to Options Granted	Exercise Price Per Share (\$)	Estimated Fair Value Per Share of Common Stock at Grant Date(1) (\$)
March 8, 2018	[***]	[***]	[***]
June 28, 2018	[***]	[***]	[***]
December 17, 2018	[***]	[***]	[***]

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<u>Date of the Grant</u>	<u>Numbers of Shares Subject to Options Granted</u>	<u>Exercise Price Per Share (\$)</u>	<u>Estimated Fair Value Per Share of Common Stock at Grant Date(1)</u> <u>(\$)</u>
March 7, 2019	[***]	[***]	—(2)
March 18, 2019	[***]	[***]	[***]
April 11, 2019	[***]	[***]	[***]

(1) For financial reporting purposes.

(2) Stock options valued using Monte Carlo simulation model.

March and June 2018 Stock Option Grants

On March 8, 2018 and June 28, 2018, the Company granted options to purchase [***] and [***] shares of common stock, respectively, at an exercise price of \$[***] per share. The Board initially determined the fair value of the stock at the time of the grants to be \$[***] per share based on a number of factors, including the Company’s most recently completed third-party valuation, dated February 28, 2017 (the “**February 2017 Valuation**”), which determined the fair value of the stock was \$[***].

Retrospective Valuation — March 8, 2018

In December 2018, the Company assessed the internal developments occurring since the February 2017 Valuation and determined that the initiation of the Company’s Phase 1 clinical trial of AT-001 and the issuance of \$6.0 million in convertible notes in March 2018 warranted a change in the Board’s determination of fair value of the stock as of March 8, 2018. As a result, the March 2018 Valuation was prepared, which determined the fair value of the stock was \$[***] per share. As a result of the March 2018 Valuation, the Board revised the grant date fair value of the stock as of March 8, 2018 and amended the stock options to provide for an exercise price of \$[***] per share.

For the March 2018 Valuation, the Company utilized the OPM to derive the implied equity value for the Company. For purposes of the March 2018 Valuation, an option-based analysis was performed in an effort to estimate the appropriate DLOM for the common stock. A DLOM of 37.00% was used for the March 2018 Valuation.

Upon receipt of the March 2018 Valuation in December 2018, the Company assessed the internal developments occurring between the March 2018 Valuation and the June 2018 stock option grants and determined that there were no internal or external developments since the March 2018 Valuation that warranted a change in the fair value of the stock since the March 2018 Valuation. As a result, the Board determined that the March 2018 Valuation reflected the fair market value of the Company’s common stock as of June 28, 2018 and amended the stock options to provide for a revised exercise price of \$[***] per share.

For financial reporting purposes, the grant date fair value of the options granted were based on inputs that included the initial exercise price of \$[***] per share and a fair value of stock of \$[***] per share. As a result of the above modifications, the Company reviewed the fair value analysis for financial reporting purposes. Pursuant to ASC 718-10, *Stock Compensation*, modifications that do not increase the total fair value of the share-based payment, or are not otherwise beneficial to the employee or service

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provider, should generally be ignored. For example, if a modification increases the exercise price of previously granted stock options, the modification would decrease the fair value of the stock options originally granted and the incremental fair value should be ignored. Accordingly, there was no incremental stock compensation expense.

December 31, 2018 Valuation

In preparation for the issuance of stock options in 2019, the Company had a third-party valuation specialist prepare the December 31, 2018 Valuation, which determined the fair value of the stock was \$[***].

