Press Release
25 February 2020

Lysogene Receives FDA Fast Track Designation for LYS-SAF302 Gene Therapy in MPS IIIA

17th patient dosed in the ongoing phase 2/3 AAVance study

PARIS, France – 25 February 2020 – Lysogene (FR0013233475 – LYS), a pioneering Phase 3 gene therapy platform company targeting central nervous system (CNS) diseases, today announced that the U.S. Food and Drug Administration (FDA) has granted Fast Track Designation to its LYS-SAF302 program for the treatment of mucopolysaccharidosis Type IIIA (MPS IIIA). LYS-SAF302, a second-generation gene therapy, is designed to deliver a functional copy of the SGSH (N-sulfoglucosamine sulfohydrolase) gene to the brain through a one-time direct-to-CNS administration, and is being investigated in the international Phase 2/3 clinical trial AAVance (NCT03612869).

Karen Aiach, Founder and Chief Executive Officer said: "*MPS IIIA is a lethal neurological disease with debilitating symptoms for which there is currently no treatment. The FDA's recognition of LYS-SAF302's potential to improve neurocognitive deficits in children with MPS IIIA represents an important achievement for Lysogene and the patient community.*" **Karen Aiach** added: "*We are also pleased to announce the treatment of the 17th patient with LYS-SAF302, which once again demonstrates our capacity to execute with quality and speed. LYS-SAF302 is the flagship of our differentiated direct-to-CNS gene therapy platform, which has been validated not only by our partner Sarepta, but also by the scientific community. We are fully dedicated to continue the full speed development of LYS-SAF302, as well as all the other programs in our pipeline.*"

The Fast Track program facilitates the development and accelerates the review of new drugs for serious conditions, which have the potential to address unmet medical needs. The purpose is to expedite the availability of new treatment options for patients. A product that receives Fast Track designation is eligible for more frequent interactions with FDA, potential eligibility for accelerated approval, priority review, and rolling Biologics License Application (BLA) review.

"This Fast Track designation demonstrates the regulators' sustained interest in Lysogene's cutting edge in vivo gene therapy program. LYS-SAF302 has previously received Orphan Drug Designations for the treatment of MPS IIIA in the European Union in 2014 and in the US in 2015, as well as Rare Pediatric Disease Designation in the US" added **Marie Deneux, Chief Regulatory Officer**. *"In the complex field of gene therapy for neurodegenerative diseases, a continued communication with FDA is essential."*

The AAVance Phase 2/3 clinical study is designed as an open-label, single-arm, multicenter study of LYS-SAF302 for the treatment of MPS IIIA. The study will include 20 patients with the severe classical form of MPS IIIA and has been extensively discussed upfront with key opinion leaders, regulators and health technology assessment bodies, as well as with patient representatives. As of today, 17 patients have been treated out of the total of 20. The primary objective is to assess the drug efficacy in improving the neurodevelopmental status of patients after 24 months, compared to the expected evolution based on natural history data. Safety, tolerability, effect on behavior, sleep and quality of life will also be collected as secondary endpoints. Lysogene has also set up the sub study, PROVide, collecting supportive video outcomes in the home environment.

About MPS IIIA

MPS IIIA is a rare inherited neurodegenerative lysosomal storage disorder affecting approximately 1 in 100,000 newborns. Inherited in an autosomal recessive pattern, it is characterized by intractable behavioral problems and developmental regression resulting in early death. It is caused by mutations in the SGSH gene, which encodes an enzyme called Heparan-N-sulfamidase necessary for heparan sulfate (HS) recycling in cells. The disrupted lysosomal degradation and resulting storage of HS and glycolipids such as gangliosides leads to severe neurodegeneration. There are currently no treatment options for patients.

About LYS-SAF302

LYS-SAF302 is an AAV-mediated gene therapy, the goal of which is to replace the faulty SGSH gene with a healthy copy of the gene. LYS-SAF302 employs the AAVrh10 virus, chosen for its ability to target the central nervous system. Proof-of-concept was established in MPS IIIA pre-clinical models demonstrating strong expression, broad distribution, and the ability of the product to correct lysosomal storage defects by producing the missing enzyme. Safety data from an IND-enabling toxicity and a biodistribution GLP study showed that, at any dose level evaluated, LYS-SAF302 was not associated with unexpected mortality, change in clinical signs, body weight, behavior or macroscopic findings in the brain. Sarepta holds exclusive commercial rights to LYS-SAF302 in the United States and markets outside Europe; and Lysogene maintains commercial exclusivity of LYS-SAF302 in Europe.

About Lysogene

Lysogene is a gene therapy company focused on the treatment of orphan diseases of the central nervous system (CNS). The company has built a unique capability to enable a safe and effective delivery of gene therapies to the CNS to treat lysosomal diseases and other genetic disorders of the CNS. A phase 2/3 clinical trial in MPS IIIA in partnership with Sarepta Therapeutics, Inc. is ongoing and a phase 1/2 clinical trial in GM1 gangliosidosis is in preparation. In accordance with the agreements signed between Lysogene and Sarepta Therapeutics, Inc., Sarepta Therapeutics, Inc. will hold exclusive commercial rights to LYS-SAF302 in the United States and markets outside Europe; and Lysogene will maintain commercial exclusivity of LYS-SAF302 in Europe. Lysogene is also collaborating with an academic partner to define the strategy of development for the treatment of Fragile X syndrome, a genetic disease related to autism. www.lysogene.com.

Forward Looking Statement

This press release may contain certain forward-looking statements, especially on the Company's progress of its phase 2-3 clinical trial and cash runway. Although the Company believes its expectations are based on reasonable assumptions, all statements other than statements of historical fact included in this press release about future events are subject to (i) change without notice, (ii) factors beyond the Company's control, (iii) clinical trial results, (iv) increased manufacturing costs and (v) potential claims on its products. These statements may include, without limitation, any statements preceded by, followed by or including words such as "target," "believe," "expect," "aim," "intend," "may," "anticipate," "estimate," "plan," "objective", "project," "will," "can have," "likely," "should," "would," "could" and other words and terms of similar meaning or the negative thereof. Forward-looking statements are subject to inherent risks and uncertainties beyond the Company's control that could cause the Company's actual results, performance or achievements to be materially different from the expected results, performance or

achievements expressed or implied by such forward-looking statements. A further list and description of these risks, uncertainties and other risks can be found in the Company's regulatory filings with the French Autorité des Marchés Financiers, including in the 2018 registration document (Document de référence), registered with the French Markets Authorities on April 29, 2019, under number R. 19-016, and future filings and reports by the Company. Furthermore, these forward-looking statements are only as of the date of this press release. Readers are cautioned not to place undue reliance on these forward-looking statements. Except as required by law, the Company assumes no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in the forward-looking statements, even if new information becomes available in the future. If the Company updates one or more forward-looking statements, no inference should be drawn that it will or will not make additional updates with respect to those or other forward-looking statements.

This press release has been prepared in both French and English. In the event of any differences between the two texts, the French language version shall supersede.

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