Table SI. Genetic conditions associated with variants in human *RPL36A-HNRNPH2* (ENSG00000257529) readthrough, including the *GLA* and rat orthologue gene ENSRNOG00000050463.[a]

Homo sapiens		*Rattus norvegicus*
Genetic condition/disease	ClinVar variants	Genetic condition/disease
Migalastat response	45	Sudden death
Neurodevelopmental disorder	1	Syndromic X-linked mental retardation, Bain type
Mental retardation, x-linked, syndromic, Bain type	5	Syndromic X-linked intellectual disability Lubs type
Cardiovascular phenotype	16	Autistic disorder
Sudden unexplained death	1	Familial hypertrophic cardiomyopathy
Hypertrophic cardiomyopathy	8	Neurodevelopmental disorders
Familial hypertrophic cardiomyopathy 1	2	Hypertrophic cardiomyopathy
Primary familial hypertrophic cardiomyopathy	6	Cardiomyopathy
Fabry disease, cardiac variant	6	Fabry disease, Cardiac variant
Fabry disease	321	Fabry disease
Cardiomyopathy	12	-

Data from Ensembl and ClinVar databases.

Table SII. Severity scores of FD patients.

Patients	MSSI score				FOS-MSSI			
	General score	Neurological score	Cardiovascular score	Renal score	General score	Neurological score	Cardiovascular score	Renal score
FD1	1	3	10	0	1	4	12	0
FD2	1	3	10	0	1	4	12	0
FD3	3	8	0	0	1	8	0	0
FD4	5	2	12	18	5.1	1	7	18

MSSI, Mainz Severity Score Index; FOS-MSSI, Fabry Outcome Survey adaptation of the Mainz Severity Score Index; FD, Fabry disease.

Table SIII. Summary of *GLA* and *HNRNPH2* expression vs. BPD methylation and severity of FD in the four patients. Severity score is the sum of the FOS-MSSI scores per patient in Table I. Methylation and expression vs. control.

Patient	Sex	FD Severity	*GLA* Expression[a]	*HNRNPH2* Expression[b]	BDP Methylation[a]
FD1	F	17	Decrease	Decrease	Increase
FD2	F	17	Decrease	Decrease	Increase
FD3	M	9	Decrease	Decrease	Increase
FD4	M	31.1	Decrease	Decrease	Increase

[a]Significant decrease or increase,$P<0.05$. [b]Insignificant decrease, $P>0.05$. BPD, bidirectional promoter; FD, Fabry disease; F, female; M, male.