NTSAD

SAM PARKER
Chief Patient Access Officer

APRIL 12, 2019

LYSOGENE

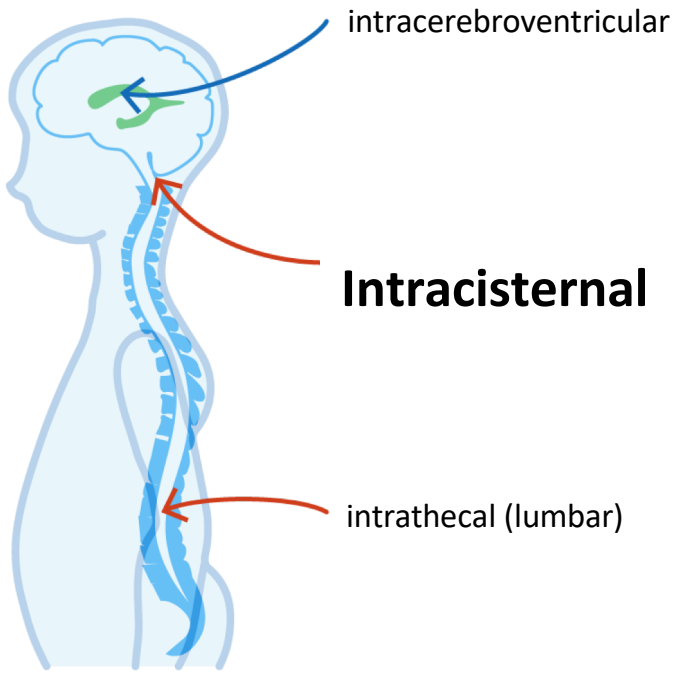
…HOW IT ALL STARTED…

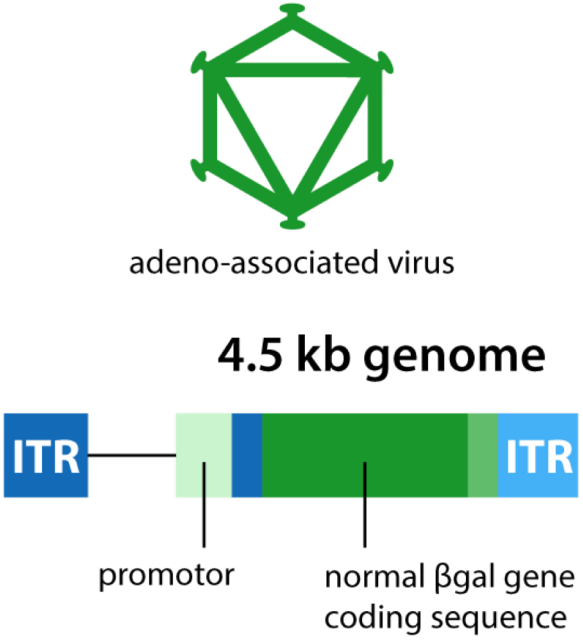
Lysogene Today: Focus in Orphan CNS Diseases

INDICATION	PROGRAM	VECTOR	ENZYME	DEVELOPMENT STAGE				COMMENTS
				POC	PRE-CLINICAL	PHASE 1/2*	PIVOTAL	
Sanfilippo A (MPS IIIA)	**LYS-SAF302**	AAVrh10	N-sulfoglycosamine sulphohydrolase					**PIVOTAL TRIAL START H2 2018 (FPI**)**
GM1 Gangliosidosis	**LYS-GM101**	AAVrh10	Beta-galactosidase-1					Phase 1/2 trial IND submission
Fragile X syndrome (FXS)	**FXS01**	AAV	5'-truncated Diacylglycerol Kinase Kappa (Dgkk)					Pre-clinical proof of concept

*MPS IIIA Phase 1/2: LYS-SAF301, first generation program ** FPI : « First Patient In »: First Patient Enrolled

Intra-CSF administration: Preferred RoA for indications with CNS including spinal cord & cerebellum involvement





- A single therapy is anticipated to compensate for the genetic abnormality
- The goal of therapy is a steady state, rather than varying levels of the therapy over time as with recombinant protein therapy

Gene therapy for GM1 Gangliosidosis

GM1 Gangliosidosis

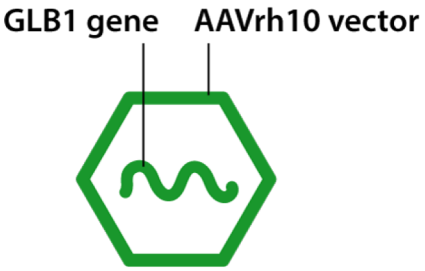
GM1 gangliosidosis disease is caused by the absence or significantly reduced level of the enzyme beta-galactosidase (GLB1).

Severe GM-1 ganglioside build up causes progressive neurodegeneration.

The later onset forms of GM1 occur when the mutations allow the GLB1 enzyme to function a little bit.

Just a small increase in GLB1 activity is enough to delay the onset and slow the progression of symptoms.

