

October 31, 2013

United States Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549
Attention: Jeffrey P. Riedler, Assistant Director

**RE: Trevena, Inc.
Amendment No. 1 to Registration Statement on Form S-1
Filed October 23, 2013
File No.: 333-191643**

Ladies and Gentlemen:

On behalf of our client, Trevena, Inc. ("*Trevena*" or the "*Company*"), we are responding to the comments (the "*Comments*") of the staff (the "*Staff*") of the Securities and Exchange Commission (the "*Commission*") contained in its letter dated October 29, 2013 (the "*Comment Letter*"), relating to the above referenced Registration Statement (the "*Registration Statement*").

We also describe below the changes the Company is proposing to make in response to the Comments in an Amendment No. 3 to the Registration Statement on Form S-1 (the "*Amendment*") and the prospectus included therein (the "*Prospectus*"). These proposed changes are attached to this letter as **Exhibit A** (the "*Exhibit*").

Overview

Many of the Comments reflect concerns of the Staff with regard to the valuations that have been assigned to the Company's common stock during 2013. These valuations were completed on April 30, 2013 and August 15, 2013. The Company firmly believes that the valuation methodologies employed on these dates were appropriate and incorporated the best data available to the Company at the time. Both valuations were prepared by a nationally recognized valuation firm applying valuation techniques and methods chosen by it in its professional judgment and based on the recommendations of the American Institute of Certified Public Accountants in the Practice Aid entitled *Valuation of Privately-Held-Company Equity Securities Issued as Compensation* (the "*Practice Guide*"). The Company does not believe that it is now appropriate to revise these valuations based on changed circumstances after the valuation dates reflecting intervening but previously unknowable events.

The August 15, 2013 valuation assigned the Company's common stock a value of \$7.44 per share. This was based on a full PWERM analysis combining a set of IPO scenarios bearing a weighted average valuation of \$12.44 per share with a non-IPO scenario valuation of \$2.48 per share. The IPO scenarios together were assigned a 50% probability in this analysis and the

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non-IPO scenario was assigned a 50% probability. The Company believes that the weighted average IPO scenario valuation was well-founded in light of the currently proposed price range of \$12.00 to \$14.00 per share. The IPO probability assessment of 50% was appropriate given that the Board had only recently authorized the Company to begin the IPO process and that the Company had not yet engaged underwriters to assist with the process nor had it begun drafting its prospectus. Additionally, the Company notes that the probability weightings are consistent with those adopted recently by other similarly situated companies.

The non-IPO value was based on a market adjusted OPM, which backsolved to the enterprise valuation assigned in the Series C financing round that closed on May 3, 2013. This round was led by a new investor, Forest Laboratories Holdings Limited ("Forest Labs") which purchased half of the shares issued at the time. Although Forest Labs simultaneously entered into an option agreement with the Company, this agreement had minimal value, and neither the existing investors nor the Company had any incentive other than to obtain the highest valuation in the Series C round. Notably, contemporaneous with the Company's negotiations with Forest Labs an independent third-party investor had offered a term sheet valuing the Company significantly lower than what was eventually obtained in the Series C round. This third party declined to invest in the Series C at the higher valuation, indicating that this financing round was not underpriced. Accordingly, the Company believes that both the April 30, 2013 and August 15, 2013 common stock valuations, which were based on the enterprise value indicated in the Series C financing, were likewise not too low and that the Company's accounting for stock option grants using these valuations was appropriate. The step up in valuation from April through August to the midpoint of the proposed price range is primarily attributable to the change in probability of a successful IPO over that time period and management firmly believes that the appropriate probability weightings at each valuation date were applied.

Comment Responses

Set forth below are the Company's responses to the Comments. The numbering of the paragraphs below corresponds to the numbering of the Comments, which for your convenience we have incorporated into this response letter. .

