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Free Writing Prospectus dated January 25, 2018
Registration No. 333-222357

SOLID BIOSCIENCES INC.

This free writing prospectus updates the preliminary prospectus dated January 16, 2018 included in Amendment No. 1 to the Registration Statement on Form S-1 (File No. 333-222357) relating to the initial public offering of the common stock of Solid Biosciences Inc. On January 25, 2018, the issuer filed Amendment No. 3 to the Registration Statement on Form S-1. This free writing prospectus updates and supplements the preliminary prospectus dated January 16, 2018 with information that is reflected in the preliminary prospectus dated January 25, 2018 included in Amendment No. 3 to the Registration Statement.

To review the preliminary prospectus included in Amendment No. 3 to the Registration Statement, click the following link on the website of the SEC at www.sec.gov as follows (or if such address has changed, by reviewing the issuer's filings for the relevant date on the SEC web site): https://www.sec.gov/Archives/edgar/data/1707502/000119312518018981/0001193125-18-018981-index.htm. The issuer's Central Index Key, or CIK, on the SEC website is 0001707502.

This free writing prospectus reflects the following supplements and updates that were made in the preliminary prospectus:

Prospectus Summary and Business - Overview

The following disclosure was added as the fifth paragraph of the section entitled "Prospectus Summary—Overview" and the second paragraph of the section entitled "Business—Our product candidates."

> Our Investigational New Drug application, or IND, permits us to proceed with administering our proposed low dose to patients. Prior to dosing patients in our higher-dose group, we will be required to resolve the partial clinical hold on SGT-001 outlined in a November 2017 letter to us from the U.S. Food and Drug Administration, or the FDA. In order to do so we will need to decrease the number of vials and utilize no more than a single production lot per patient and demonstrate that we have the appropriate manufacturing processes in place to support the higher-dose group. In addition, the FDA had additional comments and requests for information that were characterized as not clinical hold comments. We expect that we will be able to address the specific deficiencies identified by the FDA by submitting additional information demonstrating manufacturing capacity and product attributes that will support the high-dose group. The Company intends to submit a response to the FDA addressing the specific deficiencies in the near future, after which the FDA will have 30 days to respond. The Company does not expect that the overall timing for clinical development of SGT-001 will be affected by the partial clinical hold. Further, the partial clinical hold does not impact the Company's ability to conduct its clinical development activities of SGT-001 at low-dose levels. If the partial clinical hold is not lifted on our Phase I/II clinical trial, we will not be able to evaluate the safety, tolerability and efficacy of SGT-001 at the high-dose level, which could negatively impact the development of SGT-001.

Risk Factors

The following additional risk factor was added to the section entitled "Risk Factors—Risks related to the development of our product candidates."

The FDA placed the SGT-001 Phase I/II clinical trial on partial clinical hold requiring us to submit additional CMC information that demonstrates that manufacturing capacity and product attributes can support the high-dose group.

Our IND permits us to proceed with administering our proposed low dose to patients. Prior to dosing patients in our higher-dose group, we will be required to resolve the partial clinical hold on SGT-001 outlined in a November 2017 letter to us from the FDA. In order to do so we will need to decrease the number of vials and utilize no more than a single production lot per patient and demonstrate that we have the appropriate manufacturing processes in place to support the higher-dose group. In addition, the FDA had additional comments and requests for information that were characterized as not clinical hold comments. We expect that we will be able to address the specific deficiencies identified by the FDA by submitting additional information demonstrating manufacturing capacity and product attributes that will support the high-dose group. The Company intends to submit a response to the FDA addressing the specific deficiencies in the near future, after which the FDA will have 30 days to respond. The Company does not expect that the overall timing for clinical development of SGT-001 will be affected by the partial clinical hold. Further, the partial clinical hold does not impact the Company's ability to conduct its clinical development activities of SGT-001 at low-dose levels. If the partial clinical hold is not lifted on our Phase I/II clinical trial, we will not be able to evaluate the safety, tolerability and efficacy of SGT-001 at the high-dose level, which could negatively impact the development of SGT-001. If the FDA does not permit us to administer SGT-001 at our proposed higher dose in our Phase I/II clinical trial, we may be unable to continue or complete our clinical trial of SGT-001. Any inability to continue or complete our clinical trial of SGT-001, as a result of the partial clinical hold or otherwise, will delay or terminate our clinical development plans for SGT-001, may require us to incur additional clinical development costs and could impair our ability to ultimately obtain FDA approval for SGT-001. Delays in the completion of any clinical trial of SGT-001, our lead product candidate, or any other product candidate will increase our costs, slow down our product candidate development and approval process and delay or potentially jeopardize our ability to commence product sales and generate revenue. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of SGT-001 or our product candidates.

