

GEPHE SUMMARY

<p>PDSS2 (<a href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase+PDSS2+Gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase+PDSS2+Gephebase-summary-title</a>)</p> <p>Published</p>	<p>Gephebase Gene</p> <p>Entry Status</p>	<p>GP00002254</p> <p>Martin</p>	<p>GepheID</p> <p>Main curator</p>
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PHENOTYPIC CHANGE

<p>Morphology (<a href="https://www.gephebase.org/search-criteria?/and+Trait+Category+Morphology+Gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait+Category+Morphology+Gephebase-summary-title</a>)</p> <p>Feather (<a href="https://www.gephebase.org/search-criteria?/and+Trait+Feather+Gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait+Feather+Gephebase-summary-title</a>)</p> <p>WT Feathering</p> <p>Silky/Silkie feathering (recessive)</p> <p>Taxon A</p> <p>Domesticated (<a href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status+Domesticated+Gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status+Domesticated+Gephebase-summary-title</a>)</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>Taxon A</p> <p>Taxon B</p>
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Taxon A	Latin Name	Taxon B	Latin Name
Gallus gallus ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms+Gallus+gallus+Gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms+Gallus+gallus+Gephebase-summary-title</a> )	Gallus gallus ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms+Gallus+gallus+Gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms+Gallus+gallus+Gephebase-summary-title</a> )	Gallus gallus ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms+Gallus+gallus+Gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms+Gallus+gallus+Gephebase-summary-title</a> )	Gallus gallus ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms+Gallus+gallus+Gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms+Gallus+gallus+Gephebase-summary-title</a> )
chicken	Common Name	chicken	Common Name
Gallus gallus domesticus; chicken; bantam; chickens	Synonyms	Gallus gallus domesticus; chicken; bantam; chickens	Synonyms
species	Rank	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; Phasianinae; Gallus	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; Galliformes; Phasianidae; Phasianinae; Gallus	Lineage
Gallus () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9030">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9030</a> )	Parent	Gallus () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9030">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9030</a> )	Parent
9031 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9031">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9031</a> )	NCBI Taxonomy ID	9031 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9031">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9031</a> )	NCBI Taxonomy ID
No	is Taxon A an Intraspecies?	No	is Taxon B an Intraspecies?

GENOTYPIC CHANGE

<p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p> <p>No (<a href="https://www.gephebase.org/search-criteria?/and+Presumptive+Null+No+Gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Presumptive+Null+No+Gephebase-summary-title</a>)</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>GO - Cellular Component</p>	<p>Q86YH6NULL (<a href="http://www.uniprot.org/uniprot/Q86YH6NULL">http://www.uniprot.org/uniprot/Q86YH6NULL</a>)</p> <p>()</p> <p>Presumptive Null</p> <p>Molecular Type</p>	<p>UniProtKB</p> <p>GenebankID or UniProtKB</p>
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Cis-regulatory (<https://www.gephebase.org/search-criteria?/and+Molecular+Type=Cis-regulatory#gephebase-summary-title>)

Aberration Type

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

Molecular Details of the Mutation

Only variant explaining homozygous phenotype is c.-103C>G and shown to reduce PDSS2 promoter activity in vitro

Experimental Evidence

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

Main Reference

A cis-regulatory mutation of PDSS2 causes silky-feather in chickens. (2014) (<https://pubmed.ncbi.nlm.nih.gov/25166907>)

Authors

Feng C; Gao Y; Dorshorst B; Song C; Gu X; Li Q; Li J; Liu T; Rubin CJ; Zhao Y; Wang Y; Fei J; Li H; Chen K; Qu H; Shu D; Ashwell C; Da Y; Andersson L; Hu X; Li N

Abstract

Silky-feather has been selected and fixed in some breeds due to its unique appearance. This phenotype is caused by a single recessive gene (hookless, h). Here we map the silky-feather locus to chromosome 3 by linkage analysis and subsequently fine-map it to an 18.9 kb interval using the identical by descent (IBD) method. Further analysis reveals that a C to G transversion located upstream of the prenyl (decaprenyl) diphosphate synthase, subunit 2 (PDSS2) gene is causing silky-feather. All silky-feather birds are homozygous for the G allele. The silky-feather mutation significantly decreases the expression of PDSS2 during feather development in vivo. Consistent with the regulatory effect, the C to G transversion is shown to remarkably reduce PDSS2 promoter activity in vitro. We report a new example of feather structure variation associated with a spontaneous mutation and provide new insight into the PDSS2 function.

Additional References

## RELATED GEPHE

Related Genes

17 (ABCA1, CDKN2A, CYP19A1, Endothelin receptor B2, MC1R, PMEL17, SLC45A2=MATP, SOX10, tyrosinase (TYR), tyrosinase-related protein 1 (TYRP1), FGF20, GDF7, HOXC8 - uncertain, KRT6A, KRT75L4, Hoxb8, Prolactin receptor) (<https://www.gephebase.org/search-criteria?/or+TaxonID=9031#/and+Trait=Feather/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

No matches found.

## EXTERNAL LINKS

## COMMENTS

<https://omia.org/OMIA000913/9031/>