

GEPHE SUMMARY

	Gephebase Gene	GephelD
FGF5 (https://www.gephebase.org/search-criteria/?and+Gene+Gephebase=%FGF5%#gephebase-summary-title)	GP00002441	Main curator
Published	Entry Status	Courtier

PHENOTYPIC CHANGE

Morphology (<https://www.gephebase.org/search-criteria/?and+Trait+Category=%Morphology%#gephebase-summary-title>)

Trait Category

Hair length (<https://www.gephebase.org/search-criteria/?and+Trait=%Hair+length%#gephebase-summary-title>)

Trait

normal hair length

Trait State in Taxon A

Angora mouse: abnormally long hair; altered hair cycle; follicular dystrophy; phenotypic maintenance of skin grafts and changes in keratin expression

Ancestral State

Taxon A

Taxonomic Status

Domesticated (<https://www.gephebase.org/search-criteria/?and+Taxonomic+Status=%Domesticated%#gephebase-summary-title>)

Taxon A

Latin Name

Mus musculus

(<https://www.gephebase.org/search-criteria/?and+Taxon+and+Synonyms=%Mus+musculus%#gephebase-summary-title>)

Common Name

house mouse

Synonyms

house mouse; mouse; *Mus musculus* Linnaeus, 1758; mice C57BL/6xCBA/CaJ hybrid

Rank

species

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*

Parent

Mus () - (Rank: subgenus)

(<https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=862507>)

NCBI Taxonomy ID

10090

(<https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=10090>)

is Taxon A an Infraspecies?

No

Taxon B

Latin Name

Mus musculus

(<https://www.gephebase.org/search-criteria/?and+Taxon+and+Synonyms=%Mus+musculus%#gephebase-summary-title>)

Common Name

house mouse

Synonyms

house mouse; mouse; *Mus musculus* Linnaeus, 1758; mice C57BL/6xCBA/CaJ hybrid

Rank

species

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*

Parent

Mus () - (Rank: subgenus)

(<https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=862507>)

NCBI Taxonomy ID

10090

(<https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=10090>)

is Taxon B an Infraspecies?

No

GENOTYPIC CHANGE

Fgf5	Generic Gene Name	UniProtKB <i>Mus musculus</i>
go: Fgf-5; HBGF-5; angora	Synonyms	GenebankID or UniProtKB
10090.ENSMUSP00000031280 (http://string-db.org/newstring_cgi/show_network_section.pl?identifier=10090.ENSMUSP00000031280)	String	0
Belongs to the heparin-binding growth factors family.	Sequence Similarities	
GO:0008083 : growth factor activity (https://www.ebi.ac.uk/QuickGO/term/GO:0008083)	GO - Molecular Function	
GO:0005104 : fibroblast growth factor receptor binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005104)	GO - Biological Process	
GO:0008283 : cell proliferation (https://www.ebi.ac.uk/QuickGO/term/GO:0008283)		
GO:0008284 : positive regulation of cell proliferation		

(https://www.ebi.ac.uk/QuickGO/term/GO:0008284)	
GO:0051781 : positive regulation of cell division	
(https://www.ebi.ac.uk/QuickGO/term/GO:0051781)	
GO:0008543 : fibroblast growth factor receptor signaling pathway	
(https://www.ebi.ac.uk/QuickGO/term/GO:0008543)	
GO:0010001 : glial cell differentiation	
(https://www.ebi.ac.uk/QuickGO/term/GO:0010001)	
GO:0023019 : signal transduction involved in regulation of gene expression	
(https://www.ebi.ac.uk/QuickGO/term/GO:0023019)	
GO - Cellular Component	
GO:0005576 : extracellular region (https://www.ebi.ac.uk/QuickGO/term/GO:0005576)	Presumptive Null
Yes (#gephebase-summary-title)	Molecular Type
Coding (#gephebase-summary-title)	Aberration Type
Deletion (#gephebase-summary-title)	Deletion Size
1-10 kb	Molecular Details of the Mutation
Deletion which extends at least 2kb upstream of the Fgf5 translational start site and terminates at the end of the first exon or beginning of the first intron.	Experimental Evidence
Candidate Gene (#gephebase-summary-title)	Main Reference
FGF5 as a regulator of the hair growth cycle: evidence from targeted and spontaneous mutations. (1994) (https://pubmed.ncbi.nlm.nih.gov/7923352)	Authors
HÃ©bert JM; Rosenquist T; GÃ¶tz J; Martin GR	Abstract
Fibroblast growth factor 5 (FGF5) is a secreted signaling protein. Mice homozygous for a predicted null allele of the Fgf5 gene, fgf5neo, produced by gene targeting in embryonic stem cells, have abnormally long hair. This phenotype appears identical to that of mice homozygous for the spontaneous mutation angora (go). The fgf5neo and go mutations fail to complement one another, and exon 1 of Fgf5 is deleted in DNA from go homozygotes, demonstrating that go is a mutant allele of Fgf5. Expression of Fgf5 is detected in hair follicles from wild-type mice and is localized to the outer root sheath during the anagen VI phase of the hair growth cycle. These findings provide evidence that FGF5 functions as an inhibitor of hair elongation, thus identifying a molecule whose normal function is apparently to regulate one step in the progression of the follicle through the hair growth cycle.	Additional References
Angora mouse mutation: altered hair cycle, follicular dystrophy, phenotypic maintenance of skin grafts, and changes in keratin expression. (1997) (https://pubmed.ncbi.nlm.nih.gov/9163872)	

RELATED GEPHE

No matches found.	Related Genes
	Related Haplotypes
1 (#gephebase-summary-title)	

EXTERNAL LINKS

COMMENTS

Angora is a spontaneous mutation.