FORM S-1

Critical Accounting Policies and Significant Judgments and Estimates Fair Market Value Estimates, page 62

1. We acknowledge your response and revised disclosures to our comment 1. Regarding your valuation of the stock options granted August 27, 2013 and September 26, 2013, please provide us the following information in revised disclosure, as applicable:
 - Your response regarding the June and July issuances does not appear to clarify why using the backsolve method is appropriate to determine the enterprise value in light of the shares being issued to related parties. We note in "Series C financing" on page 142 that the shares were issued primarily to related parties. You state that you also issued shares to a new external investor. However, you

also initiated on the same date a significant contract with the new external investor, which could indicate that the shares were not issued at arms' length. Please clarify why you believe use of the backsolve method is appropriate or revise.

Response to Comment 1, first bullet:

In response to the Staff's comment, the Company advises the Staff as follows: The backsolve method is appropriate for determining enterprise value when it backsolves to a preceding enterprise valuation that is itself a fair market valuation. The Series C valuation to which the Company backsolved was a fair market value determined by an arms-length negotiation among sophisticated investors consistent with the Practice Guide.

Although the Series C round included preexisting investors on a pro rata basis, half of the new shares were purchased by a new external investor, Forest Labs. The existing investors were incentivized to obtain the highest valuation in the Series C round; otherwise, Forest Labs' \$30 million investment would have excessively diluted the existing investors' holdings. In contrast, Forest Labs was incentivized to achieve the lowest valuation possible to obtain as large an ownership position for their investment as they could. The resolution of these competing interests yielded a market-based valuation of the Company since neither the existing investors nor Forest Labs were obligated to enter into the Series C transaction. The Company also notes that it had received shortly before the Forest Labs transaction another arms-length term sheet from an unrelated third party for investment into the Company. The valuation included in that term sheet was significantly below the valuation achieved in the Series C financing, providing further evidence that the valuation set by the Series C financing was not unreasonably low.

The option agreement entered into with Forest Labs on the date of the Series C financing did not alter the dynamics of the Series C valuation negotiation process to render it not arms-length. First, Forest Labs is not obligated to exercise their option to license TRV027 and they may choose not to. Second, the possibility of an exercise of the option by Forest Labs, which would not be expected before 2015, did not change the incentives of the existing investors to obtain the highest Series C valuation possible. Third, the option to license TRV027 upon the delivery of the data from the Company's Phase 2b study had minimal, if any, value. Because of the historical challenges in developing acute heart failure drugs (for example, the recent failure of Cytokinetic's omecamtiv mecarbil Phase 2 trial), there is a significant probability that Forest Labs will never receive any value under the optioned license agreement, particularly after paying the \$65 million option exercise fee and subsequent milestones. This assessment is consistent with Forest Labs' treatment of the option in their second quarter 2013 financial statements. There, Forest Labs allocated the full amount of the \$30 million investment to "Marketable securities and investments" and none to Research &

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Development. If the option had value in Forest Lab's view, some allocation to Research & Development would have been necessary. The minimal or non-existent value of the option would not have altered Forest Labs' incentives in the Series C valuation process.

The Forest Labs option agreement equally benefitted the Company and the new and existing investors and so no adjustments to the backsolve method were required under the Practice Guide.

For the above reasons, the Company believes that the Series C valuation represents a fair market value determined by an arms-length negotiation, and that the backsolve method using this valuation was appropriate.

In your response, you indicate that when adjusting the firm's enterprise value, the methodology considered the change in the enterprise values of comparable companies during the period between the previous valuation (April 30, 2013) and the most recent valuation (August 15, 2013). Please explain the result of this information and how it was used. Clarify why then you chose to use the increase in the NASDAQ Biotechnology Index specifically and not the information based on comparable companies. Cite for us the guidance you referred to support your methodology.

