

GEPHE SUMMARY

MC1R (https://www.gephebase.org/search-criteria?/and+GeneGephebase=~MC1R^#gephebase-summary-title)	Gephebase Gene	GP00001352	GepheID
	Entry Status	Prigent	Main curator
	Published		

PHENOTYPIC CHANGE

Morphology (https://www.gephebase.org/search-criteria?/and+TraitCategory=~Morphology^#gephebase-summary-title)		Trait Category	
Coloration (feathers) (https://www.gephebase.org/search-criteria?/and+Trait=~Coloration(feathers)^#gephebase-summary-title)		Trait	
Domestic duck ; Wild type non-extended black-(Jingjiang and Shanna and Shaoxing and Youxian and Jinyun and Mallard)		Trait State in Taxon A	
Domestic duck-extended black-(Black Putian and Black Jingwu)		Trait State in Taxon B	
Taxon A		Ancestral State	
Domesticated (https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=~Domesticated^#gephebase-summary-title)		Taxonomic Status	
Taxon A		Taxon B	
Anas platyrhynchos (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Anas+platyrhynchos^#gephebase-summary-title)		Anas platyrhynchos (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Anas+platyrhynchos^#gephebase-summary-title)	
Common Name		Common Name	
mallard		mallard	
Synonyms		Synonyms	
Anas boschas; Anas domesticus; Anas platyrhynchos f. domestica; mallard; duck; mallard duck; mallard ducks; Anas platyrhynchos Linnaeus 1758; Anas platyrhynchos		Anas boschas; Anas domesticus; Anas platyrhynchos f. domestica; mallard; duck; mallard duck; mallard ducks; Anas platyrhynchos Linnaeus 1758; Anas platyrhynchos	
Rank		Rank	
species		species	
Lineage		Lineage	
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; Anseriformes; Anatidae; Anatinae; Anas		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; Anseriformes; Anatidae; Anatinae; Anas	
Parent		Parent	
Anas (ducks) - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 8835)		Anas (ducks) - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 8835)	
NCBI Taxonomy ID		NCBI Taxonomy ID	
8839 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 8839)		8839 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 8839)	
is Taxon A an Intraspecies?		is Taxon B an Intraspecies?	
Yes		Yes	
Taxon A Description		Taxon B Description	
Domestic duck ; Wild type non-extended black-(Jingjiang and Shanna and Shaoxing and Youxian and Jinyun and Mallard)		Domestic duck-extended black-(Black Putian and Black Jingwu)	

GENOTYPIC CHANGE

Mc1r		Generic Gene Name	
e; Tob; Mcr1; Mshra; Msh-r		Q01727 (http://www.uniprot.org/uniprot/Q01727)	
String		GenebankID or UniProtKB	
10090.ENSMUSP00000095929 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=10090.ENSMUSP00000095929)		0	
Sequence Similarities			
Belongs to the G-protein coupled receptor 1 family.			
GO:0004977 : melanocortin receptor activity		GO - Molecular Function	

(<https://www.ebi.ac.uk/QuickGO/term/GO:0004977>)
GO:0004980 : melanocyte-stimulating hormone receptor activity
(<https://www.ebi.ac.uk/QuickGO/term/GO:0004980>)
GO:0031625 : ubiquitin protein ligase binding
(<https://www.ebi.ac.uk/QuickGO/term/GO:0031625>)
GO:0042562 : hormone binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0042562>)
GO - Biological Process
GO:0045944 : positive regulation of transcription by RNA polymerase II
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045944>)
GO:0042438 : melanin biosynthetic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042438>)
GO:0043473 : pigmentation (<https://www.ebi.ac.uk/QuickGO/term/GO:0043473>)
GO:0051897 : positive regulation of protein kinase B signaling
(<https://www.ebi.ac.uk/QuickGO/term/GO:0051897>)
GO:0019233 : sensory perception of pain
(<https://www.ebi.ac.uk/QuickGO/term/GO:0019233>)
GO:0007189 : adenylate cyclase-activating G protein-coupled receptor signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0007189>)
GO:0035556 : intracellular signal transduction
(<https://www.ebi.ac.uk/QuickGO/term/GO:0035556>)
GO:0032720 : negative regulation of tumor necrosis factor production
(<https://www.ebi.ac.uk/QuickGO/term/GO:0032720>)
GO:0010739 : positive regulation of protein kinase A signaling
(<https://www.ebi.ac.uk/QuickGO/term/GO:0010739>)
GO:0090037 : positive regulation of protein kinase C signaling
(<https://www.ebi.ac.uk/QuickGO/term/GO:0090037>)
GO:0070914 : UV-damage excision repair
(<https://www.ebi.ac.uk/QuickGO/term/GO:0070914>)
GO:2000253 : positive regulation of feeding behavior
(<https://www.ebi.ac.uk/QuickGO/term/GO:2000253>)
GO:0060259 : regulation of feeding behavior
(<https://www.ebi.ac.uk/QuickGO/term/GO:0060259>)

GO - Cellular Component

GO:0016021 : integral component of membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0016021>)
GO:0005886 : plasma membrane (<https://www.ebi.ac.uk/QuickGO/term/GO:0005886>)

No (https://www.gephebase.org/search-criteria?/and+Presumptive Null=~No~#gephebase-summary-title)	Presumptive Null
Coding (https://www.gephebase.org/search-criteria?/and+Molecular Type=~Coding~#gephebase-summary-title)	Molecular Type
SNP (https://www.gephebase.org/search-criteria?/and+Aberration Type=~SNP~#gephebase-summary-title)	Aberration Type
Nonsynonymous	SNP Coding Change
c.52G>A p.Glu18Lys	Molecular Details of the Mutation
Candidate Gene (https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Candidate Gene~#gephebase-summary-title)	Experimental Evidence

	Taxon A	Taxon B	Position
Codon	-	-	-
Amino-acid	-	-	-

Non-synonymous SNPs in MC1R gene are associated with the extended black variant in domestic ducks (<i>Anas platyrhynchos</i>). (2013) (https://pubmed.ncbi.nlm.nih.gov/22591010)	Main Reference
Yu W; Wang C; Xin Q; Li S; Feng Y; Peng X; Gong Y	Authors
In this study, we performed a sequence characterization of the duck melanocortin 1 receptor (alpha-melanocyte stimulating hormone receptor) (MC1R) gene to analyze the relationship between MC1R polymorphism and the extended black variant in domestic ducks based on the extended black (E) and non-extended black (e(+)) allele hypothesis of the duck MC1R gene. Both c.52G>A and c.376G>A substitutions are highly associated with the duck extended black variant (P<0.01), but the novel c.52G>A substitution is more of a fit for the allele hypothesis of the duck MC1R gene.	Abstract

© 2012 The Authors. Animal Genetics © 2012 Stichting International Foundation for Animal Genetics.

Additional References

RELATED GEPHE

2 (Endothelin receptor B2, Microphthalmia-associated transcription factor) (https://www.gephebase.org/search-criteria?/or+Taxon ID=~8839~/and+Trait=Coloration/and+groupHaplotypes=true#gephebase-summary-title)	Related Genes
	Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS

the p.Glu18Lys is assumed to have created a hyperactive MC1R protein - it is also mostly associated to c.376G>A