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VIA EDGAR AND OVERNIGHT COURIER

Office of Healthcare & Insurance
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E.
Washington, D.C. 20549

Attention: Sharon Blume, Accounting Branch Chief
Justin Dobbie, Legal Branch Chief
Andi Carpenter
Julie Griffith

**Re: Adaptive Biotechnologies Corporation
Draft Registration Statement on Form S-1
Submitted May 8, 2019
CIK No. 0001478320**

Ladies and Gentlemen:

This letter is submitted on behalf of Adaptive Biotechnologies Corporation (the “**Company**”) in response to comments of the staff (the “**Staff**”) of the U.S. Securities and Exchange Commission (the “**Commission**”) with respect to Amendment No. 1 to the Company’s Draft Registration Statement on Form S-1 confidentially submitted on May 8, 2019 (the “**Draft Registration Statement**”), as set forth in the Staff’s letter dated May 23, 2019 (the “**Comment Letter**”).

Set forth below are the Company’s responses to the Staff’s comments in the Comment Letter. For reference purposes, the text of the Staff’s comments are reproduced in bold below, followed by the Company’s response to the comment. The numbered paragraphs below correspond to the numbered comments in the Comment Letter.

Additionally, the Company is concurrently publicly filing its Registration Statement on Form S-1 (the “**Registration Statement**”), which reflects revisions in response to the Comment Letter and certain other updates. For the convenience of the Staff, we are also sending, by overnight courier, copies of this letter and copies of the Registration Statement, marked to show changes from the Draft Registration Statement.

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

Overview, page 3

- 1. We note your response to comment 4. Please expand your disclosure to include your time horizon for expected discussions with the FDA and IND submissions for your TCR-based cellular therapy product candidates.**

Company Response: In response to the Staff's comment, the Company has revised the referenced disclosure on pages 3, 4, 110 and 111 of the Registration Statement.

Management's Discussion and Analysis of Financial Condition and Results of Operations Comparison of the Years Ended December 31, 2017 and 2018 Research and Development, page 93

- 2. We have reviewed your response and revised disclosure in response to our prior comment 10. While you do not track R&D costs by product candidate it appears that you do track such costs by other classifications, including personnel costs, rent, software development costs and depreciation expense. Please revise to disclose the costs incurred by the types of costs classified as research and development for each period presented.**

Company Response: In response to the Staff's comment, the Company has revised the referenced disclosure on pages 94 and 97 of the Registration Statement.

Our Market, page 105

- 3. We note your response to comment 2. Please balance your disclosure in this section by clarifying that the total potential addressable market information is based on a number of estimates and assumptions and that for the largest portion of the potential addressable market, drug discovery, you are still in the very early stages of developing product candidates.**

Company Response: In response to the Staff's comment, the Company has revised the referenced disclosure on page 107 of the Registration Statement.

Exclusive Forum, page 176

- 4. We note your response to comment 7. Please revise your disclosure to clarify that your stockholders will not be deemed to have waived your compliance with the federal securities laws and the rules and regulations thereunder.**

Company Response: In response to the Staff's comment, the Company has revised the referenced disclosure on pages 74 and 181 of the Registration Statement.

Consolidated Financial Statements Notes to Financial Statements Microsoft Collaboration Agreement, page F-32

5. We have reviewed your response and revised disclosure in response to our prior comment sixteen. It is our understanding that you did not account for your collaboration agreement with Microsoft under ASC 606. Please tell us how you accounted for the agreement, including the specific accounting literature you relied upon when making such determination. In your response, address your accounting for the following:

- the exchange of Microsoft’s machine learning software at “no charge” for your data and immunomics, diagnostic and bioinformatics expertise at “no charge”
- the certain licenses to intellectual property rights granted to you by Microsoft
- your exclusivity obligation to Microsoft with respect to collaborations and projects that are substantially similar; and
- your commitment to purchase a minimum of \$12 million in Azure cloud services from Microsoft over a 7 year period.

Quantify the related amounts recorded in your financial statements for each period presented.

Company Response: For the Staff’s convenience, the Company has summarized the collaboration agreement (the *Collaboration Agreement*) with Microsoft Corporation (“*Microsoft*”), followed by a detailed discussion of the Company’s accounting analysis.

Summary and Current Status of the Microsoft Collaboration Agreement

The Collaboration Agreement between the Company and Microsoft is intended to enable the parties to work together toward creating:

- (1) a new database architecture/software program to be developed and owned by Microsoft for the hosting of biological data, including TCR-antigen map data generated by the Company, access to which Microsoft could potentially commercialize to third parties desiring data hosting services (“*AI Immunomics Services*”);
- (2) new machine learning algorithms (“*Algorithms*”) to be developed and owned by Microsoft to enable rapid evaluation of the TCR-antigen map data over time;
- (3) new computational models to be developed and owned by the Company to provide insights from generated TCR-antigen map data which could have diagnostic potential; and
- (4) new diagnostic tests leveraging such data, to be owned and commercialized solely by the Company.

