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

DIVISION OF
CORPORATION FINANCE

June 25, 2021

Todd Harris, Ph.D.
President and Chief Executive Officer
Tyra Biosciences, Inc.
2333 State Street, Suite 201
Carlsbad, CA 92008

Re: Tyra Biosciences, Inc.
Draft Registration Statement on Form S-1
Submitted May 28, 2021
CIK No. 0001863127

Dear Dr. Harris:

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

Prospectus Summary
Our Programs, page 2

1. Please include treatment indications in your pipeline table (e.g., MIBC or ICC). Additionally, please explain what is involved in "lead optimization" phase as opposed to a more general discovery phase. While we will consider your response, we do not currently believe that the lead optimization is a distinct discovery phase and should thus be depicted under a column labeled "discovery." A textual discussion of the program is likely a more appropriate place to make distinctions regarding different segments within a particular phase.

Our Leadership Team and Investors, page 4

2. We note that you identify certain entities as investors in your company; however, some do not appear to be among your principal stockholders as disclosed on pages 166 and 167. Specifically, BVF Partners, L.P., Cormorant Asset Management, Janus Henderson Investors, and Logos. If material, please expand your disclosure to describe the nature of each named entity's investment in you and explain to us why including this information is appropriate. Please also explain in your response your plans to update investors about any changes these entities make with respect to their investments in the company.

Industry and Other Data, page 76

3. We note your statements regarding market data used in the prospectus, including that the sources of the information do not guarantee the accuracy or completeness of the information and that investors are cautioned "not to give undue weight" to estimates. Please revise these statements to eliminate any implication that investors are not entitled to rely on the information included in your registration statement.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies, Significant Judgments, and Use of Estimates
Determination of Fair Value of Common Stock, page 96

4. 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. Please also discuss how you considered recent preferred share issuances. This information will help facilitate our review of your accounting for equity issuances, including stock compensation. Please discuss with the staff how to submit your response.

Our Strategy, page 102

5. We note disclosure here and elsewhere in the prospectus in which you refer to accelerated FDA approvals for therapies developed by other companies and that your products candidates may receive similar accelerated approvals. Please revise your prospectus to balance this disclosure with the fact that you have not submitted an application for accelerated approval and that the FDA's accelerated approval pathway may not lead to a faster development process or regulatory review and does not increase the likelihood that a product candidate will receive approval.

In vivo models, page 107

6. We note your disclosure that your use of in vivo models allows you to "significantly" condense your "drug development timeline." This statement implies that your product candidates are likely to be approved. Please revise this statement to remove

any implication that you will be successful in mitigating the risk of uncertainty with regard to clinical development or that you will be successful in commercializing your product candidates in a rapid or accelerated manner.

FGFR Inhibitors, page 108

7. We note your comparisons to erdafitinib and pemigatinib, drugs approved by the FDA, as well as infigratinib and futibatinib. Please tell us on what basis you believe you are able to make these comparisons given your early stage of development and the lack of any head-to-head clinical trials or, alternatively, delete these inappropriate comparisons. Please revise the prospectus throughout accordingly.

Clinical Development plans for TYRA-300, page 115

8. We note your statement that you plan to pursue accelerated approval if data from the Phase 2 trial is sufficient to support marketing authorization. Please revise to disclose whether you have received any indication from the FDA that your Phase 2 clinical trail will be treated as a registrational clinical trial such that a Phase 3 trial will not be required.

Competition, page 122

9. Please disclose whether, to your knowledge, any of your competitors are developing cancer treatments for the same indications for which you are developing your treatments.

Management
Non-Employee Directors, page 142

10. Please revise the management biography for Jake Simson, Ph.D. to clearly identify his other employment in the last five years. See Item 401 of Regulation S-K.

General

11. 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

You may contact Kristin Lochhead at 202-551-3664 or Terence O'Brien at 202-551-3355 if you have questions regarding comments on the financial statements and related matters. Please contact Dillon Hagius at 202-551-7967 or Chris Edwards at 202-551-6761 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Life Sciences

cc: Matthew T. Bush