United States securities and exchange commission logo

June 18, 2020

Sanjiv K. Patel, M.D.
President and Chief Executive Officer
Relay Therapeutics, Inc.
399 Binney Street, 2nd Floor
Cambridge, MA 02139

Re: Relay Therapeutics, Inc.
Draft Registration Statement on Form S-1
Submitted May 22, 2020
CIK No. 0001812364

Dear Dr. Patel:

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.

Draft Registration Statement on Form S-1

Overview, page 1

1. We note your statements regarding your differentiated approach and how it enables you to select product candidates with a "potentially higher probability of clinical success." Given the stage of your product candidates and the length of time and uncertainty involved in product candidate development, please revise throughout the prospectus to remove any implication that your product candidates are more likely than others to receive approval from the U.S. Food and Drug Administration (FDA) or comparable regulators.
2. Given the status of your development programs, please tell us the basis for your claim on page 1 that RLY-1971 and RLY-4008 are potent and selective inhibitors of SHP2 and FGFR2, respectively.

3. Please revise to balance your Summary presentation by highlighting the challenges you face in advancing your novel Dynamo Platform. In this regard, we note your dependence on your collaboration with D.E. Shaw Research LLC, the limitations on that collaboration by its terms, which are discussed beginning on page 129, and the lack

of alternative to the
Anton 2 supercomputer.
4. Please revise to include a brief definition here of what you mean by "genetically validated
target proteins."
5. The illustration provided in Figure 1 on pages 2 and 97 contains text that is illegible.
Please revise this figure accordingly.
Our Programs, page 3

6. We refer to the program tables on pages 3, 92, and 103. Please revise these tables to
remove the discovery-stage programs (i.e., rows 4 through 6). In this regard, it is
premature to prominently highlight each of these programs given that you do not identify
a specific molecule that you seek to develop and you do not discuss IND-enabling
studies. Additionally, please include a column for each of Phase 1, Phase 2, and Phase 3.
Please also remove the footnote indicating that a Phase 3 trial may not be required if
Phase 2 is registrational as this statement is also premature.

7. We note your references to your product candidates as "first-in-class" or "best-in-class" on
page 4 and throughout the registration statement. These terms suggest that the product
candidates are effective and likely to be approved. Please delete these references
throughout your registration statement. If your use of these terms was intended to convey
your belief that the products are based on a novel technology or approach and/or is further
along in the development process, you may discuss how your technology differs from
technology used by competitors and, if applicable, that you are not aware of competing
products that are further along in the development process. Statements such as these
should be accompanied by cautionary language that the statements are not intended to
give any indication that the product candidates have been proven effective or that they
will receive regulatory approval.
Implications of Being an Emerging Growth Company and a Smaller Reporting Company, page 7

8. Please 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.
Use of Proceeds, page 65

9. Please revise to disclose an estimate of how far in the development of your "drug
discovery and clinical development efforts" the proceeds from this offering will allow you

to reach with respect to each product candidate. Also, please disclose the total estimated
cost of each of the specified purposes for which the net proceeds are intended to be used,
and, if material amounts of other funds are necessary to accomplish the specified
purposes, provide an estimate of the amounts of such other funds and the sources thereof.
Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies and Use of Estimates
Determination of Fair Value of Common Stock, page 89

10. 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 the IPO 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.

Business, page 91

11. We refer to your disclosures throughout this section concerning numerous pre-clinical studies/models/assays. For each study that you reference, please revise to include information about the nature, design and results of that particular study so that investors have a basis to assess the applicable observation that you present, rather than state your conclusion, e.g., that your product candidate acts as a potent inhibitor. Without limitation, your discussion should identify the type of cells and methods utilized in the referenced study. Your disclosure also should indicate whether the results were or were not statistically significant and you should include all p-values.

Our solution, RLY-1971, page 105

12. We note your discussion of the experimental and computational techniques used to identify RLY-1971 where you conclude that simulations enabled your medicinal chemists the ability to design a more potent inhibitor of SHP2. Please expand your disclosure to briefly explain why this simulation (revealing that the loop flips downwards, close to where the small molecule binds) enabled a "more potent inhibitor of SHP2."

RLY-1971 as a monotherapy, page 107

13. Please tell us how many times you tested the inhibitors in the studies described in Figures 10, 12, and 14 on pages 107 to 110 and whether the graphs or charts illustrate the average or mean of the studies conducted.

Our clinical development plan, page 110

14. For RLY-1971, please disclose the current size and the anticipated size of the clinical trial population.

Our solution, RLY-4008, page 113

15. We note your comparison of RLY-4008 to other inhibitors in pre-clinical models on pages 114-118. As you have not conducted head-to-head clinical trials, please tell us why you believe it is appropriate to include these comparisons. Include in your response whether you expect to be able to rely on this data to support an application for marketing approval from the FDA or comparable regulatory body for commercialization of RLY-4008.

Collaboration and License Agreement with D. E. Shaw Research, LLC, page 129

16. Please revise to clarify whether any of your product candidates are currently co-owned with D. E. Shaw Research. To the extent that any of your product candidates are co-owned, please also revise the Summary accordingly. Please also reconcile your disclosure on page 102 that states you retain worldwide development and commercialization rights to all of your programs.

Item 16. Exhibits and Financial Statement Schedules, page II-3

17. To the extent that you are redacting information pursuant to Item 601(b)(10)(iv) of Regulation S-K, please mark the exhibit index to indicate that portions of your exhibits have been omitted and remove reference to "confidential treatment." See Item 601(b)(10)(iv) of Regulation S-K.

You may contact Rolf Sundwall at 202-551-3105 or Terence O'Brien at 202-551-3355 if you have questions regarding comments on the financial statements and related matters. Please contact Jeffrey Gabor at 202-551-2544 or Christine Westbrook at 202-551-5019 with any other questions.

Sincerely,

FirstName LastNameSanjiv K. Patel, M.D.

Division of Corporation Finance

Comapany NameRelay Therapeutics, Inc.

Office of Life Sciences

cc: Gabriela Morales-Rivera, Esq.