To those ends, each party will contribute know-how to the development efforts, with neither party having economic obligations to the other for development costs or commercialization results. Contemporaneously, the Company also entered into an agreement with Microsoft to purchase a minimum of \$12.0 million in Microsoft Azure cloud services over a seven-year period. The Company determined that the prices to be paid to Microsoft for these respective services were at market terms for similar arrangements.

The algorithmic-based methods and computational models to be developed have not previously been developed for any applications within the field of diagnostics, therapeutics and immunological research (the “**Field of Use**”). The computational models and machine learning efforts may prove to be unsuccessful and may never be fully developed. There was no commercial precedent for the intended outputs of the collaboration, and the parties did not establish development milestones or revenue sharing arrangements in the Collaboration Agreement. Microsoft has not previously entered into other agreements similar to the Collaboration Agreement. The economic terms of use by the Company of any AI Immunomics Services were left to future separate negotiation.

Limited license rights to existing and future technology, as well as any intellectual property rights created, were granted in defined fields of use to enable the collaboration to proceed. Except for its ability to sell any Algorithms it develops (and potentially AI Immunomics Services should the database architecture/software it may develop be informed by content licensed from the Company), Microsoft’s license rights fall outside of the Field of Use. Otherwise, license rights within the Field of Use are reserved to the Company.

If any AI Immunomics Services are developed, the Company agrees to exclusively use them for hosting and providing access to the TCR-antigen map data to be generated. The Company has also agreed to shift all of its cloud-based applications to the Microsoft Azure cloud service for exclusive use over a seven-year period, at arms-length market prices; in this regard, the Company has entered into Microsoft’s standard Azure cloud services agreement.

To date, the activities performed pursuant to the Collaboration Agreement have consisted of the parties engaging in development planning, including the establishment of meeting cadences and collaboration staffing, and building the infrastructure that will be needed for the collaboration to proceed, including a laboratory that the Company plans to open in the third quarter of 2019, which will be used to generate and port TCR-antigen map data to Microsoft. Data the Company has shared with Microsoft to date has been limited to demonstrations of potential training sets. Microsoft has not provided any Algorithms or AI Immunomics Services to the Company.

Analysis of the Company’s Accounting for the Collaboration Agreement

To account for the Collaboration Agreement, the Company first determined that the agreement met the criteria to be a collaboration arrangement as defined under ASC Topic 808, *Collaboration Agreements* (“**ASC 808**”), as both parties are active participants in the activity and are exposed to significant risks and rewards that are dependent on the commercial success of the activity. Both parties have granted each other exclusivity relating to any substantially similar collaborations. Since ASC 808 does not provide guidance on how to account for the activities under the collaboration, and the Company determined that Microsoft did not meet the definition of a customer under ASC Topic 606, *Contracts with Customers*, the Company referenced other generally accepted accounting principles to determine the appropriate recognition and measurement guidance to account for the activities to be performed and/or received under the Collaboration Agreement. The Company identified that there were two units of accounting under the arrangement as follows:

- (1) The commitments and receipt by the Company of the respective Microsoft Azure cloud services that are to be provided over a seven-year period. As noted above, these services are provided at market rates and are subject to a separate agreement the Company entered into with Microsoft on its standard Azure cloud services agreement.
- (2) The exchange of non-monetary assets, including related support services (“no charge” services), between both parties, which is summarized as follows:

(a) To the Company:

- (i) an exclusive, royalty-free license to host TCR-antigen map data on AI Immunomics Services, if developed during the collaboration by Microsoft;
- (ii) an exclusive, royalty-free license to commercialize products within the Field of Use to the extent used with Algorithms, if developed during the collaboration by Microsoft;
- (iii) a non-exclusive, royalty-free license to commercialize the Company's products outside of the Field of Use by hosting TCR-antigen map data on AI Immunomics Services or to the extent used with Algorithms, if developed during the collaboration by Microsoft; and
- (iv) a non-exclusive, royalty-free license to use whatever preexisting Microsoft intellectual property relating to machine learning as may be required for the Company to have the freedom to operate and conduct internal research and development within the Field of Use (i.e., for the collaboration).