For the December 31, 2018 valuation, the Company estimated the fair value of the stock by using the PWERM. For the PWERM methodology, three scenarios were considered: (i) an IPO scenario (50% weighting and 11.00% DLOM); (ii) a stay private scenario (45% weighting and 36.00% DLOM) and; (iii) a downside scenario (5% weighting). For the IPO scenario, the future equity value at an expected IPO date was allocated to the outstanding shares of redeemable convertible preferred stock and the common stock, based on the rights and preferences of each class of equity. The Company then discounted the value of each class of equity at an appropriate risk-adjusted rate. The Company believes that the probability weighting of each potential scenario used in the PWERM analyses was an appropriate methodology in light of the Company's stage of development, the status of its research and development efforts and financial position, external market conditions affecting the biopharmaceutical industry, the volatility in the capital markets, especially with respect to IPOs, and the relative likelihood of achieving an IPO in light of prevailing market conditions. The Company deemed it appropriate to include a 50% weighting for the IPO scenario because at the time of the valuation the Company had just completed its IPO organizational meeting on December 17, 2018, which gave the Company some visibility into the probability and timing of an IPO. However, mere intent to file a registration statement and exit via an IPO does not necessarily mean that the Company would be successful in doing so. Unexpected systemic events like the biotech IPO market cooling, fatigue from institutional investors, delays caused by government shutdown, or other Company specific events like an unfavorable data readout for AT-001 prior to the IPO or other development setbacks could materially impact the viability of the Company's IPO or the Company's aspirations to continue pursuing one. Furthermore, the Representatives had not yet provided pricing indications. Accordingly, the IPO scenario was weighted at 50% while staying private was weighted at 45% and a downside was weighted at 5%.

The December 31, 2018 valuation reflected the Company's recent closings of the Company's Series B preferred stock financing, IPO organizational meeting and the hiring of an interim Chief Financial Officer. Based on the December 31, 2018 Valuation, the Board determined the fair value of the stock as of December 31, 2018 was \$[***] per share.

December 2018 Stock Option Grant

On December 17, 2018, the Company granted options to purchase a total of [***] shares of common stock as a new hire grant for the Chief Medical Officer at an exercise price equal to the greater of the fair value as of the February 2017 Valuation (\$[***]) or the fair market value of the Company's common stock as of a date in March 2018. Upon receipt of the March 2018 Valuation in December 2018

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(as discussed above), the exercise price for the December 17, 2018 grant became determinable and was set at \$[***] per share.

Retrospective Valuation for Financial Reporting Purposes — December 17, 2018

In March 2019, during the course of completing the 2018 financial statement audit, the Company assessed the internal developments occurring since the March 2018 Valuation and determined that the recent closings of the Company's Series B preferred stock financing and the organizational meeting for the Company's IPO warranted an updated fair value of common stock for financial reporting purposes. As a result, the December 17, 2018 Valuation was prepared by the Company as of December 17, 2018, which determined the fair value of the stock was \$[***] for financial reporting purposes.

For the December 17, 2018 Valuation, the Company estimated the fair value of the stock by using the December 31, 2018 Valuation and adjusting the assumptions for PWERM. For the PWERM methodology, three scenarios were considered: (i) an IPO scenario (40% weighting and 11.00% DLOM); (ii) a stay private scenario (55% weighting and 36.00% DLOM) and; (iii) a downside scenario (5% weighting). For the IPO scenario, the future equity value at an expected IPO date was allocated to the outstanding shares of redeemable convertible preferred stock and the common stock, based on the rights and preferences of each class of equity. The Company then discounted the value of each class of equity at an appropriate risk-adjusted rate. The Company believes that the probability weighting of each potential scenario used in the PWERM analyses was an appropriate methodology in light of the Company's stage of development, the status of its research and development efforts and financial position, external market conditions affecting the biopharmaceutical industry, the volatility in the capital markets, especially with respect to IPOs, and the relative likelihood of achieving an IPO in light of prevailing market conditions. The Company deemed it appropriate to include a 40% weighting for the IPO scenario because at the time of the valuation the Company had just completed its IPO organizational meeting on the same day, December 17, 2018, which gave the Company some visibility into the probability and timing of an IPO. However, mere intent to file a registration statement and exit via an IPO does not necessarily mean that the Company would be successful in doing so. Unexpected systemic events like the biotech IPO market cooling, fatigue from institutional investors, delays caused by government shutdown, or other Company specific events like an unfavorable data readout for AT-001 prior to the IPO or other development setbacks could materially impact the viability of the Company's IPO or the Company's aspirations to continue pursuing one. Furthermore, the Representatives had not yet provided pricing indications. Accordingly, the IPO scenario was weighted at 40% while staying private was weighted at 55% and a downside was weighted at 5%.