Response to Comment 1, second bullet:

In response to the Staff's comment, the Company advises the Staff as follows: The purpose of this adjustment to the enterprise value was to reflect changes in the value of the biopharmaceutical company market sector over the relevant period (see Practice Guide, Chapter 4, section 4.16-17). In determining this adjustment, the Company first reviewed the changes in the enterprise values of comparable companies over the relevant period. However, the wide range in the changes of these values (-61.3% to 76.0%) suggested that these changes reflected company-specific events more than market sector-specific factors (by way of example, the market capitalization of one of the comparable companies fell 50% in one day between the two valuation dates when its collaboration partner announced that it may discontinue development of one of that company's leading product candidates). Accordingly, the Company did not use the change in values of the comparable companies in determining the market adjustment factor. The Company also reviewed the changes in the NASDAQ Biotechnology Index, iShares NASDAQ Biotechnology Index, and the S&P Biotech ETF over the relevant period. Because these three indices moved in concert and in similar amounts, the Company used the average change of the three indices. Coincidentally, this average change was equal to the change in the NASDAQ Biotechnology Index alone. The Company proposes to modify the disclosure in the Amendment as shown in the Exhibit to reference all three indices. The 9.7% average growth in the three indices from April 30, 2013 to August 15, 2013 was then applied to the Company's enterprise value as of April 30, 2013.

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The Company notes that the average change in the enterprise values of the comparable companies from April 30, 2013 to August 15, 2013 was 10.9%, which is consistent with the 9.7% average change of the indices, even if it likely incorporates company-specific events in addition to market-specific effects. Had the Company instead utilized the average change of the enterprise values of the comparable companies, the impact on the resulting valuation as of August 15, 2013 would have been negligible.

Please support the basis of your assumption that the cash spent in the 3.5 month period was assumed to have generated a 20% return.

Response to Comment 1, third bullet:

In response to the Staff's comment, the Company advises the Staff as follows: A typical biopharmaceutical company experiences a discrete step-up in valuation when it reaches a major value inflection point (for example, a financing event, successful completion of a clinical trial, FDA approval of a product candidate or entry into a strategic partnership with a large pharmaceutical company). Although the Company did not experience any unexpected major value inflecting events in the relevant time period, the Company still invested cash into the development of its drug programs with the longer term goal of reaching such value inflection points. Accordingly, the Company believed it would be appropriate to assume some interim incremental value accretion to bridge the gap between major value inflection points. To estimate this interim value accretion, an extrapolation was made to the value created from the cash spent. Although it is not possible to precisely determine the incremental value generated by each dollar spent, the Company believed it would be appropriate to assume a value creation based on the 20% annual rate of return generally required by venture capital investors, as described in the Company's prior comment response.

Notwithstanding the foregoing, the Company supplementally advises the Staff that, given the cash spent during this timeframe of approximately \$12 million (and the relatively short time period of the assumed return), the incremental value attributed to this assumed annual 20% return, after considering the offsetting effect of the \$12 million reduction in the Company's cash balance, did not materially impact the overall enterprise value of the Company or the estimated fair value of the Company's common stock.

Tell us why you believe it is appropriate to use the weighted average of the market adjusted option pricing model and the PWERM method to determine enterprise value. The methodology you describe doesn't appear to be consistent with that of the hybrid method as it appears that you are averaging the different values from each methodology (PWERM and OPM). The hybrid method combines the PWERM and OPM methods and is developed by estimating

to estimate the allocation of value within one or more of those scenarios. Please revise or advise.

Response to Comment 1, fourth bullet:

In response to the Staff's comment, the Company advises the Staff as follows: In the August 15, 2013 valuation, the Company used a full PWERM with two main categories of discrete scenarios — non-IPO scenarios and IPO scenarios. The market adjusted OPM was used to estimate the values of the non-IPO scenarios in this PWERM, as the OPM captures the distribution of exits appropriate for a private company where there are numerous future pathways. The Company used three IPO scenarios to capture the expected range of potential IPO exit values and timings. The cumulative probability weighting of the non-IPO scenario was 50%, and the cumulative probability weighting of the IPO scenarios was 50%. This probability weighting reflected the considerable risk at that time associated with the Company achieving a successful IPO exit. This methodology is consistent with the hybrid method as described in the Practice Guide, Chapter 6, section 6.48-6.54. The Company proposes to modify the disclosure in the Amendment as shown in the Exhibit to more accurately explain the approach that it used.

