

	Gephebase Gene	GepheID
Melanophilin (MLPH) (https://www.gephebase.org/search-criteria?/and+Gene Gephebase="Melanophilin (MLPH)"#gephebase-summary-title)	GP00000650	
	Entry Status	Main curator
Published	Martin	

Morphology (https://www.gephebase.org/search-criteria?/and+Trait+Category=~Morphology~#gephebase-summary-title)		Trait Category
Coloration (feathers) (https://www.gephebase.org/search-criteria?/and+Trait=~Coloration+feathers~#gephebase-summary-title)		Trait
Coturnix japonica		Trait State in Taxon A
Coturnix japonica - lavender		Trait State in Taxon B
Data not curated		Ancestral State
Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Domesticated~#gephebase-summary-title)		Taxonomic Status
Taxon A	Taxon B	
Coturnix japonica (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Coturnix+japonica~#gephebase-summary-title)	Coturnix japonica (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Coturnix+japonica~#gephebase-summary-title)	Latin Name
Japanese quail	Japanese quail	Common Name
Coturnix coturnix Japonicus; Coturnix coturnix japonica; Coturnix japonica japonica; Japanese quail; Coturnix japonica Temminck & Schlegel, 1849	Coturnix coturnix Japonicus; Coturnix coturnix japonica; Coturnix coturnix japonica; Coturnix japonica japonica; Japanese quail; Coturnix japonica Temminck & Schlegel, 1849	Synonyms
species	species	Rank
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Sauropsida; Sauria; Archelosauria; Archosauria; Dinosauria; Saurischia; Theropoda; Coelurosauria; Aves; Neognathae; Galloanserae; Galliformes; Phasianidae; Perdiciinae; Coturnix	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Sauropsida; Sauria; Archelosauria; Archosauria; Dinosauria; Saurischia; Theropoda; Coelurosauria; Aves; Neognathae; Galloanserae; Galliformes; Phasianidae; Perdiciinae; Coturnix	Lineage
Coturnix () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9090)	Coturnix () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9090)	Parent
93934 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=93934)	93934 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=93934)	NCBI Taxonomy ID
No	Yes	is Taxon A an Intraspecies?
	Coturnix japonica - lavender	Taxon B Description

UniProtKB Mus musculus	Generic Gene Name	UniProtKB Mus musculus
Q91V27 (http://www.uniprot.org/uniprot/Q91V27)	Mlph	
GenebankID or UniProtKB	Synonyms	
AFR46004 (https://www.ncbi.nlm.nih.gov/nuccore/AFR46004)	In; liRk3; Slac-2a; AW228792; D1Wsu84e; l(1)-3Rk; 2210418F23Rik; 5031433l09Rik; Ln; Slac2a	
	String	
	10090.ENSMUSP00000027528 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=10090.ENSMUSP00000027528)	
	Sequence Similarities	
	-	
	GO - Molecular Function	
	GO:0046872 : metal ion binding (https://www.ebi.ac.uk/QuickGO/term/GO:0046872)	
	GO:0017137 : Rab GTPase binding (https://www.ebi.ac.uk/QuickGO/term/GO:0017137)	

GO:0003779 : actin binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0003779>)
GO:0030674 : protein binding, bridging (<https://www.ebi.ac.uk/QuickGO/term/GO:0030674>)
GO:0051010 : microtubule plus-end binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0051010>)
GO:0017022 : myosin binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0017022>)
GO:0031489 : myosin V binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0031489>)
GO - Biological Process
GO:0043473 : pigmentation (<https://www.ebi.ac.uk/QuickGO/term/GO:0043473>)
GO:0030318 : melanocyte differentiation (<https://www.ebi.ac.uk/QuickGO/term/GO:0030318>)
GO:0032400 : melanosome localization (<https://www.ebi.ac.uk/QuickGO/term/GO:0032400>)
GO:0006605 : protein targeting (<https://www.ebi.ac.uk/QuickGO/term/GO:0006605>)
GO - Cellular Component

GO:0015629 : actin cytoskeleton (<https://www.ebi.ac.uk/QuickGO/term/GO:0015629>)
GO:0030425 : dendrite (<https://www.ebi.ac.uk/QuickGO/term/GO:0030425>)
GO:0048471 : perinuclear region of cytoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0048471>)
GO:0005815 : microtubule organizing center (<https://www.ebi.ac.uk/QuickGO/term/GO:0005815>)
GO:0030864 : cortical actin cytoskeleton (<https://www.ebi.ac.uk/QuickGO/term/GO:0030864>)
GO:0042470 : melanosome (<https://www.ebi.ac.uk/QuickGO/term/GO:0042470>)
GO:0001725 : stress fiber (<https://www.ebi.ac.uk/QuickGO/term/GO:0001725>)
GO:0016461 : unconventional myosin complex (<https://www.ebi.ac.uk/QuickGO/term/GO:0016461>)

	Presumptive Null
Unknown (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Unknown~#gephebase-summary-title)	
	Molecular Type
Unknown (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Unknown~#gephebase-summary-title)	
	Aberration Type
Complex Change (https://www.gephebase.org/search-criteria?/and+Aberration Type=~Complex Change~#gephebase-summary-title)	
	Molecular Details of the Mutation
Large deletions and rearrangement with pseudogenization of MLPH and loss of two other genes	
	Experimental Evidence
Linkage Mapping (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Linkage Mapping~#gephebase-summary-title)	
	Main Reference
Plumage colour mutations and melanins in the feathers of the Japanese quail: a first comparison. (2009) (https://pubmed.ncbi.nlm.nih.gov/19496774)	
	Authors
Minvielle F; Cecchi T; Passamonti P; Gourichon D; Renieri C	

	Abstract
The absorbance of melanin content from dorsal feathers was compared between wild-type Japanese quail and nine other quail plumage colours determined by single mutations in one of seven genes: extended brown (MC1R), yellow (ASIP), silver (MITF), lavender (MLPH), roux (TYRP1), imperfect albinism (SLC45A2) and rusty. As compared with wild-type quail, all mutations but extended brown decreased total melanins. The largest decrease was observed in quail with one of the dilution mutations at TYRP1, MLPH or SLCA45A2. No difference in eumelanins was found between the 10 plumage colours. Despite visible colour differences, homozygous and heterozygous mutants at MITF, or the two imperfect albino (white) and cinnamon (pale yellow) alleles at SLC45A2, could not be differentiated on the basis of melanins. In contrast, the two white phenotypes caused by mutations at MITF and SLC45A2, or the two reddish plumage colours caused by the roux and rusty non-allelic mutations had different total melanin contents. The results showed that rusty was not likely to be a dilution mutation.	
	Additional References
The lavender plumage colour in Japanese quail is associated with a complex mutation in the region of MLPH that is related to differences in growth, feed consumption and body temperature. (2012) (https://pubmed.ncbi.nlm.nih.gov/22937744)	

RELATED GEPHE

	Related Genes
6 (Agouti, Endothelin receptor B, MC1R, Microphthalmia-associated transcription factor, SLC45A2=MATP, tyrosinase-related protein 1 (TYRP1)) (https://www.gephebase.org/search-criteria?/or+Taxon ID=~93934~/and+Trait=Coloration/and+groupHaplotypes=true#gephebase-summary-title)	
	Related Haplotypes
No matches found.	

EXTERNAL LINKS

COMMENTS

@Parallelism <https://omia.org/OMIA001445/93934/>

