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

DIVISION OF
CORPORATION FINANCE

May 29, 2020

David Hilbert
President and Chief Executive Officer
Arcellx, Inc.
25 West Watkins Mill Road, Suite A
Gaithersburg, MD 20878

Re: Arcellx, Inc.
Draft Registration Statement on Form S-1
Submitted May 1, 2020
CIK No. 0001786205

Dear Dr. Hilbert:

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.

DRS Submitted May 1, 2020

Prospectus Summary
Overview, page 1

1. Given the status of development, please revise your statements on page 1 concerning what a treating physician can do using your sparX proteins. Also, revise to clarify why you believe that your binding domains have the potential to enable accelerated clinical development across multiple disease franchises.

2. Revise the summary to define "BCMA" when the term is first used, and explain it.

Our Platform, page 2

3. To provide context and balance to your Summary presentation concerning your platform, please revise your disclosure on pages 2-3 to explain briefly your basis for asserting each of the six "key benefits" that you cite. In this regard, we refer to your disclosure in the first full factor on page 15 which discusses the "intended benefits" of your platform. To the extent that your claims are based on pre-clinical testing, please indicate whether such testing has yielded statistically significant results.

4. Please tell us your basis for highlighting "efficient and streamlined manufacturing across all programs" given your risk factor disclosure on page 15 indicates that you have not exhaustively explored different options in the method for manufacturing ARC-T cells and sparX proteins.

Our Pipeline, page 4

5. Please tell us whether your current plan is to advance CART-ddBCMA for the treatment of multiple myeloma through Phase 2 and Phase 3 of development and then to commercialize it. In this regard, we note that your disclosure at the bottom of page 5 indicates that you intend to achieve your goals by developing product candidates from your ARC-sparX platform, as an alternative to CAR-T therapies. We further note that your Use of Proceeds discussion indicates that you plan to use all of the offering proceeds to advance ARC-sparX platform candidates rather than your CART-ddBCMA candidate. In addition, please revise your Summary and pipeline table presentations to reflect the relative significance of each product candidate irrespective of whether it is clinical-stage or pre-clinical. In this regard, we note that your disclosure on page 6 states that you are dependent on the success of your ACLX-001 drug candidate.

6. Please tell us your basis for including ACLX-001 for the treatment of Autoimmune Diseases in your Clinical and Preclincial Pipeline table. In this regard, we note that it is unclear which autoimmune disease or diseases you are targeting nor do we see disclosure in the prospectus concerning pre-clinical testing that you have conducted in this area.

7. Please tell us why you believe that the Discovery Pipeline table should appear prominently in the Summary given the limited disclosures provided on page 111 concerning your plans, particularly as they relate to AML/MDS and Autoimmune Diseases.

Our Strategy, page 5

8. Please revise here and elsewhere in the Summary to explain how your clinical development strategy is innovative.

Our Team, page 5

9. You indicate here and on page 87 that Takeda Ventures is part of the strong group of

investors that share your commitment to advancing your next generation cell therapy platform. On pages 21 and 113, you also cite Takeda as one of your competitors, as it is also "developing genetically-engineered natural killer (NK) cell therapies." Please tell us, and revise, as applicable, to indicate whether you face risks in potentially competing with this shareholder.

Implications of Being an Emerging Growth Company, page 7

10. 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

11. Please revise to disclose the amount of proceeds that you intend to allocate toward the development of each drug product candidate, or as applicable, toward each franchise. For each candidate and/or franchise, disclose the trial phase or phases that you intend to fund with the proceeds and indicate whether your plans call for additional funding to complete that phase or phases. Refer to Item 504 of Regulation S-K.

12. On page 65 you state that your use of proceeds depends on numerous factors, including "the amount of cash obtained through our existing collaborations and future collaborations, if any." In note 2 of your financial statements and elsewhere, you state you have no current collaborations. Accordingly, please revise to clarify whether you are currently involved in any material collaborations, and if so, describe them and provide the collaboration agreements as exhibits as required by Item 601(b)(10) of Regulation S-K.

Management's discussion and analysis of financial condition and results of operations
Critical accounting policies and estimates
Determination of the fair value of our common stock, page 81

13. Please also discuss the methods that management used to determine the enterprise value of the company underlying the fair value determination of the company's shares and the nature of the material assumptions involved.

14. 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 initial public offering 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.

Our Product Candidates, page 103

15. Please revise your disclosures on page 103-111 concerning each pre-clinical study to state the "n" and "p" values and to clarify whether the results are statistically significant. Also, clarify whether human cells were used in the *in vitro* tests.

CART-ddBCMA: Phase 1 Trial, page 104

16. Please revise to discuss when the trial commenced, its size, and whether it is fully enrolled. With reference to your disclosures on pages 1 and 103, please indicate how you will assess efficacy and indicate whether you plan to have ORR and median duration of response data to report in 2020.

Our Products
Cart-ddBCMA: In Vivo Preclinical Results, page 105

17. In explaining the chart on the bottom of page 106, you state, "Fourteen days following treatment with CART-ddBCMA, all mice in the highest dose group showed complete eradication of the diseased cells with no evidence of bioluminescense in any of the mice." In the accompanying chart, however, it appears that one of the five subjects is missing from the Day 14 post CART and Day 21 post CART graphics. Please revise or advise.

You may contact Tracey Houser at (202) 551-3736 or Kate Tillan at (202) 551-3604 if you have questions regarding comments on the financial statements and related matters. Please contact Abby Adams at (202) 551-6902 or Joe McCann at (202) 551-6262 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Life Sciences

cc: Dan Koeppen