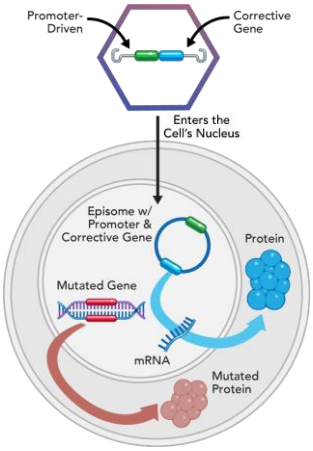
HOMOLOGY
Medicines, Inc.

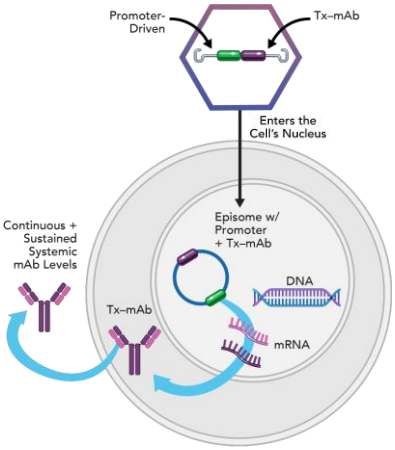
Homology Medicines, Inc. (Nasdaq: FIXX) is a clinical-stage genetic medicines company translating its broad *in vivo* platform into potential one-time treatments, or cures, for the rare disease community.

Homology's technology is based on its proprietary family of 15 adeno-associated virus vectors derived from human stem cells (AAVHSCs). AAVHSCs have the potential to deliver one-time genetic medicines *in vivo* through a **gene therapy** or nuclease-free **gene editing** approach, as well as deliver gene therapy to produce antibodies throughout the body through the **GTx-mAb** platform.

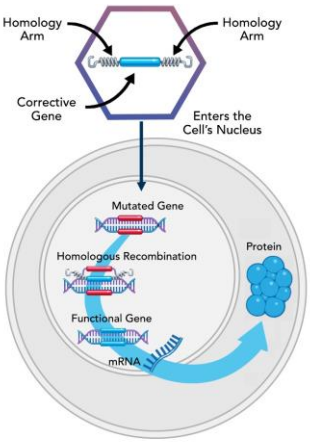
Gene Therapy
(Adds a Gene)



Gene Therapy
(GTx-mAb)



Gene Editing
(Replaces a Gene without Cutting DNA)



Homology is developing one-time treatments for rare diseases, including PKU, an inherited metabolic disorder, MPS II, a lysosomal storage disorder, and multiple discovery-stage programs such as PNH, a rare blood disorder.

	Indication	Research	Preclinical	Phase 1/2	Phase 3
Gene Therapy	Adult Phenylketonuria (PKU)	HMI-102 – Initial Ph 2 Data Expected Mid-2022			
	MPS II (Hunter syndrome)	HMI-203 – Ph 1			
	Metachromatic Leukodystrophy (MLD)	HMI-202 – Vector Optimization			
GTx-mAb Platform	Paroxysmal Nocturnal Hemoglobinuria (PNH)	HMI-104			
Gene Editing (Nuclease-Free)	Pediatric PKU	HMI-103 – Ph 1			
	Human Stem Cells				
	Eye				

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Homology's Clinical Program for PKU

PKU is a rare inborn error of metabolism caused by a mutation in the PAH gene. PKU results in a loss of function of the enzyme phenylalanine hydroxylase, which is responsible for the metabolism of phenylalanine (Phe), an amino acid obtained exclusively from the diet. If left untreated, toxic levels of Phe can accumulate in the blood and result in progressive and severe neurological impairment. Currently, there are no treatment options for PKU that target the underlying genetic cause of the disease. PKU affects* nearly 16,500 people in the U.S. with approximately 350 newborns diagnosed each year.

**National PKU Alliance*

pheNIX
CLINICAL STUDY FOR PATIENTS WITH PKU

pheNIX:

HMI-102 is designed as a one-time gene therapy that is being evaluated in the pheNIX clinical trial, a **Phase 2 dose expansion**, concurrently controlled trial for adults with PKU. Sites are enrolling patients in pheNIX and initial data are expected from the dose expansion phase by mid-2022. Learn more at **phenixpku.com** or **clinicaltrials.gov**.

HMI-102 was granted Orphan Drug Designation and Fast Track Designation by the U.S. FDA and Orphan Drug Designation by the EMA.

pheEDIT:

HMI-103 is designed as a one-time nuclease-free gene editing candidate to be evaluated in the pheEDIT clinical trial, a Phase 1 dose-escalation trial for adults with PKU. Over time, Homology plans to evaluate HMI-103 in the pediatric PKU population.

Homology's Clinical Program for MPS II

MPS II is a rare, X-linked lysosomal storage disorder caused by mutations in the *IDS* gene, which is responsible for producing the I2S enzyme that breaks down glycosaminoglycans (GAGs). Severe MPS II results in toxic lysosomal accumulation of GAGs that causes progressive debilitation and decline in intellectual function. MPS II occurs in approximately 1 in 100,000 to 1 in 170,000 males.

juMPStart:

HMI-203 is designed as a one-time gene therapy that is being evaluated in the juMPStart clinical trial, a **Phase 1 dose-escalation** trial for adults with MPS II.

Homology's Manufacturing Expertise

Homology has a commercial GMP manufacturing platform, that allows direct 'plug and play' capability to deliver both high titer and the highest level of vector quality. This fully integrated internal capability has now delivered the products for three INDs, including our first gene editing product. Homology was one of the first companies to successfully scale to a 2,000L bioreactor in a HEK293 suspension system and now has 3,500L of active capacity. Homology's 'plug and play' model enables rapid and efficient changes to capsids or cDNA without the need for custom process development.

Homology's Senior Leadership Team

Homology has a team of experienced and dedicated leaders in rare diseases and genetic medicines with a proven track record of developing and launching rare disease drugs.