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May 28, 2019

CONFIDENTIAL SUBMISSION VIA EDGAR

Securities and Exchange Commission
Office of Healthcare & Insurance
Division of Corporation Finance
100 F Street, N.E.
Washington, D.C. 20549
Attn: Tonya K. Aldave, Dietrich King, Isaac Esquivel and Kate Tillan

**Re: Genmab A/S
Registration Statement on Form F-1
Filed on May 28, 2019
CIK No. 0001434265**

Ladies and Gentlemen:

On behalf of our client Genmab A/S (the "Company"), we are submitting this letter in response to the written comments of the staff (the "Staff") of the Securities and Exchange Commission (the "SEC"), as contained in your letter dated May 15, 2019 (the "Comment Letter") to the Company regarding the Company's Amendment No. 2 to the draft registration statement (CIK No. 0001434265) on Form F-1 confidentially submitted to the SEC on May 13, 2019 (the "Form F-1").

To facilitate your review of the Company's responses, we have repeated your comment in italics followed immediately by the response of the Company. Simultaneously with the transmission of this letter, the Company is publicly filing via EDGAR the Form F-1 (the "Registration Statement"), responding to the Staff's comment and including certain other revisions and updates. Please note that capitalized terms used but not otherwise defined in this letter have the meanings ascribed to such terms in the Registration Statement.

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Shearman & Sterling LLP is a limited liability partnership organized in the United States under the laws of the state of Delaware, which laws limit the personal liability of partners.

Exhibits

1. *Please revise Exhibit 4.2 to state that no disclaimer of liability under the Exchange Act is intended by any provision of the deposit agreement. In addition, revise the arbitration provision to provide that the provision does not preclude holders and beneficial owners from pursuing claims under the Securities Act or the Exchange Act in federal courts.*

In response to the Staff's comment, the Company will revise the deposit agreement and the form of depositary receipt in connection with the offering.

The Company has filed as Exhibit 4.1 to the Registration Statement the form of Amended and Restated Deposit Agreement (the "Amended and Restated Deposit Agreement") to be entered into prior to the consummation of the offering. The Amended and Restated Deposit Agreement will amend and restate the existing deposit agreement of the Company, originally filed as an exhibit to the Company's Registration Statement on Form F-6 on May 22, 2013 (the "Existing Deposit Agreement"), as amended by Amendment No. 1 thereto filed as an exhibit to the Company's Registration Statement on Form F-6 on April 13, 2018. The Amended and Restated Deposit Agreement contains the form of American Depositary Receipt filed as Exhibit 4.2.

In response to the Staff's comment in its letter dated February 28, 2019 with respect to the Existing Deposit Agreement and the above-referenced comment with respect to the form of American Depositary Receipt contained in the Existing Deposit Agreement, as amended, the Company has added the underlined language in the following sections of the Amended and Restated Deposit Agreement and the form of American Depositary Receipt contained therein:

Sections 5.2 (Exoneration) of the form of Amended and Restated Deposit Agreement

No disclaimer of liability under the Securities Act or the Exchange Act is intended by any provision of this Deposit Agreement.

Paragraph (17) of the form of American Depositary Receipt

No disclaimer of liability under the Securities Act or the Exchange Act is intended by any provision of the Deposit Agreement.

Section 7.6 (Governing Law and Jurisdiction) of the form of Amended and Restated Deposit Agreement

The Company and the Depositary agree that, notwithstanding the foregoing, with regard to any claim or dispute or difference of whatever nature between the parties hereto arising directly or indirectly from the relationship created by this Deposit Agreement, the Depositary, in its sole discretion, shall be entitled to refer such dispute or difference for final settlement by arbitration ("Arbitration") in accordance with the applicable rules of the American Arbitration Association (the "Rules") then in force, by a sole

arbitrator appointed in accordance with the Rules. The seat and place of any reference to Arbitration shall be New York, New York State. The procedural law of any Arbitration shall be New York law and the language to be used in the Arbitration shall be English. The fees of the arbitrator and other costs incurred by the parties in connection with such Arbitration shall be paid by the party that is unsuccessful in such Arbitration. For the avoidance of doubt this paragraph does not preclude Holders and Beneficial Owners from pursuing claims under the Securities Act or the Exchange Act in federal courts.

The Company respectfully advises the Staff that the form of American Depositary Receipt does not contain an arbitration provision, so no corresponding change has been made to the form of the receipt.

In addition to the changes noted above, the Amended and Restated Deposit Agreement reflects the change to the ADS-to-share ratio effected in Amendment No. 1 to the Existing Deposit Agreement as well as changes to the Company's reporting status and obligations under the Exchange Act in Section 4.10 (Available Information), clarifies certain matters relating to Danish voting procedures in Section 4.8 (Voting of Deposited Securities), and makes certain clarifying changes to reflect the amendment and restatement of the Existing Deposit Agreement. Where applicable, corresponding revisions were made to the form of American Depositary Receipt. To facilitate the Staff's review, a marked version of the Amended and Restated Deposit Agreement, showing the changes against the Existing Deposit Agreement, is being provided to the Staff by email.

We thank the Staff in advance for its consideration of the Registration Statement and hope the Staff finds that the foregoing answers are responsive to its comment. If you should have any questions or further comments with respect to the Registration Statement, please do not hesitate to contact me at (212) 848-7150.

Very truly yours,

/s/ Harald Halbhuber

Harald Halbhuber

cc: David Eatwell, Chief Financial Officer, Genmab A/S
Nathan Ajiashvili, Latham & Watkins LLP