

DIVISION OF CORPORATION FINANCE

May 10, 2021

Shalabh Gupta, M.D.Chief Executive Officer, President and ChairmanUnicycive Therapeutics, Inc.5150 El Camino Real, Suite A-32Los Altos, CA 94022

Re: Unicycive Therapeutics, Inc. Amendment No. 3 to Draft Registration Statement on Form S-1 Submitted April 29, 2021 CIK No. 0001766140

Dear Dr. Gupta:

We have reviewed your amended 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.

Amendment No. 3 to Draft Registration Statement on Form S-1

BUSINESS

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1. Please file your Ascent Master Services Agreement as an exhibit or provide your analysis identifying how you determined that the agreement did not need to be filed as an exhibit. Please refer to Item 601(b)(10) of Regulation S-K.

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You may contact Ibolya Ignat at 202-551-3636 or Brian Cascio at 202-551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Jeffrey Gabor at 202-551-2544 or Celeste Murphy at 202-551-3257 with any other questions.

Sincerely,

Division of Corporation Finance Office of Life Sciences

cc: Jeffrey Fessler, Esq.