Publication in Nature Communications Highlights the Preclinical Development of SYNB1891 and its Potential as a Dual Innate Immune Activator to Stimulate an Immune Response in Difficult to Treat Tumors

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- SYNB1891 is currently being evaluated in a Phase 1 clinical trial in patients with advanced solid tumors or lymphoma -

CAMBRIDGE, Mass., June 1, 2020 /PRNewswire/ -- Synlogic, Inc., (Nasdaq: SYBX) a clinical stage company applying synthetic biology to beneficial microbes to develop novel, living medicines, today announced the publication in *Nature Communications* of preclinical data supporting its first clinical immuno-oncology program, SYNB1891, which is being evaluated in a Phase 1 clinical trial in patients with advanced solid tumors or lymphoma. Data described in the publication demonstrate that SYNB1891 treatment cleared tumors and stimulated antitumor immunity in preclinical models of cancer.

"The targeted delivery and dual immune stimulatory activity of SYNB1891 offer distinct advantages over other approaches," said Aoife Brennan, M.B., Ch. B., Synlogic's president and chief executive officer. "The preclinical data published today highlight the transformative potential of SYNB1891. Together with the early experience in the clinic demonstrating feasibility and tolerability in the initial cohorts of the clinical trial, these data provide support for the continued development of SYNB1891 as a potential therapeutic option to expand the benefits of immunotherapy to more patients with cancer."

The publication titled, "Immunotherapy with an engineered bacteria by targeting the STING pathway for anti-tumor immunity," details the engineering and characterization of SYNB1891. The work describes preclinical studies that demonstrate anti-tumor activity and generation of immunological memory by SYNB1891 in mouse models of cancer, as well as its robust activation of human antigen presenting cells (APCs) that are key to the generation of an anti-tumoral immune response.

SYNB1891 is an engineered strain of E. coli Nissle, that produces cyclic di-AMP (CDA), a stimulator of the STING (STimulator of INterferon Genes) pathway. This mechanism can play a critical role in the initiation of an anti-tumor immune response via activation of APCs and presentation of tumor antigens. The bacterial chassis of SYNB1891 also stimulates the innate immune system by several other mechanisms, including via Toll-like receptors (TLRs), potentially adding to the magnitude of the overall immune response. A notable advantage of SYNB1891 is that the STING agonist is not released by the bacteria until they have been engulfed by the target cells (APCs) and so there is less risk of deleterious effects on other immune cells such as T-cells. Also, while SYNB1891 has been engineered with safety features that are designed to prevent its replication unless supplemented with specific nutrients, the bacteria remain active for several days within the injected tumor to stimulate a local immune response.

Intra-tumorally administered SYNB1891 is being evaluated as a monotherapy in an ongoing Phase 1 open-label, multicenter, dose escalation clinical trial (NCT04167137) in patients with advanced solid tumors or lymphoma. Synlogic expects to release data from the monotherapy arm of this study in late 2020. After establishing a maximum tolerated dose for SYNB1891 as monotherapy, Synlogic expects to initiate a second arm of the trial in which subjects will receive escalating dose levels of SYNB1891 in combination with a fixed dose of the checkpoint inhibitor, atezolizumab (Tecentriq®), to establish a recommended dose for the combination regimen.

The DOI for the paper is 10.1038/s41467-020-16602-0.

About Synlogic

Synlogic is pioneering the development of a novel class of living medicines, Synthetic Biotic medicines, based on its proprietary drug development platform. Synlogic leverages the tools and principles of synthetic biology to genetically engineer probiotic microbes to perform or deliver critical functions missing or damaged due to disease. The Company's lead program, SYNB1618, targets PKU. When delivered orally, Synthetic Biotic medicines can act from the gut to compensate for the dysfunctional metabolic pathway and have a systemic effect, with the potential to significantly improve symptoms of disease for affected patients. In addition, Synlogic is leveraging the broad potential of its platform to create Synthetic Biotic medicines for the treatment of more common diseases, including inflammatory and immune disorders, and cancer. Synlogic's first immuno-oncology program, SYNB1891, is in clinical development for the treatment of solid tumors and lymphoma. For more information, please visit www.synlogictx.com.

Forward-Looking Statements

This press release contains "forward-looking statements" that involve substantial risks and uncertainties for purposes of the safe harbor provided by the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical facts, included in this press release regarding strategy, future operations, clinical development plans, future financial position, future revenue, projected expenses, prospects, plans and objectives of management are forward-looking statements. In addition, when or if used in this press release, the words "may," "could," "should," "anticipate," "believe," "estimate," "expect," "intend," "plan," "predict" and similar expressions and their variants, as they relate to Synlogic may identify forward-looking statements. Examples of forward-looking statements, include, but are not limited to, statements regarding the potential of Synlogic's platform to develop therapeutics to address a wide range of diseases including: cancer, inborn errors of metabolism, and inflammatory and immune disorders; the future clinical development of Synthetic Biotic medicines; the approach Synlogic is taking to discover and develop novel therapeutics using synthetic biology; the expected timing of Synlogic's clinical trials and availability of clinical trial data; the timing and progress of our Phase 1 clinical trial of SYNB1891 in patients with advanced solid tumors or lymphoma; and the potential benefits of SYNB1891. Actual results could differ materially from those contained in any forward-looking statement as a result of various factors, including: the uncertainties inherent in the clinical and preclinical development process; the ability of Synlogic to protect its intellectual property rights; and legislative, regulatory, political and economic developments, as well as those risks identified under the heading "Risk Factors" in Synlogic's filings with the SEC. The forward-looking statements contained in this press release reflect Synlogic's current views with respect to future events. Synlogic anticipates that subsequent events and developments will cause

its views to change. However, while Synlogic may elect to update these forward-looking statements in the future, Synlogic specifically disclaims any obligation to do so. These forward-looking statements should not be relied upon as representing Synlogic's view as of any date subsequent to the date hereof.

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