Synlogic Presents New Preclinical Data from Synthetic Biotic™ Medicine, SYNB1020, Highlighting Beneficial Activity in Animal Model of Liver Disease at Digestive Disease Week®

June 4, 2018

– SYNB1020 currently being evaluated in a Phase 1b/2a clinical trial in patients with elevated ammonia due to cirrhosis; topline data expected by YE2018 –

CAMBRIDGE, Mass.--(BUSINESS WIRE)--Jun. 4, 2018-- Synlogic, Inc. (Nasdaq: SYBX), a clinical-stage drug discovery and development company applying synthetic biology to probiotics to develop novel living medicines, announced that new preclinical data from SYNB1020, a Synthetic Biotic medicine currently being evaluated in an ongoing Phase 1b/2a clinical trial in patients with cirrhosis and elevated ammonia, were presented at Digestive Disease Week (DDW 2018), held June 2-5, 2018 in Washington, D.C. The new preclinical data demonstrate that, in addition to lowering systemic levels of ammonia, administration of SYNB1020 resulted in reduced indicators of liver damage, including liver enzymes and inflammatory markers, fibrosis and gut permeability, providing additional support for the continued development of SYNB1020 as a potential treatment for liver disease.

“Collectively, the preclinical data we have obtained in this model of chronic liver damage demonstrate that, in addition to the dose-dependent blood ammonia-lowering effects that we have previously described, SYNB1020 has additional effects on gut and liver biology that may increase its therapeutic potential as a treatment for liver disease,” said Aoife Brennan, M.B., B.Ch., Synlogic’s interim president and chief executive officer and chief medical officer. “The selection of this presentation for a plenary session at DDW demonstrates the level of interest in our novel Synthetic Biotic medicines platform.”

SYNB1020 is a strain of a probiotic bacterium, *E.coli* Nissle, that has been engineered to convert ammonia (a metabolite that becomes toxic to the body at high levels) into arginine, a beneficial amino acid, making it a potential treatment for diseases, such as cirrhosis, where elevated ammonia is a result of the disease. A phase 1 clinical trial in healthy human volunteers demonstrated SYNB1020 was well-tolerated and provided evidence supporting proof of mechanism. In preclinical animal models of hyperammonemia, orally administered SYNB1020 has been demonstrated to lower blood ammonia in a dose-dependent manner and improve survival in treated animals fed a high protein diet, a major source of ammonia.

In a plenary session at DDW Synlogic presented data demonstrating that oral administration of SYNB1020 in a chronic TAA mouse model:

- Dose dependent reduction in blood ammonia and an increase in blood urea;
- Increased survival;
- Reduced intestinal permeability, a complication of liver disease that can result in leakage of fluid and bacteria from the gut into the bloodstream;
- Ameliorated TAA-induced liver injury demonstrated by reduced release of liver enzymes and hepatic inflammatory cytokines IL-6 and TNF-alpha; and
- Reduced liver fibrosis, as determined by histological staining of liver tissue and lower expression of markers of fibrosis, such as TGF-beta and alpha-SMA.

Synlogic has also been invited to present preclinical data from its SYNB1020 program at the European Association for the Study of the Liver (EASL) Gut-Liver-Axis Meeting, which will be held June 7-9, in Leuven Belgium.

More information about Synlogic’s Phase1b/2a clinical trial for the treatment of hyperammonemia in patients with cirrhosis, can be found at https://clinicaltrials.gov under the study ID NCT03447730.

About Hyperammonemia

Hyperammonemia is a metabolic condition characterized by an excess of ammonia in the blood. In healthy individuals, ammonia is primarily produced in the intestine as a byproduct of protein metabolism and microbial degradation of nitrogen-containing compounds. Ammonia is then converted to urea in the liver and is excreted in urine. However, if the liver’s ability to convert ammonia to urea is compromised, either due to a genetic defect such as urea cycle disorders (UCDs) or acquired liver disease that leads to cirrhosis, ammonia accumulates in the blood. Elevated blood ammonia levels are toxic to the brain and can have severe consequences, including neurologic crises requiring hospitalization, irreversible cognitive damage and death.

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 two lead programs, SYNB1020 and SYNB1618, target hyperammonemia as a result of liver damage or genetic disease, and PKU, respectively. 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, the company is leveraging the broad potential of its platform to create Synthetic Biotic medicines for the treatment of more common diseases,

including liver disease, inflammatory and immune disorders, and cancer. Synlogic is collaborating with AbbVie to develop Synthetic Biotic-based treatments for inflammatory bowel disease (IBD). 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, 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, liver disease, 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 potential of Synlogic’s technology to treat cancer, hyperammonemia, and phenylketonuria. 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 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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