

GEPHE SUMMARY

<p>Gephebase Gene</p> <p>Agouti (ASIP) (<a +agouti+(asip)^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+Agouti+(ASIP)^#gephebase-summary-title)</p> <p>Published</p>	<p>GP00002130</p> <p>Entry Status</p> <p>Santos</p>	<p>GepheID</p> <p>Main curator</p>
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PHENOTYPIC CHANGE

<p>Morphology (<a +morphology^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait+Category=">https://www.gephebase.org/search-criteria?/and+Trait+Category="+Morphology^#gephebase-summary-title)</p> <p>Coloration (skin) (<a +coloration+(skin)^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Coloration+(skin)^#gephebase-summary-title)</p> <p>black skin in black-bone chicken</p> <p>white skin in black-bone chicken</p> <p>Data not curated</p> <p>Domesticated (<a +domesticated^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=">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>	<p></p>
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	Taxon A	Taxon B	
	Latin Name	Latin Name	
Gallus gallus (<a +gallus+gallus^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Gallus+gallus^#gephebase-summary-title)	Gallus gallus	Gallus gallus	
chicken	Common Name	Common Name	
Gallus gallus domesticus; chicken; bantam; chickens	Synonyms	Synonyms	
species	Rank	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; Phasianinae; Gallus	Lineage	Lineage	
Gallus () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9030)	Parent	Parent	
9031 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9031)	NCBI Taxonomy ID	NCBI Taxonomy ID	
No	is Taxon A an Intraspecies?	is Taxon B an Intraspecies?	

GENOTYPIC CHANGE

<p>Asip</p> <p>As; ASP; A<y>; ASIP; a</p> <p>10090.ENSMUSP00000029123 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=10090.ENSMUSP00000029123)</p> <p>-</p> <p>GO:0031779 : melanocortin receptor binding (https://www.ebi.ac.uk/QuickGO/term/GO:0031779)</p> <p>GO:0031781 : type 3 melanocortin receptor binding (https://www.ebi.ac.uk/QuickGO/term/GO:0031781)</p> <p>GO:0031782 : type 4 melanocortin receptor binding (https://www.ebi.ac.uk/QuickGO/term/GO:0031782)</p>	<p>Generic Gene Name</p> <p>Synonyms</p> <p>String</p> <p>Sequence Similarities</p> <p>GO - Molecular Function</p>	<p>Q03288 (http://www.uniprot.org/uniprot/Q03288)</p> <p>UniProtKB Mus musculus</p> <p>GenebankID or UniProtKB</p> <p>0</p>
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- GO:0008343 : adult feeding behavior
(<https://www.ebi.ac.uk/QuickGO/term/GO:0008343>)
- GO:0006091 : generation of precursor metabolites and energy
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006091>)
- GO:0071514 : genetic imprinting (<https://www.ebi.ac.uk/QuickGO/term/GO:0071514>)
- GO:0009755 : hormone-mediated signaling pathway
(<https://www.ebi.ac.uk/QuickGO/term/GO:0009755>)
- GO:0042438 : melanin biosynthetic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0042438>)
- GO:0032438 : melanosome organization
(<https://www.ebi.ac.uk/QuickGO/term/GO:0032438>)
- GO:0032402 : melanosome transport
(<https://www.ebi.ac.uk/QuickGO/term/GO:0032402>)
- 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:0040030 : regulation of molecular function, epigenetic
(<https://www.ebi.ac.uk/QuickGO/term/GO:0040030>)

GO - Cellular Component

- GO:0005576 : extracellular region (<https://www.ebi.ac.uk/QuickGO/term/GO:0005576>)
- GO:0005623 : cell (<https://www.ebi.ac.uk/QuickGO/term/GO:0005623>)

<p>No (<a #gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Presumptive Null=" no"="">https://www.gephebase.org/search-criteria?/and+Presumptive Null="No" #gephebase-summary-title)</p> <p>Cis-regulatory (<a #gephebase-summary-title"="" cis-regulatory"="" href="https://www.gephebase.org/search-criteria?/and+Molecular Type=">https://www.gephebase.org/search-criteria?/and+Molecular Type="Cis-regulatory" #gephebase-summary-title)</p> <p>Unknown (<a #gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Aberration Type=" unknown"="">https://www.gephebase.org/search-criteria?/and+Aberration Type="Unknown" #gephebase-summary-title)</p> <p>-</p> <p>Candidate Gene (<a #gephebase-summary-title"="" candidate="" gene"="" href="https://www.gephebase.org/search-criteria?/and+Experimental Evidence=">https://www.gephebase.org/search-criteria?/and+Experimental Evidence="Candidate Gene" #gephebase-summary-title)</p> <p>Association of a novel SNP in the ASIP gene with skin color in black-bone chicken. (2019) (https://pubmed.ncbi.nlm.nih.gov/30883845)</p> <p>Yu S; Wang G; Liao J</p> <p>The agouti signaling protein gene (ASIP) is a widely studied pigmentation gene that plays an important role in melanin synthesis. To determine the variety of ASIP expression in the Muchuan Black-Bone chicken, we examined genetic variation in the ASIP promoter region. A single nucleotide polymorphism (c.-1826A>T) was found to be associated with the skin color (dorsal and subalar) of black-bone chicken. Individuals with TT and AT genotypes had higher ASIP mRNA levels in the skin than did those with the AA genotype ($P \hat{A} < \hat{A} 0.01$). In addition, individuals with the TT genotype had higher ASIP mRNA levels than did those with the AT genotype ($P \hat{A} < \hat{A} 0.05$). Expression of melanogenesis-related genes (melanocortin 1 receptor and tyrosinase genes) was higher in the skin of chickens with the TT and AT genotypes than in those with the AA genotype ($P \hat{A} < \hat{A} 0.01$). A luciferase assay showed that promoter activity was higher in chickens with the TT genotype than in those with the AA genotype. Putative transcription factor prediction suggested that the c.-1826A>T mutation might shift the promoter binding affinity with differential transcription factors. In summary, we identified a novel mutation in the ASIP gene promoter that may affect chicken skin color by altering ASIP transcriptional activity.</p> <p>Â© 2019 Stichting International Foundation for Animal Genetics.</p>	<p>Presumptive Null</p> <p>Molecular Type</p> <p>Aberration Type</p> <p>Molecular Details of the Mutation</p> <p>Experimental Evidence</p> <p>Main Reference</p> <p>Authors</p> <p>Abstract</p> <p>Additional References</p>
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RELATED GEPHE

- 14 (ABCA1, CDKN2A, CYP19A1, EDN3, Endothelin receptor B2, GRAMD3, MC1R, Melanophilin (MLPH), PMEL17, SLC45A2=MATP, SLC01B3, SOX10, tyrosinase (TYR), tyrosinase-related protein 1 (TYRP1)) ([https://www.gephebase.org/search-criteria?/or+Taxon ID="9031" /and+Trait=Coloration/and+groupHaplotypes=true#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Taxon ID=))
- No matches found.

EXTERNAL LINKS

COMMENTS

@parallelism