As the factors you indicated as the primary drivers to explain the increase in value per share of common stock between April 30, 2013 and August 15, 2013 appear to be from early stage of development, it is still not clear to us why these factors substantiate the increase in fair value. Tell us what information you obtained from the market prices of recent IPOs and how this was used to corroborate the 2013 fair value determinations.

Response to Comment 1, fifth bullet:

In response to the Staff's comment, the Company advises the Staff as follows: The increase in value per share of common stock between April 30, 2013 and August 15, 2013 was primarily driven by the increased likelihood of an IPO in the near term. The development milestones described in the Registration Statement contribute to the likelihood of the Company successfully completing an IPO. The Company proposes to revise the disclosure in the Amendment as shown in the Exhibit to make this more clear.

The Company used two types of information from the market prices of recent IPOs to corroborate the IPO enterprise valuation assumed in the Company's PWERM IPO scenarios, pursuant to the Practice Guide, Chapter 6, section 6.24b. First, the Company calculated the ratio of pre-IPO valuation to post-money valuation of the last private financing round for recent IPO companies. Applying the range of these ratios to the Company's post-money Series C valuation yielded a range of potential pre-IPO valuations. The valuations the Company used in the PWERM IPO scenarios fell comfortably within this range.

Second, the Company evaluated the actual IPO enterprise values for selected companies that the Company believed were more directly comparable to it. The values of

cardiovascular therapeutic companies fell below the range of IPO values assumed by the Company in the PWERM, while the values of platform-focused companies were substantially above the assumed values. Because the Company works in multiple therapeutic areas, and employs a proprietary biased ligand research platform, a valuation between these two sets of companies was appropriate for use in the PWERM.

The pre-money valuation range determined using these two analyses was \$200 million to \$250 million. This range was in line with the initial thoughts of the investment bankers regarding a potential valuation in connection with the Company's IPO and is also in line with the IPO price range currently being proposed.

We do not believe the factors you listed on page 68 substantiate the significant difference in value between the midpoint of the preliminary price range and \$1.20, your last valuation on August 15, 2012. In particular, we do not believe that the proceeds from the offering or the rights of the preferred stockholders should be considered in this discussion. Please provide revised disclosure or tell us why you believe no stock-based compensation is required to be recorded.

Response to Comment 1, sixth bullet:

In response to the Staff's comment, the Company advises the Staff as follows: The change in valuation between August 15, 2013 and the preliminary price range for the IPO was driven primarily by the increase in the probability of a successful IPO during that time period. The determination that the probability of a successful IPO had increased was in turn informed by the first two factors listed on page 68 of the Registration Statement. The Company proposes to modify the disclosure in the Amendment as shown in the Exhibit to remove the reference to the rights of the preferred stockholder and the reference to the proceeds from the offering.

Please clarify on page 64 the vesting period for the options granted in 2013.

Response to Comment 1, seventh bullet:

In response to the Staff's comment, the Company proposes to modify the disclosure in the Amendment as shown in the Exhibit.

2. We acknowledge your response and revised disclosures to our comment 2. Please note the following once your IPO price has been determined:

Please provide quantitative disclosures in addition to the qualitative disclosures provided explaining the difference between the estimated offering price and the fair value of your most recent equity issuance.

Response to Comment 2, first bullet:

The Company acknowledges the Staff's comment.

We may have additional comments on your accounting for stock compensation and related disclosure once you have disclosed an estimated offering price.

Response to Comment 2, second bullet:

The Company acknowledges the Staff's comment.