The following risk factor was amended and restated in the section entitled "Risk Factors—Risks related to the development of our product candidates."

We have only recently initiated our first clinical trial for SGT-001 and have not commenced preclinical studies for our other product candidates. We have never completed a clinical trial, and may be unable to do so for any product candidates we may develop, including SGT-001.

We will need to successfully complete clinical trials in order to obtain FDA approval to market SGT-001 or our other product candidates. We have only recently initiated our first clinical trial for SGT-001, have limited experience in preparing, submitting and prosecuting regulatory filings, and have not previously submitted a biologics license application, or BLA, for any product candidate. The FDA placed SGT-001 on a partial clinical hold that prohibits us from administering SGT-001 at our proposed high dose. If the partial clinical hold is not lifted on our Phase I/II clinical trial, we will not be able to evaluate the safety, tolerability and efficacy of SGT-001 in the high-dose group, which could negatively impact the development of SGT-001. We cannot be sure that submission of an IND, will result in the FDA allowing clinical studies to begin or that, once begun, issues will not arise that suspend or terminate such studies. Carrying out later-stage clinical trials and the submission of a successful BLA is a complicated process. This may be particularly true for design of a pivotal trial for the treatment of DMD as the FDA has not given clear guidance as to the necessary endpoints for approval of a treatment for DMD. In addition, we have had limited interactions with the FDA and cannot be certain how many clinical trials of SGT-001 or our other product candidates will be required or how such trials should be designed. Consequently, we may be unable to successfully and efficiently execute and complete necessary clinical trials in a way that leads to BLA submission and approval of SGT-001 or our other product candidates. We may require more time and incur greater costs than our competitors and may not succeed in obtaining regulatory approvals of product candidates that we develop. Failure to commence or complete, or delays in, clinical trials, could prevent us from or delay us in commercializing SGT-001 and our other product candidates.

Business

The following disclosure was added as the third paragraph to the section entitled “Business—Clinical Development of SGT-001.”

Our IND permits us to proceed with administering our proposed low dose to patients. Prior to dosing patients in our higher-dose group, we will be required to resolve the partial clinical hold on SGT-001 outlined in a November 2017 letter to us from the FDA. In order to do so we will need to decrease the number of vials and utilize no more than a single production lot per patient and demonstrate that we have the appropriate manufacturing processes in place to support the higher-dose group. In addition, the FDA had additional comments and requests for information that were characterized as not clinical hold comments. We expect that we will be able to address the specific deficiencies identified by the FDA by submitting additional information demonstrating manufacturing capacity and product attributes that will support the high-dose group. The Company intends to submit a response to the FDA addressing the specific deficiencies in the near future, after which the FDA will have 30 days to respond. The Company does not expect that the overall timing for clinical development of SGT-001 will be affected

by the partial clinical hold. Further, the partial clinical hold does not impact the Company's ability to conduct its clinical development activities of SGT-001 at low-dose levels. If the partial clinical hold is not lifted on our Phase I/II clinical trial, we will not be able to evaluate the safety, tolerability and efficacy of SGT-001 at the high dose level, which could negatively impact the development of SGT-001.

The following disclosure was added to the section entitled "Business—Government regulation and product approval—U.S. biologic products development process."

In addition, the FDA may impose a partial clinical hold at any time before or during clinical trials, A partial clinical hold is a delay or suspension of only part of the clinical work requested under the IND (e.g., a specific protocol or part of a protocol is not allowed to proceed; however, other protocols or parts of the protocol are allowed to proceed under the IND). If the FDA requires that progress to the next study is contingent on (i) FDA review of additional data and (ii) subsequent specific permission for the study to proceed, this represents a partial clinical hold. The FDA placed SGT-001 on a partial clinical hold that permits us to proceed with administering our proposed low dose to patients, but that prohibits us from administering SGT-001 at our proposed higher dose. See "Risk Factors—Risks related to the development of our product candidates—The FDA placed the SGT-001 Phase I/II clinical trial on a partial clinical hold that requiring us to submit additional CMC information that demonstrates that manufacturing capacity and product attributes can support the high-dose group."
