

	Gephebase Gene	GepheID
tyrosinase-related protein 1 (TYRP1) (<a +tyrosinase-related+protein+1+(tyrp1)^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+tyrosinase-related+protein+1+(TYRP1)^#gephebase-summary-title)	GP00002241	Main curator
	Martin	
Published	Entry Status	

Trait Category		Trait	
Morphology (https://www.gephebase.org/search-criteria?/and+Trait+Category=~Morphology~#gephebase-summary-title)			
Coloration (coat) (https://www.gephebase.org/search-criteria?/and+Trait=~Coloration+coat~#gephebase-summary-title)			
	Trait State in Taxon A		
Brown mink		Trait State in Taxon B	
American Palomino - clear pale tan			
	Ancestral State		
Taxon A			
	Taxonomic Status		
Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Domesticated~#gephebase-summary-title)			
Taxon A		Taxon B	
	Latin Name		Latin Name
Neovison vison (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Neovison+vison~#gephebase-summary-title)		Neovison vison (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Neovison+vison~#gephebase-summary-title)	
	Common Name		Common Name
American mink		American mink	
	Synonyms		Synonyms
Mustela vison; American mink; mink; Mustela vison		Mustela vison; American mink; mink; Mustela vison	
	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; Laurasiatheria; Carnivora; Caniformia; Mustelidae; Mustelinae; Neovison		cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Laurasiatheria; Carnivora; Caniformia; Mustelidae; Mustelinae; Neovison	
	Parent		Parent
Neovison () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=452645)		Neovison () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=452645)	
	NCBI Taxonomy ID		NCBI Taxonomy ID
452646 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=452646)		452646 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=452646)	
	is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
No		No	

Tyrp1 b; isa; Oca3; TRP1; Tyrp; TRP-1; brown; Tyrp-1 10090.ENS MUSP00000006151 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=10090.ENS MUSP00000006151) Belongs to the tyrosinase family. GO:0042803 : protein homodimerization activity (https://www.ebi.ac.uk/QuickGO/term/GO:0042803) GO:0046982 : protein heterodimerization activity (https://www.ebi.ac.uk/QuickGO/term/GO:0046982) GO:0046872 : metal ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0046872) GO:0004497 : monooxygenase activity	Generic Gene Name Synonyms String Sequence Similarities GO - Molecular Function	P07147 (http://www.uniprot.org/uniprot/P07147) ABW05106 (https://www.ncbi.nlm.nih.gov/nuccore/ABW05106) UniProtKB Mus musculus GenebankID or UniProtKB
---	--	--

(<https://www.ebi.ac.uk/QuickGO/term/GO:0004497>)

GO - Biological Process

GO:0032438 : melanosome organization
(<https://www.ebi.ac.uk/QuickGO/term/GO:0032438>)
GO:0043473 : pigmentation (<https://www.ebi.ac.uk/QuickGO/term/GO:0043473>)
GO:0048023 : positive regulation of melanin biosynthetic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0048023>)
GO:0006583 : melanin biosynthetic process from tyrosine
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006583>)
GO:0030318 : melanocyte differentiation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0030318>)
GO:0043438 : acetoacetic acid metabolic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0043438>)
GO:0006582 : melanin metabolic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006582>)

GO - Cellular Component

GO:0016021 : integral component of membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0016021>)
GO:0030669 : clathrin-coated endocytic vesicle membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0030669>)
GO:0010008 : endosome membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0010008>)
GO:0042470 : melanosome (<https://www.ebi.ac.uk/QuickGO/term/GO:0042470>)
GO:0033162 : melanosome membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0033162>)

Yes (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Yes~#gephebase-summary-title)	Presumptive Null
Cis-regulatory (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Cis-regulatory~#gephebase-summary-title)	Molecular Type
Insertion (https://www.gephebase.org/search-criteria?/and+Aberration Type=~Insertion~#gephebase-summary-title)	Aberration Type
unknown	Insertion Size
Large insertion in intron 2 resulting in aberrant transcript	Molecular Details of the Mutation
Candidate Gene (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Candidate Gene~#gephebase-summary-title)	Experimental Evidence
A large insertion in intron 2 of the TYRP1 gene associated with American Palomino phenotype in American mink. (2016) (https://pubmed.ncbi.nlm.nih.gov/26886941)	Main Reference
Cirera S; Markakis MN; Kristiansen T; Vissenberg K; Fredholm M; Christensen K; Anistoroei R	Authors
A number of American mink phenotypes display a range of brownish colours. One of these phenotypes, namely American Palomino (b (P) b (P)) (AP) has been found to be associated with the tyrosinase-related protein 1 (TYRP1) gene by genotyping microsatellite markers in one sire family. Trials for amplifying the genomic DNA and cDNA at the beginning of intron 2 of AP TYRP1 revealed the presence of a large insertion of approximately eight kb. The insertion most likely disrupts different elements necessary for the splicing of intron 2 of the TYRP1 gene. In AP RNAseq data indicate, however, the presence of the wild-type (wt) transcript at very low levels and Western blot reveals three products when using an antibody raised against middle part of the TYRP1 protein. One individual from another brown mink phenotype-commercially named Dawn-was also investigated at the molecular level by long-range PCR and the same size insertion appears to be present. By this we suggest that certain modifiers of TYRP1 would induce different brown colour degradation, which results in at least two different phases of brown.	Abstract
	Additional References

RELATED GEPHE

2 (Melanophilin (MLPH), tyrosinase (TYR)) (https://www.gephebase.org/search-criteria?/or+Taxon ID=~452646~/and+Trait=Coloration/and+groupHaplotypes=true#gephebase-summary-title)	Related Genes
No matches found.	Related Haplotypes

EXTERNAL LINKS

COMMENTS

<https://omia.org/OMIA001249/452646/>