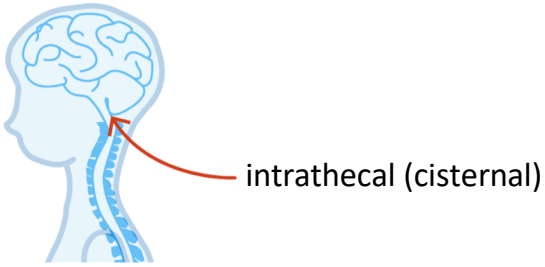
Project: LYS-GM101



Mechanism of action:

Replacement of βgal, reducing GM1 ganglioside accumulation

Administration route



Special regulatory status:

Orphan Drug Designation – FDA Rare Pediatric Disease Designation

AAVrh.10 βgal corrects lysosomal pathology in GM1 animal models

AAVrh.10βgal treatment of GM1 mice and GM1 cats:

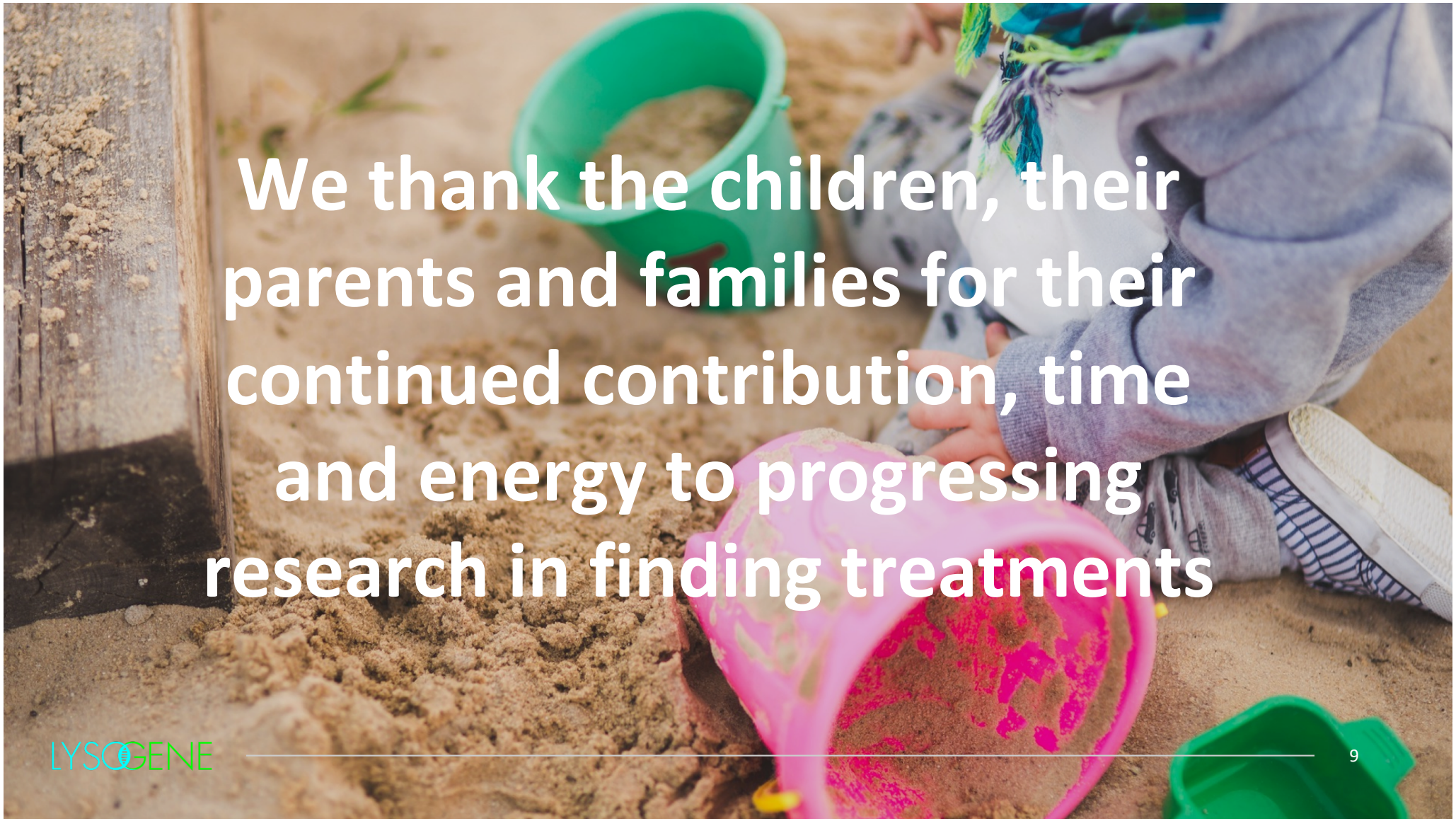
- Significantly increases βgal activity in the brain and reduces lysosomal storage throughout CNS compartments
- Produces long-term βgal expression

In addition, have shown that LYS-SAF302 yields broad distribution of SGSH enzyme activity in brain, cerebellum and spinal cord of non-human primate

GM1 GANGLIOSIDOSIS LYS-GM101: Anticipated adaptive Study Design

Study design	Will primarily look at speech and motor Natural history data, potentially serving as external control, already published and ongoing
Sample size	18 GM1 patients
IND open	2020
Study duration	24 months follow-up
Sites	USA and Europe


Responsibility and Purpose
Create and work beside global networks of patients, experts, clinicians, policy makers and regulators
Patient centric : create therapies that will offer a better life for patients
LYSOGENE


We thank the children, their parents and families for their continued contribution, time and energy to progressing research in finding treatments

SAM PARKER