March 7, 2019 and March 18, 2019 Stock Option Grants

On March 7, 2019, the Company granted options to purchase a total of [***] shares of common stock at an exercise price of \$[***] per share, with vesting terms that contained a potential market condition, as a new hire grant for the interim Chief Financial Officer. On March 18, 2019, the Company granted options to purchase a total of [***] shares of common stock at an exercise price of \$[***]. The Board determined there were no internal or external developments since the December 31, 2018 Valuation that warranted a change in the fair value of the stock since December 31, 2018. As a result, the Board determined that the December 31, 2018 Valuation reflected the accurate fair value of the Company's common stock as of the March 7, 2019 and the March 18, 2019 stock option grants.

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Monte Carlo Simulation Model for Financial Accounting Purposes — March 7, 2019

For financial reporting purposes, the Company utilized the Monte Carlo simulation model due to the existence of a market condition within the performance-based awards. The Monte Carlo simulation model was utilized to value each vesting tranche of the options granted by generating a large number of possible future paths to achieve the vesting conditions. A third-party specialist determined the derived service period for each vesting tranche of the options granted using the Monte Carlo simulation model. The fair value of each tranche of the options was then calculated by averaging the values for all paths and discounting the results to the valuation date at a risk-free rate. The key inputs to the Monte Carlo simulation include: value of common stock on the valuation date, volatility, time to expiration (time to a liquidity event), cost of equity, dividend yield and a risk-free rate. Based on the assumptions and inputs used in the Monte Carlo simulation, the fair value per option for each tranche was determined to be \$[***], \$[***], \$[***] and \$[***].

Retrospective Valuation for Financial Reporting Purposes — March 18, 2019

In connection with quarter end close procedures, the Company assessed the internal developments occurring since the December 31, 2018 Valuation and determined that the final closing of the Company's Series B preferred stock financing and a higher probability of an IPO as the Company had confidentially submitted its Registration Statement on Form S-1 and had responded to initial SEC comments warranted an updated fair value of the stock for financial reporting purposes. As a result, the March 18, 2019 Valuation was prepared, which determined the fair value of the stock was \$[***] per share for financial reporting purposes.

For the March 18, 2019 Valuation, the Company estimated the fair value of the stock by using the PWERM. For the PWERM methodology, three scenarios were considered: (i) an IPO scenario (60% weighting and an 11.00% DLOM); (ii) a stay private scenario (35% weighting and a 36.00% DLOM) and; (iii) a downside scenario (5% weighting). For the IPO scenario, the future equity value at an expected IPO date was allocated to the outstanding shares of redeemable convertible preferred stock and the common stock, based on the rights and preferences of each class of equity. The Company then discounted the value of each class of equity at an appropriate risk-adjusted rate. The Company believes that the probability weighting of each potential scenario used in the PWERM analyses was an appropriate methodology in light of the Company's stage of development, the status of its research and development efforts and financial position, external market conditions affecting the biopharmaceutical industry, the volatility in the capital markets, especially with respect to IPOs, and the relative likelihood of achieving an IPO in light of prevailing market conditions. The Company deemed it appropriate to include a 60% weighting for the IPO scenario because at the time of the valuation the Company had completed its IPO organizational meeting on December 17, 2018, confidentially submitted its Registration Statement on Form S-1 and has responded to SEC comments, which gave the Company some visibility into the probability and timing of an IPO. However, mere intent to exit via an IPO does not necessarily mean that the Company would be successful in doing so. Unexpected systemic events like the biotech IPO market cooling, fatigue from institutional investors, delays caused by government shutdown, or other Company specific events like an unfavorable data readout for AT-001 prior to the IPO or other development setbacks could materially impact the viability of the Company's IPO or the Company's aspirations to continue pursuing one. Furthermore, the Representatives had not yet provided pricing indications. Accordingly, the IPO scenario was weighted at 60% while staying private was weighted at 35% and a downside was weighted at 5%.

