

SGK3 (https://www.gephebase.org/search-criteria?/and+GeneGephebase=~SGK3~#gephebase-summary-title)	Gephebase Gene	GP00002262	GepheID
Published	Entry Status	Martin	Main curator

	Trait Category				
Morphology (https://www.gephebase.org/search-criteria?/and+TraitCategory=%5C^Morphology%5C^#gephebase-summary-title)		Trait			
Hair (hypotrichosis) (https://www.gephebase.org/search-criteria?/and+Trait=%5C^Hair(hypotrichosis)%5C^#gephebase-summary-title)					
	Trait State in Taxon A				
WT coat		Trait State in Taxon B			
Hairless dog breed - American hairless					
	Ancestral State				
Taxon A		Taxonomic Status			
Domesticated (https://www.gephebase.org/search-criteria?/and+TaxonomicStatus=%5C^Domesticated%5C^#gephebase-summary-title)					
	Taxon A			Taxon B	
	Latin Name			Latin Name	
Canis lupus familiaris (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=%5C^Canis lupus familiaris%5C^#gephebase-summary-title)		Canis lupus familiaris (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=%5C^Canis lupus familiaris%5C^#gephebase-summary-title)			
	Common Name			Common Name	
dog		dog			
	Synonyms			Synonyms	
Canis canis; Canis domesticus; Canis familiaris; dog; dogs; Canis familiaris Linnaeus, 1758; Canis lupus familiaris Linnaeus, 1758		Canis canis; Canis domesticus; Canis familiaris; dog; dogs; Canis familiaris Linnaeus, 1758; Canis lupus familiaris Linnaeus, 1758			
	Rank			Rank	
subspecies		subspecies			
	Lineage			Lineage	
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrastodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Laurasiatheria; Carnivora; Caniformia; Canidae; Canis; Canis lupus		cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrastodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Laurasiatheria; Carnivora; Caniformia; Canidae; Canis; Canis lupus			
	Parent			Parent	
Canis lupus (gray wolf) - (Rank: species) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9612)		Canis lupus (gray wolf) - (Rank: species) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9612)			
	NCBI Taxonomy ID			NCBI Taxonomy ID	
9615 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9615)		9615 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9615)			
	is Taxon A an Intraspecies?			is Taxon B an Intraspecies?	
No		No			

Generic Gene Name	UniProtKB Mus musculus
Sgk3	Q9ERE3 (http://www.uniprot.org/uniprot/Q9ERE3)
Synonyms	GenebankID or UniProtKB
fy; fz; Cisk; 2510015P22Rik; A330005P07Rik; Sgkl	0
String	
10090.ENSMUSP00000126861 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=10090.ENSMUSP00000126861)	
Sequence Similarities	
Belongs to the protein kinase superfamily. AGC Ser/Thr protein kinase family.	
GO - Molecular Function	
GO:0005524 : ATP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005524)	
GO:0004674 : protein serine/threonine kinase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0004674)	
GO:0035091 : phosphatidylinositol binding (https://www.ebi.ac.uk/QuickGO/term/GO:0035091)	
GO:0015459 : potassium channel regulator activity	

(<https://www.ebi.ac.uk/QuickGO/term/GO:0015459>)

GO - Biological Process

GO:0018105 : peptidyl-serine phosphorylation
(<https://www.ebi.ac.uk/QuickGO/term/GO:0018105>)
GO:0035556 : intracellular signal transduction
(<https://www.ebi.ac.uk/QuickGO/term/GO:0035556>)

GO:2001240 : negative regulation of extrinsic apoptotic signaling pathway in absence of ligand (<https://www.ebi.ac.uk/QuickGO/term/GO:2001240>)

GO - Cellular Component

GO:0005654 : nucleoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005654>)
GO:0005769 : early endosome (<https://www.ebi.ac.uk/QuickGO/term/GO:0005769>)
GO:0031410 : cytoplasmic vesicle (<https://www.ebi.ac.uk/QuickGO/term/GO:0031410>)
GO:0043231 : intracellular membrane-bounded organelle
(<https://www.ebi.ac.uk/QuickGO/term/GO:0043231>)
GO:0055037 : recycling endosome (<https://www.ebi.ac.uk/QuickGO/term/GO:0055037>)

Presumptive Null

Yes ([https://www.gephebase.org/search-criteria?/and+Presumptive Null=~Yes~ #gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Presumptive+Null=~Yes~#gephebase-summary-title))

Molecular Type

Coding ([https://www.gephebase.org/search-criteria?/and+Molecular Type=~Coding~ #gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Molecular+Type=~Coding~#gephebase-summary-title))

Aberration Type

Deletion ([https://www.gephebase.org/search-criteria?/and+Aberration Type=~Deletion~ #gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Aberration+Type=~Deletion~#gephebase-summary-title))

Deletion Size

1-9 bp

Molecular Details of the Mutation

Val96GlyfsTer50 deletion that removes four bases (TTAG) within exon 4 ; creating a new protein sequence for 50 amino acids and a premature stop at amino acid 157

Experimental Evidence

Candidate Gene ([https://www.gephebase.org/search-criteria?/and+Experimental Evidence=~Candidate Gene~ #gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Experimental+Evidence=~Candidate+Gene~#gephebase-summary-title))

Main Reference

The bald and the beautiful: hairlessness in domestic dog breeds. (2017) (<https://pubmed.ncbi.nlm.nih.gov/27994129>)

Authors

Parker HG; Harris A; Dreger DL; Davis BW; Ostrander EA

Abstract

An extraordinary amount of genomic variation is contained within the chromosomes of domestic dogs, manifesting as dramatic differences in morphology, behaviour and disease susceptibility. Morphology, in particular, has been a topic of enormous interest as biologists struggle to understand the small window of dog domestication from wolves, and the division of dogs into pure breeding, closed populations termed breeds. Many traits related to morphology, including body size, leg length and skull shape, have been under selection as part of the standard descriptions for the nearly 400 breeds recognized worldwide. Just as important, however, are the minor traits that have undergone selection by fanciers and breeders to define dogs of a particular appearance, such as tail length, ear position, back arch and variation in fur (pelage) growth patterns. In this paper, we both review and present new data for traits associated with pelage including fur length, curl, growth, shedding and even the presence or absence of fur. Finally, we report the discovery of a new gene associated with the absence of coat in the American Hairless Terrier breed. This article is part of the themed issue ‘Evo-devo in the genomics era, and the origins of morphological diversity’.

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Additional References

RELATED GEPHE

Related Genes

4 (FGF5, R-spondin-2 (RSPO2), FOXI3, KRT71) ([https://www.gephebase.org/search-criteria?/or+Taxon ID=~9615~/and+Trait=Hair/and+groupHaplotypes=true#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Taxon+ID=~9615~/and+Trait=Hair/and+groupHaplotypes=true#gephebase-summary-title))

Related Haplotypes

1 ([https://www.gephebase.org/search-criteria?/or+Gene Gephebase=~SGK3~/and+Taxon ID=~9615~/or+Gene Gephebase=~SGK3~/and+Taxon ID=~9615~ #gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Gene+Gephebase=~SGK3~/and+Taxon+ID=~9615~/or+Gene+Gephebase=~SGK3~/and+Taxon+ID=~9615~#gephebase-summary-title))

EXTERNAL LINKS

COMMENTS

@AllelicSeries <https://omia.org/OMIA001279/9615/>