

GEPHE SUMMARY

Gephebase Gene		GepheID
Latexin (Lxn) (https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=~Latexin+(Lxn)^#gephebase-summary-title)	GP00000534	
Entry Status		Main curator
Published		

PHENOTYPIC CHANGE

Trait Category			
Morphology (https://www.gephebase.org/search-criteria?/and+Trait+Category=~Morphology^#gephebase-summary-title)			
Trait			
Stem cell number (hematopoietic precursors) (https://www.gephebase.org/search-criteria?/and+Trait=~Stem+cell+number+(hematopoietic+precursors)^#gephebase-summary-title)			
Trait State in Taxon A			
Mus musculus C57BL/6 (B6)			
Trait State in Taxon B			
Mus musculus DBA/2 (D2)			
Ancestral State			
Data not curated			
Taxonomic Status			
Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Intraspecific^#gephebase-summary-title)			
Taxon A		Taxon B	
Latin Name		Latin Name	
Mus musculus (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Mus+musculus^#gephebase-summary-title)		Mus musculus (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Mus+musculus^#gephebase-summary-title)	
Common Name		Common Name	
house mouse		house mouse	
Synonyms		Synonyms	
house mouse; mouse; Mus musculus Linnaeus, 1758; mice C57BL/6xCBA/CaJ hybrid		house mouse; mouse; Mus musculus Linnaeus, 1758; mice C57BL/6xCBA/CaJ hybrid	
Rank		Rank	
species		species	
Lineage		Lineage	
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus		cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Euarchontoglires; Glires; Rodentia; Myomorpha; Muroidea; Muridae; Murinae; Mus; Mus	
Parent		Parent	
Mus () - (Rank: subgenus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=862507)		Mus () - (Rank: subgenus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=862507)	
NCBI Taxonomy ID		NCBI Taxonomy ID	
10090 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=10090)		10090 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=10090)	
is Taxon A an Intraspecies?		is Taxon B an Intraspecies?	
Yes		Yes	
Taxon A Description		Taxon B Description	
Mus musculus C57BL/6 (B6)		Mus musculus DBA/2 (D2)	

GENOTYPIC CHANGE

Generic Gene Name		UniProtKB Mus musculus
Lxn		P70202 (http://www.uniprot.org/uniprot/P70202)
Synonyms		GenebankID or UniProtKB
-		AK0332170 (https://www.ncbi.nlm.nih.gov/nuccore/AK0332170)
String		
10090.ENSMUSP00000060732 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=10090.ENSMUSP00000060732)		
Sequence Similarities		
Belongs to the protease inhibitor I47 (latexin) family.		
GO - Molecular Function		
GO:0008201 : heparin binding (https://www.ebi.ac.uk/QuickGO/term/GO:0008201)		
GO:0008191 : metalloendopeptidase inhibitor activity (https://www.ebi.ac.uk/QuickGO/term/GO:0008191)		
GO - Biological Process		

GO:0006954 : inflammatory response
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006954>)
GO:0050965 : detection of temperature stimulus involved in sensory perception of pain
(<https://www.ebi.ac.uk/QuickGO/term/GO:0050965>)
GO - Cellular Component
GO:0005737 : cytoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005737>)

	Presumptive Null
Unknown (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Unknown^#gephebase-summary-title)	
	Molecular Type
Cis-regulatory (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Cis-regulatory^#gephebase-summary-title)	
	Aberration Type
Unknown (https://www.gephebase.org/search-criteria?/and+Aberration Type=~Unknown^#gephebase-summary-title)	
	Molecular Details of the Mutation
Not identified	
	Experimental Evidence
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Linkage Mapping^#gephebase-summary-title)	
	Main Reference
The quantitative trait gene latexin influences the size of the hematopoietic stem cell population in mice. (2007) (https://pubmed.ncbi.nlm.nih.gov/17220891)	
	Authors
Liang Y; Jansen M; Aronow B; Geiger H; Van Zant G	
	Abstract
We mapped quantitative trait loci that accounted for the variation in hematopoietic stem cell (HSC) numbers between young adult C57BL/6 (B6) and DBA/2 (D2) mice. In reciprocal chromosome 3 congenic mice, introgressed D2 alleles increased HSC numbers owing to enhanced proliferation and self-renewal and reduced apoptosis, whereas B6 alleles had the opposite effects. Using oligonucleotide arrays, real-time PCR and protein blots, we identified latexin (Lxn), a gene whose differential transcription and expression was associated with the allelic differences. Expression was inversely correlated with the number of HSCs; therefore, ectopic expression of Lxn using a retroviral vector decreased stem cell population size. We identified clusters of SNPs upstream of the Lxn transcriptional start site, at least two of which are associated with potential binding sites for transcription factors regulating stem cells. Thus, promoter polymorphisms between the B6 and D2 alleles may affect Lxn gene expression and consequently influence the population size of hematopoietic stem cells.	
	Additional References

RELATED GEPHE

	Related Genes
No matches found.	
	Related Haplotypes
No matches found.	

EXTERNAL LINKS

COMMENTS