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April 2019 Stock Option Grants

On April 11, 2019, the Company granted options to purchase a total of [***] shares of common stock at an exercise price of \$[***]. The exercise price was based on the fair value as determined by the Board at the time of the grants and was based on a number of factors, including the December 31, 2018 Valuation which reflected the Company's recent closings of the Company's Series B preferred stock financing and IPO organizational meeting.

Consistent with the March 2019 grants, the Board determined that there were no internal developments since the December 31, 2018 valuation that warranted a change in the fair value for financial reporting purposes.

For financial reporting purposes, the Company assessed the internal developments occurring since the March 18, 2019 Valuation and determined that there were no developments that warranted any additional changes to the fair value. As a result, the Company determined that the March 18, 2019 Valuation of \$[***] per share reflected the accurate fair value of the Company's common stock as of the date of the April 2019 stock option grants.

Explanation of Difference Between Fair Value of Common Stock at April 11, 2019 and the Midpoint of the Preliminary Price Range

The Company believes that the difference in value reflected between the fair value of its common stock at April 11, 2019 and the midpoint of the Preliminary Price Range is the result of the following key factors, among others:

- The Company completed an extension to its Phase 1/2 clinical trial to evaluate the safety, tolerability and PK of AT-001 over a 28-day treatment period in approximately 30 type 2 diabetes patients with early-stage DbCM, in which AT-001 was well tolerated over 28 days. Additionally, patients demonstrated a clear response to AT-001 on reduction of NTproBNP, a marker of cardiac stress.
- The Preliminary Price Range assumes a successful IPO in the near term with no weighting attributed to any other outcome for the Company's business, such as remaining a privately-held company, being sold in a sale transaction or a liquidation of its assets in a dissolution scenario.
- The Preliminary Price Range represents a future price for the common shares that, if issued in the Company's IPO, would be immediately freely tradable in a public market, whereas the estimated fair value of the common shares based on the valuations between March 2018 and April 2019 represents an estimate of the fair value of the shares that were then illiquid, might never become liquid, might be for shares that are never publicly traded and, even if an IPO were to be successfully completed, would remain illiquid at least until the expiration of the 180-day lockup period following the IPO. Additionally, the Preliminary Price Range reflects that, upon a successful IPO, the Company's preferred shares will convert into common shares and will no longer have the liquidation preferences and preferential rights attributable to the preferred shares as compared to the common shares prior to the IPO.
- Updated market conditions used in the determination of the Preliminary Price Range after discussions with the Representatives, based on the current market environment and the supply and demand for such investment opportunities in the marketplace.

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- The successful completion of the IPO would strengthen the Company's balance sheet, provide access to public equity and provide enhanced operational flexibility, increasing the value of the Company's common stock compared to that of a private company.

Based on the Preliminary Price Range, the current status of the financial markets and continued uncertainty as to whether the Company will be able to complete its planned IPO within the Preliminary Price Range, or at all, the Company believes that the fair value of its common stock as determined by the Board on April 11, 2019 is consistent with the Company's and the underwriters' estimates of the Preliminary Price Range, and that the prior valuations were consistent with the increasing value of the Company's common stock in connection with its progression towards an IPO.

Conclusion

In light of the above, the Company respectfully submits that the per share grant date fair values, as set forth in the table above under "Common Stock Valuations and Stock Option Grants," which have been used as the basis for determining the stock-based compensation in connection with its stock option grants since March 2018, were reasonable and appropriate for the reasons described herein and in the Registration Statement.

* * *

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Please contact me at (202) 728-7096, Div Gupta at (212) 479-6474 or Laura Berezin at (650) 843-5128 with any questions or further comments regarding our response to the Staff's comment.

Sincerely,

/s/ Jaime L. Chase

Jaime L. Chase

cc: Shoshana Shendelman, Ph.D., *Applied Therapeutics, Inc.*
Les Funtleyder, *Applied Therapeutics, Inc.*
Div Gupta, *Cooley LLP*
Laura Berezin, *Cooley LLP*
Richard D. Truesdell, Jr., *Davis Polk & Wardwell LLP*

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