(b) To Microsoft:

- (i) if any AI Immunomics Services or Algorithms are developed during the collaboration, Microsoft will have an exclusive, non-transferable, royalty-free license to use TCR-antigen map data and computational models in the commercialization of such AI Immunomics Services and/or Algorithms outside of the Field of Use;
- (ii) if Algorithms are developed during the collaboration, Microsoft will have a non-exclusive, royalty-free license to commercialize them for use by others within the Field of Use; and
- (iii) A non-exclusive, royalty-free license to whatever preexisting Company intellectual property relating to the evaluation of TCR-antigen map data as may be required for Microsoft to have the freedom to operate and conduct internal research and development within the Field of Use (i.e., for the collaboration).

(1) Assessment and accounting for the Microsoft Azure cloud services commitment

To account for the commitment to purchase a minimum of \$12.0 million in Microsoft Azure cloud services over a seven-year period, the Company determined that the prices to be paid to Microsoft for these respective services were at market terms for similar arrangements. This determination was based on references to the Company's existing cloud services arrangements with other third parties and its knowledge of respective pricing from other cloud service providers. As a result, the Company assessed the accounting of the Microsoft Azure cloud and related services commitment separate from the remaining aspects of the collaboration. At inception and at present, the Company expects to meet the minimum volume purchase commitment of \$12.0 million and, therefore, does not expect to make any payments to Microsoft that would not involve the actual use of the cloud services in the ordinary course of business. The Company accounts for the services as the cloud services are provided to the Company, and it records expense in the statement of operations based on the underlying activities which are hosted on the cloud services. The Company did not receive any Microsoft Azure cloud services in 2017. In 2018, the Company recorded \$0.5 million in research and development activities related to these services.

(2) *Assessment and accounting for the exchange of non-monetary assets between both parties*

Since the remaining elements of the arrangement were highly interrelated to the overall objectives of the collaboration, the Company determined that the remaining elements of the Collaboration Agreement should be evaluated as one unit of account.

The Company applied the guidance under ASC Topic 845, *Nonmonetary Transactions* (“ASC 845”), by analogy as this is the most relevant interpretative accounting literature to the specific set of collaboration activities to be performed by the Company and Microsoft.

The Company acknowledges that ASC 845-10-25-1 excludes transactions where the transferor has substantial continuing involvement in the transferred asset. However, since ASC 845 contains specific literature to address the transfers of the respective nonmonetary assets between the parties in this agreement, and the intent of the agreement was for each party to retain commercial and economic rights to its own developed technologies as opposed to the development of jointly owned assets with economic rights to be shared by the parties, the Company believed this guidance to be appropriate.

Based on the evaluation of the facts and circumstances in application of ASC 845, the Company concluded that it should not record any income or expense except for the costs pertaining to the research and development activities performed by its employees and utilized in connection with the development of the TCR-antigen map in support of the collaboration. To make this determination the Company referenced ASC 845-10-30-3:

A nonmonetary exchange shall be measured based on the recorded amount (after reduction, if appropriate, for an indicated impairment of value as discussed in paragraph 360-10-40-4) of the nonmonetary asset(s) relinquished, and not on the fair values of the exchanged assets, if any of the following conditions apply:

- (a) The fair value of neither the asset(s) received nor the asset(s) relinquished is determinable within reasonable limits.
- (b) The transaction is an exchange of a product or property held for sale in the ordinary course of business for a product or property to be sold in the same line of business to facilitate sales to customers other than the parties to the exchange.
- (c) The transaction lacks commercial substance.

Given the structure and intent of the arrangement was to provide protective rights for each party to develop its own respective assets by leveraging each other’s know-how, the Company believes that ASC 845-10-30-3(a) is applicable to each of the “no charge” services, the licenses to intellectual property rights and the exclusivity obligations to and from Microsoft. This is based on the following guidance under ASC 845-10-30-8:

Fair value should be regarded as not determinable within reasonable limits **if major uncertainties exist about the realizability of the value that would be assigned to an asset received in a nonmonetary transaction accounted for at fair value**. An exchange involving parties with essentially opposing interests is not considered a prerequisite to determining a fair value of a nonmonetary asset transferred; nor does an exchange ensure that a fair value for accounting purposes can be ascertained within reasonable limits. **If neither the fair value of a nonmonetary asset transferred nor the fair value of a nonmonetary asset received in exchange is determinable within reasonable limits, the recorded amount of the nonmonetary asset transferred from the entity may be the only available measure of the transaction.**

(Emphasis added.) As part of the assessment of the Collaboration Agreement, the Company determined that major uncertainties exist about the realizability of the value that would be assigned to the respective assets received and the assets relinquished under the agreement. Specifically, the Company considered the following factors to make this determination:

Assets received by the Company:

