

GEPHE SUMMARY

<p>Endothelin receptor B2 (https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=^Endothelin receptor B2^#gephebase-summary-title)</p> <p>Published</p>	<p>Gephebase Gene</p> <p>Entry Status</p>	<p>GP00002378</p> <p>Santos</p>	<p>GepheID</p> <p>Main curator</p>
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PHENOTYPIC CHANGE

<p>Morphology (https://www.gephebase.org/search-criteria?/and+Trait+Category=^Morphology^#gephebase-summary-title)</p> <p>Coloration (feathers ; white-spotting) (https://www.gephebase.org/search-criteria?/and+Trait=^Coloration (feathers ; white-spotting)^#gephebase-summary-title)</p> <p>Plain colour</p> <p>White-spotted</p> <p>Taxon A</p> <p>Domesticated (https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=^Domesticated^#gephebase-summary-title)</p>	<p>Trait Category</p> <p>Trait</p> <p>Trait State in Taxon A</p> <p>Trait State in Taxon B</p> <p>Ancestral State</p> <p>Taxonomic Status</p>		
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	Taxon A		Taxon B
<p>Anas platyrhynchos (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Anas platyrhynchos^#gephebase-summary-title)</p> <p>Common Name</p> <p>mallard</p> <p>Synonyms</p> <p>Anas boschas; Anas domesticus; Anas platyrhynchos f. domestica; mallard; duck; mallard duck; mallard ducks; Anas platyrhynchos Linnaeus 1758; Anas platyrhynchos</p> <p>Rank</p> <p>species</p> <p>Lineage</p> <p>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</p> <p>Parent</p> <p>Anas (ducks) - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=8835)</p> <p>NCBI Taxonomy ID</p> <p>8839 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=8839)</p> <p>is Taxon A an Intraspecies?</p> <p>No</p>	<p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p> <p>is Taxon A an Intraspecies?</p>	<p>Anas platyrhynchos (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Anas platyrhynchos^#gephebase-summary-title)</p> <p>Common Name</p> <p>mallard</p> <p>Synonyms</p> <p>Anas boschas; Anas domesticus; Anas platyrhynchos f. domestica; mallard; duck; mallard duck; mallard ducks; Anas platyrhynchos Linnaeus 1758; Anas platyrhynchos</p> <p>Rank</p> <p>species</p> <p>Lineage</p> <p>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</p> <p>Parent</p> <p>Anas (ducks) - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=8835)</p> <p>NCBI Taxonomy ID</p> <p>8839 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=8839)</p> <p>is Taxon B an Intraspecies?</p> <p>No</p>	<p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p> <p>is Taxon B an Intraspecies?</p>

GENOTYPIC CHANGE

<p>EDNRB2</p> <p>-</p> <p>-</p> <p>Belongs to the G-protein coupled receptor 1 family.</p> <p>GO:0004962 : endothelin receptor activity (https://www.ebi.ac.uk/QuickGO/term/GO:0004962)</p> <p>GO:0008217 : regulation of blood pressure (https://www.ebi.ac.uk/QuickGO/term/GO:0008217)</p> <p>GO:0042310 : vasoconstriction (https://www.ebi.ac.uk/QuickGO/term/GO:0042310)</p> <p>GO:0048484 : enteric nervous system development</p>	<p>Generic Gene Name</p> <p>Synonyms</p> <p>String</p> <p>Sequence Similarities</p> <p>GO - Molecular Function</p> <p>GO - Biological Process</p>	<p>W8VUK4 (http://www.uniprot.org/uniprot/W8VUK4)</p> <p>0</p>	<p>UniProtKB Gallus gallus</p> <p>GenebankID or UniProtKB</p>
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(<https://www.ebi.ac.uk/QuickGO/term/GO:0048484>)

GO - Cellular Component

GO:0016021 : integral component of membrane

(<https://www.ebi.ac.uk/QuickGO/term/GO:0016021>)

No (<https://www.gephebase.org/search-criteria?/and+Presumptive Null=^No^#gephebase-summary-title>)

Coding (<https://www.gephebase.org/search-criteria?/and+Molecular Type=^Coding^#gephebase-summary-title>)

SNP (<https://www.gephebase.org/search-criteria?/and+Aberration Type=^SNP^#gephebase-summary-title>)

Nonsynonymous

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Candidate Gene (<https://www.gephebase.org/search-criteria?/and+Experimental Evidence=^Candidate Gene^#gephebase-summary-title>)

Presumptive Null

Molecular Type

Aberration Type

SNP Coding Change

Molecular Details of the Mutation

Experimental Evidence

	Taxon A	Taxon B	Position
Codon	-	-	-
Amino-acid	Arg	His	332

Main Reference

Endothelin Receptor B2 (EDNRB2) Gene Is Associated with Spot Plumage Pattern in Domestic Ducks (*Anas platyrhynchos*). (2015) (<https://pubmed.ncbi.nlm.nih.gov/25955279>)

Authors

Li L; Li D; Liu L; Li S; Feng Y; Peng X; Gong Y

Abstract

Endothelin receptor B subtype 2 (EDNRB2) is a seven-transmembrane G-protein coupled receptor. In this study, we investigated EDNRB2 gene as a candidate gene for duck spot plumage pattern according to studies of chicken and Japanese quail. The entire coding region was cloned by the reverse transcription polymerase chain reaction (RT-PCR). Sequence analysis showed that duck EDNRB2 cDNA contained a 1311 bp open reading frame and encoded a putative protein of 436 amino acids residues. The transcript shared 89%-90% identity with the counterparts in other avian species. A phylogenetic tree based on amino acid sequences showed that duck EDNRB2 was evolutionary conserved in avian clade. The entire coding region of EDNRB2 were sequenced in 20 spot and 20 non-spot ducks, and 13 SNPs were identified. Two of them (c.940G>A and c.995G>A) were non-synonymous substitutions, and were genotyped in 647 ducks representing non-spot and spot phenotypes. The c.995G>A mutation, which results in the amino acid substitution of Arg332His, was completely associated with the spot phenotype: all 152 spot ducks were carriers of the AA genotype and the other 495 individuals with non-spot phenotype were carriers of GA or GG genotype, respectively. Segregation in 17 GAA—GG and 22 GAA—GA testing combinations confirmed this association since the segregation ratios and genotypes of the offspring were in agreement with the hypothesis. In order to investigate the underlying mechanism of the spot phenotype, MITF gene was used as cell type marker of melanocyte progenitor cells while TYR and TYRP1 gene were used as cell type markers of mature melanocytes. Transcripts of MITF, TYR and TYRP1 gene with expected size were identified in all pigmented skin tissues while PCR products were not obtained from non-pigmented skin tissues. It was inferred that melanocytes are absent in non-pigmented skin tissues of spot ducks.

Additional References

RELATED GEPHE

Related Genes

2 (MC1R, Microphthalmia-associated transcription factor) (<https://www.gephebase.org/search-criteria?/or+Taxon ID=^8839^/and+Trait=Coloration/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

1 (<https://www.gephebase.org/search-criteria?/or+Gene Gephebase=^Endothelin receptor B2^/and+Taxon ID=^8839^/or+Gene Gephebase=^Endothelin receptor B2^/and+Taxon ID=^8839^#gephebase-summary-title>)

EXTERNAL LINKS

COMMENTS

@Parallelism