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

DIVISION OF
CORPORATION FINANCE

Mailstop 4720

November 16, 2015

Via E-mail
Harry E. Gruber, M.D.
President and Chief Executive Officer
Tocagen Inc.
3030 Bunker Hill Street, Suite 230
San Diego, CA 92109

Re: Tocagen Inc.
Draft Registration Statement on Form S-1
Submitted October 23, 2015
CIK No. 0001419041

Dear Dr. Gruber:

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.

Prospectus Summary
Overview, page 2

1. Please revise your discussion starting with the first full paragraph on page 2 to briefly describe the annual number of cases of recurrent high grade glioma. Please revise the following paragraph to briefly discuss the number of competitors developing immunotherapies.

2. Please revise your disclosure to briefly discuss the FDA regime for trials, i.e., number needed. In addition, please disclose your timeframe for completion of the Phase 3 trials and the additional anticipated costs for Phase 2 and Phase 3.

Risk Factors
"Our clinical trials may fail to demonstrate safety…," page 16

3. Please disclose any serious adverse events reported in your clinical trials to date.

Use of Proceeds, page 50

4. For each product candidate that you intend to develop with the proceeds from this offering, please state the anticipated stage of development that you expect to reach using the proceeds of the offering.

Management's Discussion and Analysis of Financial Condition and Results of Operations
Critical Accounting Policies and Significant Judgments and Estimates
Stock-Based Compensation, page 62

5. We may have additional comments on your accounting for equity issuances including stock compensation and beneficial conversion features. Once you have an estimated offering price, please provide us an analysis explaining the reasons for the differences between recent valuations of your common stock leading up to the IPO and the estimated offering price.

Business, page 74

Overview, page 74

6. Please disclose all investigational new drug applications ("INDs") that you have submitted to the FDA as well as the indication(s) and sponsor(s) for any active INDs related to your product candidates.

7. At first use, please provide an explanation of your "two preferred delivery methods." Please make corresponding changes to the Prospectus Summary.

8. At first use, please provide a brief explanation for each of the following scientific terms to enable a lay investor to understand:

   - "resection injection trial;"
   - "first and second recurrent HGG;" and
   - "systemically administered antibody drug conjugates."

   Please make corresponding changes to the Prospectus Summary.

9. At first use, please provide a brief explanation of the requirements for and benefits of Fast Track designation and orphan drug designation. Please also include an estimate of the number of people in the United States currently diagnosed with recurrent high grade

glioma ("HGG") as well as glioblastoma ("GBM"). Lastly, please provide a brief explanation of how orphan drug designation for GBM may affect the approval and marketing of a product candidate for HGG. Please make corresponding changes to the Prospectus Summary.

Our RRV Platform, page 79

10. At first use, please provide a brief explanation of the term "Type 1 interferon" for a lay investor to understand.

11. Please expand your explanations of the graphics on page 81 to provide more context. For example, please explain the significance of "Day 1" to "Day 7" in the top graphic. In the bottom graphic, please explain the significance of base pairs and what they measure.

Clinical Development of Toca 511 & Toca FC
Ongoing Phase 1 Clinical Trials, page 85

Ongoing Resection Injection Trial, page 85

12. At first use, please provide brief explanations of the terms "confidence interval" and "stable disease" for a lay investor to understand.

13. Please expand the discussion of your graphic on page 87 to provide a brief description of the logrank test. Please also include a brief explanation of the term "censored."

Pooled Efficacy Data for Ongoing Resection and Intratumoral Injection Trials, page 88

14. Please define the term "Clarke 2011."

Pooled Safety Data, page 90

15. Please disclose all treatment-related serious adverse events.

Intellectual Property, page 101

16. Please revise your patent-related disclosure to clarify which of your material patents are owned and which are licensed from third parties.

17. Please distinguish which of your material patents and patent applications are granted or pending in the United States and identify other applicable jurisdictions in which you have patents granted or patent applications pending.

Competition, page 101

18. To the extent known, please disclose the stages of development for the competing product candidates listed.

Management
Non-Employee Directors, page 118

19. Please describe the business experience of Franklin Berger during the past five years.

General

20. Please confirm that the images included in your draft registration statement are all of the graphic, visual or photographic information you will be including. If you intend to use any additional images, please provide us proofs of such materials. Please note that we may have comments regarding this material.

21. 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 Mary Mast at (202) 551-3613 or Sharon Blume at (202) 551-3474 if you have questions regarding comments on the financial statements and related matters. Please contact Christina De Rosa at (202) 551-3577, Michael Clampitt at (202) 551-3434 or me at (202) 551-3675 with any other questions.

Sincerely,

p.p. /s/ Michael Clampitt

Suzanne Hayes
Assistant Director
Office of Healthcare and Insurance

cc: Via E-mail
Karen E. Deschaine, Esq.
Cooley LLP
4401 Eastgate Mall
San Diego, California 92121