* * * *

As requested by the Staff, the Company acknowledges that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the Company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the Company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

* * * *

Please send any additional comment letters concerning the Amendment to Maxine Gowen, Chief Executive Officer of the Company, and Jim Fulton of Cooley LLP at the email addresses previously provided to the Staff. Please direct any questions or comments concerning the Amendment or this response letter to either the undersigned at (703) 456-8058 or to Mr. Fulton at (212) 479-6103.

Very truly yours,

/s/ Brent B. Siler

Brent B. Siler

cc: Maxine Gowen, Ph.D., Trevena, Inc.
Peter N. Handrinos, Latham & Watkins

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Exhibit A

- the superior rights and preferences of the preferred stock relative to our common stock at the time of each grant;
- our results of operations and financial position;
- the status of our research and development efforts;
- our stage of development and business strategy;
- the lack of an active public market for our capital stock; and
- the likelihood of achieving a liquidity event, such as an IPO or sale of our company in light of prevailing market conditions.

The per share estimated fair market value of our common stock in the table below represents the determination by our board of directors of the fair market value of our common stock as of the date of grant, taking into consideration the various objective and subjective factors described above, including the conclusions, if applicable, of contemporaneous independent third-party valuations of our common stock as discussed below. We computed the per share weighted average estimated fair value for stock option grants based on the Black-Scholes option pricing model. The following table sets forth information about our stock option grants since January 1, 2012:

Date of Issuance	Number of Shares Underlying Options Granted	Exercise Price per Share	Estimated Fair Market Value per Common Share	Estimated Fair Value of Options per Share
February 2, 2012	63,707	\$ 0.68	\$ 0.68	\$ 0.56
April 19, 2012	125,805	0.68	0.68	0.56
October 17, 2012	32,258	0.68	0.68	0.56
June 17, 2013	1,057,247	2.23	2.23	1.55
June 19, 2013	26,655	2.23	2.23	1.55
August 6, 2013	39,490	2.23	2.23	1.55
August 12, 2013	98,724	2.23	2.23	1.55
August 27, 2013	69,286	7.44	7.44	5.21
September 3, 2013	197,449	7.44	7.44	5.27
September 26, 2013	122,579	7.44	7.44	5.21

Our options granted in 2013 generally vest over four years with one-sixteenth of the shares subject to the applicable option vesting every three months, with the following exceptions: four option grants, for an aggregate total of 184,616 shares, vest over four years with one-eighth of the shares subject to the applicable option vesting six months following the applicable vesting commencement date and one-sixteenth of the remaining shares vesting every three months thereafter; two option grants, for an aggregate total of 3,226 shares, vest over four years with one-fourth of the shares subject to the applicable option vesting one year following the applicable vesting commencement date and one-sixteenth of the remaining shares vesting every three months thereafter; one option for 197,450 shares vests over four years with one-fourth of the shares vesting one year after the vesting commencement date and one-thirty-sixth of the remaining shares vesting each month thereafter; and one option grant for 17,742 shares vests over three years with one-twelfth of the shares vesting every three months.

In determining the exercise prices of the options set forth in the table above granted since January 1, 2012, our board of directors considered the most recent available independent third-party valuations of our common stock, which were prepared as of July 8, 2010, April 30, 2013 and August 15, 2013, and based its determination in part on such valuations, with the analyses summarized below.

The intrinsic value of all outstanding vested and unvested options of \$30.2 million is based on a per share price of \$13.00, the midpoint of the price range set forth on the cover page of this prospectus, 2,804,264 shares of common stock issuable upon the exercise of options outstanding as of September 30, 2013 and a weighted average exercise price of \$2.23 per share.