- (1) Licenses and rights to machine learning software. All of the license rights conveyed at inception of the arrangement are intended to enable the collaboration and to provide freedom to operate for the companies with respect to any outputs provided as a result of the collaboration. There is no existing model or reference point for the novel algorithmic-based methods and computational models to be developed by the parties as contemplated under the agreement. No existing model has been previously tested for these purposes, and such development may not be successful as it has technological and scientific challenges that may make such efforts unsuccessful.
- (2) Reasonable support services related to machine learning software, if developed. The support to be provided by Microsoft for any software developed through the collaboration is not defined or quantified by the Collaboration Agreement. The Company does not control or direct any activities to be performed by Microsoft, and has no rights around the appointment or removal of individuals or other resources which Microsoft may assign to the collaboration efforts. Given the undefined nature of the services and resources to be applied, the Company could not develop reliable estimates relating to the extent of development support services that could be received from Microsoft or define the activities which it would ultimately support.

Assets relinquished/provided to Microsoft:

- (1) License rights to the Company's data and related support services. Given the licenses are principally for future commercial use of intellectual property that has not yet been developed, and the restrictions with respect to Microsoft's commercialization of any AI Immunomics Services, if developed, within the Field of Use, and its exclusion from commercialization of Algorithms within the Field of Use, the Company determined there was no value at inception. The intent of the licenses is to enable Microsoft to engage in the collaboration rather than to transfer value at inception. Given these limitations, the Company does not believe there is sufficient information to determine that realizability of these assets would exist.
- (2) Exclusivity to Microsoft. The exclusivity under the Collaboration Agreement limits the Company's ability to enter into similar collaborations with other providers specifically to host a TCR-antigen mapping database on a third party cloud-based immunomics data service in the sole event that one

is developed by Microsoft during the collaboration that is not at least equivalent in function to any later-developed third party database hosting solution. Commercial terms for future use by the Company of any AI Immunomics Services developed during the collaboration were not provided for and were left for future negotiation. The conveyance of such exclusivity does not limit the Company's ability to develop other research, diagnostic or therapeutic products or services with third parties, including through use of TCR-antigen map data. At inception, the conveyance of this exclusivity did not provide realizable value to Microsoft.

Given the substantive uncertainty at inception as it relates to a successful outcome of the collaboration, the royalty-free licenses granted, and the future negotiation necessary regarding the terms on which the Company would use any AI Immunomics Services developed by Microsoft, the Company does not believe there are reasonable inputs that could be developed to determine a reliable fair value for the collaboration at this point in time. Further, there are major uncertainties about the realizability of value for any asset received.

Given the above factors in applying ASC 845-10-30-8, the accounting for the collaboration should be based on the carrying amount of the assets given up. Since the Company does not have a recorded carrying amount for any of the assets given up under the Collaboration Agreement, it did not record any respective income or loss pertaining to the Collaboration Agreement in any of the periods presented in its financial statements.

The Company recognizes that the application of this practical exception under ASC 845 is a matter that requires significant judgment based on the facts and circumstances of the non-monetary exchanges. As a result, the Company evaluated other qualitative factors to assess, if a valuation were to be developed, if it would result in material value conveyed to either party under the collaboration. In addition to the factors identified above that limit the reliability of any inputs that would be necessary to create a reliable estimate of fair value, the following events subsequent to the inception of the arrangement were assessed:

- To date, Microsoft has not developed any cloud-based immunomics service or machine learning algorithms for the Company's use within the Field of Use.
- The Company does not yet have the functional laboratory required for use in collaborating with Microsoft, including the capability to collect and transfer TCR-antigen map data to Microsoft for development and application of machine learning algorithms useful in diagnosis or therapy. The laboratory is expected to be opened in the third quarter of 2019.
- In 2018, the primary efforts under the collaboration related to planning and development of infrastructure for the collaboration, such as means for the collection and transfer of data to Microsoft, initial proof of concept and evaluation using existing datasets.
- Other efforts in 2018 included establishing general frameworks to establish the administrative aspects of the collaboration.

Given the stage of development activities and the novel approaches being applied under the collaboration, and the Company's retrospective evaluation of activities that were performed during the first year of the collaboration, the Company does not believe either at inception or currently any fair value measurement would result in the recognition of a material asset or an increase to the Company's income and increase to expenses.



The Company has also revised its disclosure in footnote 15 to its annual financial statements, which begins on page F-32 of the Registration Statement, to clarify its accounting for the Collaboration Agreement.

[Remainder of page intentionally blank. Signature page follows.]



Should the Staff have additional questions or comments regarding this letter or the Registration Statement, please do not hesitate to contact the undersigned at (206) 839-4845 or andrew.ledbetter@dlapiper.com.

Sincerely,

DLA PIPER LLP (US)

/s/ Andrew Ledbetter

Andrew Ledbetter

Enclosure

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