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

DIVISION OF
CORPORATION FINANCE

January 24, 2024

Francis Knuettel II
Interim Chief Executive Officer
Chromocell Therapeutics Corporation
4400 Route 9 South, Suite 1000
Freehold, NJ 07728

Re: Chromocell Therapeutics Corporation
Amendment No. 9 to Registration Statement on Form S-1
Filed January 16, 2024
File No. 333-269188

Dear Francis Knuettel II:

We have reviewed your amended registration statement and have the following comments.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe a comment applies to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to this letter, we may have additional comments. Unless we note otherwise, any references to prior comments are to comments in our October 24, 2023 letter.

Amendment to Form S-1 filed January 16, 2023

Prospectus Summary
Business
Equity Line of Credit, page 1

1. We note your disclosure that you are "negotiating an arrangement with the Holder of the Investor Note to enter into an Equity Line of Credit (the “ELOC”) subsequent to the IPO." Please revise to clearly disclose, if true, that an equity line of credit agreement has not been, and may never be, finalized and executed and that there is no assurance that you will enter into an equity line of credit agreement. In addition, please add a risk factor discussing the various risks relating to the potential equity line of credit agreement you are negotiating. For example only, you should discuss the potential dilutive effect, the potential impact on your liquidity, and any potential negative impact the equity line of credit agreement may have.

Use of Proceeds, page 42

2. Please update your disclosure to discuss the approximate amount of proceeds you intend to use for each of the Spray Formulations you licensed from Benuvia Operations, LLC or otherwise advise.

Business, page 53

3. We note you recently "entered into an exclusive licensing agreement (the “Benuvia License Agreement”) with Benuvia Operations, LLC (“Benuvia”) for a sublingual formulation of a Diclofenac spray for the treatment of acute pain (the “Diclofenac Spray Formulation”), a Rizatriptan sublingual spray formulation (the “Rizatriptan Spray Formulation”) and an Ondansetron sublingual spray formulation (the “Ondansetron Spray Formulation”), diversifying [y]our pipeline of non-opioid pain treatment therapies, while adding therapeutic options for related conditions." Please update your disclosure throughout your business section where appropriate to discuss your strategy and development plans, including a discussion of the regulatory pathway(s) you plan to pursue for each of these product candidates or otherwise advise.

Our Strategy, page 54

4. We note you recently entered into a license agreement with Benuvia Operations, LLC for certain sublingual spray formulations of certain product candidates. Please update your disclosure to discuss your development strategy for these product candidates or otherwise advise.

Overview, page 54

5. You state that the Diclofenac spray has started clinical development in human volunteers. Please revise your disclosure to identify your current stage of clinical development for your spray formulation of Diclofenac and disclose the material details of the "development in human volunteers" that has been conducted to date or you have started.

6. You state that preliminary pharmacokinetics suggest that the Diclofenac spray formulation may have a faster onset of action than oral Diclofenac tablets. Please discuss the pharmacokinetic results and how you concluded that the Diclofenac spray formulation may have a faster onset of action.

7. You state that Rizatriptan is thought to be superior to Sumatriptan by a number of clinical measures. Please provide your basis for this statement. In addition, please discuss if Sumatriptan is considered a competitor of Rizatriptan.

8. We note your Benuvia License Agreement appears to cover additional "Spray Formulations." Please revise your disclosure to clarify the other spray formulations you plan to develop pursuant to the Benuvia License Agreement or otherwise advise. Your disclosure should discuss the current stage of clinical development and the results of any

material trials conducted to date as well as the material terms of any ongoing or planned trials for the other "Spray Formulations" you plan to develop.

Our Addressable Market, page 57

9. If material, please update your disclosure to discuss the market(s) for the Spray Formulations you licensed from Benuvia Operations, LLC or otherwise advise.

Intellectual Property, page 58

10. We note your disclosure on page 86 that the "Diclofenac Spray Formulation is patented." Please update your disclosure here to discuss the material patent(s) covered by your license with Benuvia Operations, LLC, including the type(s) of patent protection, the expiration dates and the applicable jurisdictions.

Certain Relationships and Related Party and Other Transactions, page 86

11. We note your discussion of the Benuvia License Agreement. Please include a discussion all material terms of the agreement including a description of the rights and obligations of the parties thereto, financial terms including amounts paid to date, aggregate milestone amounts to be paid or received and the termination provisions.

Condensed Interim Financial Statements for the Nine Months ended September 30, 2023
Note 8. Subsequent Events, page F-30

12. Revise to provide disclosure about your accounting for the Benuvia License Agreement, including how you valued the 384,226 common shares issued in connection with the Agreement.

Please contact Kristin Lochhead at 202-551-3664 or Daniel Gordon at 202-551-3486 if you have questions regarding comments on the financial statements and related matters. Please contact Doris Stacey Gama at 202-551-3188 or Jason Drory at 202-551-8342 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Life Sciences

cc: David Danovitch, Esq.