Stock option grants from January 1, 2012 to October 17, 2012

Our board of directors granted stock options from January 1, 2012 through October 17, 2012, with each having an exercise price of \$0.68 per share. The exercise price per share was supported by an independent third-party valuation of \$0.68 per common share as of July 8, 2010 in connection with our initial Series B and Series B-1 preferred stock issuances. In conducting this valuation, we estimated the value of our common stock using the option pricing method. The option pricing method treats common stock as options on the enterprise's value, with exercise prices based on liquidation preferences set forth in the terms of the preferred stockholders agreements. The enterprise value was determined based upon the Series B preferred stock pre-money valuation and this value was employed in the option pricing method for valuing the common stock. We completed the Series B and Series B-1 preferred stock issuances, at \$1.00 per share, which is effectively \$6.20 per share of common stock on an as-converted basis, for up to \$39.3 million in July 2010. The common stock is treated as a call option that gives its owner the right to buy the underlying net assets at a predetermined or "strike" price at a liquidity event, such as an IPO, merger or sale. The option pricing method considers the various terms of the preferred stock, including the level of seniority among the securities, dividend policy, conversion ratios, and cash allocations upon liquidation of the enterprise. In addition, the option pricing method implicitly considers the effect of the liquidation preference as of the appropriate date in the future, not as of the valuation date. Under the option pricing method, value is allocated to the common stock only if the net assets of the enterprise exceed the liquidation preference at the time of the liquidity event. The option pricing method commonly uses the Black-Scholes formula to price the common stock as a call option. The Black-Scholes assumptions used in the July 8, 2010 valuation were determined as follows:

- The current value per share of common stock was management's estimate of fair value based on the pre-money Series B financing value.
- The exercise price was calculated based on the aggregate liquidation preferences of the outstanding Series A and B preferred stock.
- The time until expiration was based on the estimated time horizon for common stock value. A four-year time horizon was used based on our early stage of development and strategic plans. It was assumed that if our research and development plans progress as planned, that a liquidation event would occur within four years; if the development plans fail or have limited success, it was assumed that we would liquidate for less than the preferred stock preference or that we would recapitalize, in either case leaving the common stock virtually worthless.
- The volatility factor of 100% was based on comparable companies in the U.S. biotechnology market with market capitalizations less than \$100 million.

A discount for lack of marketability of 50% was then applied to the resulting Black-Scholes value. A discount for lack of marketability was applied to reach the final valuation of the common stock because, as we are a private company, there are impediments to liquidity, including lack of publicly available information and the lack of a trading market. Our determination of the discount included factors such as our proximity to an IPO, reduced funding risk and our progress made on our clinical development program. The discount for marketability decreases as we move closer to marketability of common shares through an event, such as an IPO, and as the risk declines for our company as milestones are achieved.

We concluded that the value of our company remained relatively unchanged from July 8, 2010 through October 17, 2012. This was primarily attributable to the absence of a significant product inflection point, insofar as TRV027, our lead asset, was in a Phase 2a clinical trial from the end of 2010 into the first half of 2012, and our continued efforts to obtain financing to support our liquidity needs and funding of operating expenses. The specific facts and circumstances considered by our board of directors included the following:

- We had principally financed our operations through private placements of preferred stock and debt. In 2010 and 2011, we successfully closed and received \$17.5 million in each year. The original issuance per share price of \$1.00 per share, which is effectively \$6.20 per share of common stock on an as-converted basis, for the preferred stock remained unchanged in 2010 and 2011.
- There were no preferred stock issuances in 2012 despite fund raising efforts and our cash and cash equivalents at the end of 2012 were \$6.7 million. At December 31, 2011, we had cash and cash equivalents of \$17.1 million.
- In anticipation of completing a financing in 2012, we had a valuation conducted in October 2012 that indicated that the value of our common stock was less than \$0.01, and as a result, we ceased making additional option grants until after completion of a financing.
- We had no completed clinical trial data for any of our programs from the end of 2010 through the end of 2011.

Stock options granted on June 17, 2013 and July 29, 2013

Our board of directors granted stock options on June 17, 2013 and July 29, 2013, with each having an exercise price of \$2.23 per share. Three of these grants became effective upon later dates (June 19, 2013, August 6, 2013 and August 12, 2013) when the respective recipient initially became an employee of the company. The exercise price per share was supported by the most recent independent third-party valuation of \$2.23 per common share as of April 30, 2013. In conducting this valuation, we utilized the option pricing model backsolve method to calculate our enterprise value utilizing the May 2013 Series C financing at \$1.632 per share. Additionally, we estimated the value of our common stock using the option pricing method, consistent with the methodology noted above in the July 8, 2010 valuation. Changes in assumptions since the July 8, 2010 valuation included, adjusting the enterprise value based upon the Series C financing raise at \$1.632 per share, changing the expected term to 2.5 years based on updated management estimates, utilizing volatility of 80.5% based on the median of comparable companies and reducing the discount for lack of marketability to 30%. The comparable companies we used were publicly traded companies selected primarily on the basis of the lead indications they have under development. These companies consisted of Pain Therapeutics, Acura Pharmaceuticals, Horizon Pharma, Zogenix and Neurocrine Biosciences, each of which have lead indications focused on pain/neurological disorders, and Aastrom Biosciences, Pozen and Cytokinetics, each of which specializes in cardiovascular indications. All of the selected companies have market capitalizations of less than a billion dollars and low or no product revenue which we believe make them representative of our size and stage of development.

Stock options granted on August 27, 2013 and September 26, 2013

Our board of directors granted stock options on August 27, 2013 and September 26, 2013 with an exercise price of \$7.44 per share. One of these grants became effective upon a later date (September 3, 2013) when the recipient initially became an employee of our company. The exercise price per share was supported by the most recent third-party valuation of \$7.44 per common share as of August 15, 2013. In conducting this valuation, we used the probability weighted expected return method, or PWERM, approach with two main categories of discrete scenarios—a non-IPO scenario and multiple

IPO scenario, which was valued using the market adjusted option pricing method, which captures the distribution of exits appropriate for a private company where there are numerous potential future pathways as yet poorly defined, and a weighting of 50% to the IPO scenarios included under the PWERM approach, which assumed that we achieve an IPO exit in the near-term. This 50% probability of an IPO exit in the near term was selected based on the changing dynamics of market receptivity for biotech IPOs and the early stage of our preparations.

To calculate our enterprise value under the market adjusted option pricing method, we started with the enterprise value calculated in the April 30, 2013 valuation described above and increased that value by 9.7% based upon the average change from April 30, 2013 through August 15, 2013, in enterprise value of three relevant market indices (the NASDAQ Biotechnology Index, iShares NASDAQ Biotechnology Index and SPDR S&P Biotech). We chose not to use the mean change in the enterprise values of the comparable companies because such values did not indicate a trend in biotech company valuations, but rather were significantly influenced by company-specific events. We then further adjusted the increased enterprise value by 13.3% based upon the estimated value created with the cash we utilized between April 30, 2013 and August 15, 2013 using a rate of return of 20% to reflect the interim incremental value accretion that bridges the gap between major value inflection points. From this enterprise value we then estimated the value of our common stock using the option pricing method, consistent with the methodology noted above in the July 8, 2010 and April 30, 2013 valuations. The implied value per share of common stock in the option pricing method was \$2.48 per share.

Our PWERM approach employed three IPO scenarios and weighted those as described below. We estimated our enterprise value under these IPO scenarios using the guideline public company method under the market approach. Under the guideline public company method, we considered an average of pre-money values for IPOs completed by biotechnology companies from the beginning of 2012 through the middle of 2013. We considered the value of cardiovascular therapeutic companies, which were typically at the low end of the comparable company range, and the value of platform-focused companies, which were typically at the high end of the comparable company range. The valuation range that we selected was between the valuation ranges for the two sets of companies because we work in multiple therapeutic areas, and employ a proprietary biased ligand research platform. In addition, we considered a medium multiple of invested capital as indicated by the IPOs. For the complete set of biotechnology companies that went public between the beginning of 2011 through the middle of 2013, the median step-up factor was 1.1x. However, for biotechnology companies with lead programs, partnerships with pharmaceutical companies and robust pipelines, the range of this multiple has been 1.2x-1.4x. Given the general positive investor sentiment in the public markets for biotech IPOs, we used a factor of 1.3x as the upper end of the enterprise value range for our company, which is at a slight premium to the historical median.

For each of the various IPO scenarios, an equity value was estimated and the rights and preferences for each shareholder class were considered to allocate the enterprise value to common shares. The common share value was then multiplied by a discount factor reflecting the calculated discount rate and the timing of the event. Lastly, the common share value was multiplied by an estimated probability for each scenario. The probability and timing of each scenario were based on discussions between our board of directors and our management team.

We used the following three possible IPO scenarios under the PWERM, weighing them as indicated:

- an IPO at an assumed valuation in the fourth quarter of 2013, weighted at 30%;

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- an IPO at a lower assumed valuation in the fourth quarter of 2013, weighted at 12.5%, and
 - an IPO at the higher assumed valuation in the first quarter of 2014, weighted at 7.5%.

A discount for lack of marketability of 10% was then applied to the resulting value for each IPO scenario. This discount was significantly less than the 30% applied to the April 30, 2013 option pricing model to reflect that the IPO scenarios assumed that we have moved closer to marketability of shares of common stock in anticipation of a successful IPO. The average implied value per share of common stock in the IPO scenarios was \$12.44 per share.

The primary drivers for the increased value per share of common stock between April 30, 2013 and August 15, 2013 were:

- The likelihood of a successful IPO increased as a result of the positive early data from our Phase 1b trial for TRV130, the advancement of TRV734, increased market receptivity to biotech IPOs, the decision by our board of directors in August 2013 to initiate the process for an initial public offering and the selection of co-lead bankers.
- The increased valuations associated with early-stage biotech IPOs.

Determination of estimated IPO offering price

In late October 2013, we determined the estimated initial public offering price per share of this offering, as set forth on the cover page of this prospectus, to be between \$12.00 and \$14.00 per share. We note that, as is typical in IPOs, the preliminary range was not derived using a formal determination of fair value, but was determined based upon discussions between us and the underwriters. Among the factors considered in setting the preliminary range were our prospects and the history of and prospects for our industry, the general condition of the securities markets and the recent market prices of, and the demand for, publicly traded common stock of generally comparable companies. In addition to this difference in purpose and methodology, we believe that the difference in value between the midpoint of the preliminary price range and management's determination of the fair value of our common stock of \$7.44 per share as of August 15, 2013, the date of our last valuation, was primarily the result of a change in the probability of a near-term IPO from 50% to 100% given that the pre-money valuation range used in the IPO scenarios considered in the August 15, 2013 valuation is in line with the proposed offering range for the IPO. The change in probability of a successful near-term IPO is based on the following factors:

- We received promising final data from the 30 subjects in our Phase 1b clinical trial for TRV130 in early October, which were not factored into the August 15, 2013 valuation.
- Subsequent to August 15, 2013, we completed several critical events necessary to proceed toward an IPO, including the confidential submission of a registration statement for an IPO in September, the public filing of the registration statement in October and testing-the-waters meetings with potential IPO investors in October that led us to believe an IPO was potentially feasible.

In addition, the estimated initial public offering price range necessarily assumes that the IPO has occurred, that a public market for our common stock has been created and that our preferred stock has been converted into common stock in connection with the IPO, and therefore excludes any discount for lack of marketability of our common stock, any discount to reflect the time value of money for the period from the assumed IPO dates back to the valuation date, any preferences of our preferred stock and any assumption of less than 100% probability of an IPO, all of which were factored into the August 15, 2013 valuation.

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