

# GEPHE SUMMARY

	Gephebase Gene	GephelD
Spint1 ( <a href="https://www.gephebase.org/search-criteria/?and+Gene+Gephebase=%Spint1">#gephebase-summary-title</a> )	GP00002365	
	Entry Status	Main curator
Draft	Santos	

## PHENOTYPIC CHANGE

	Trait Category		
Morphology ( <a href="https://www.gephebase.org/search-criteria/?and+Trait+Category=%Morphology">#gephebase-summary-title</a> )	Trait		
	Trait State in Taxon A		
Coloration ( <a href="https://www.gephebase.org/search-criteria/?and+Trait=%Coloration">#gephebase-summary-title</a> )	Trait State in Taxon B		
Spotted leopard pattern	Lemon frost morph; increased white body coloration and brightened yellow and orange areas	Ancestral State	
Taxon A	Taxonomic Status		
Domesticated ( <a href="https://www.gephebase.org/search-criteria/?and+Taxonomic+Status=%Domesticated">#gephebase-summary-title</a> )	Domesticated		
Taxon A	Latin Name	Taxon B	Latin Name
Eublepharis macularius ( <a href="https://www.gephebase.org/search-criteria/?and+Taxon+and+Synonyms=%Eublepharis+macularius">#gephebase-summary-title</a> )			
	Common Name		Common Name
-	-	-	-
	Synonyms		Synonyms
Cyrtodactylus macularius; Leopard gecko; Cyrtodactylus macularius Blyth, 1854; Eublepharis macularius Blyth, 1854; ZSI 6224; ZSI:6224; Eublepharis macularis; Eublepharus macularius	Cyrtodactylus macularius; Leopard gecko; Cyrtodactylus macularius Blyth, 1854; Eublepharis macularius Blyth, 1854; ZSI 6224; ZSI:6224; Eublepharis macularis; Eublepharus macularius	Cyrtodactylus macularius; Leopard gecko; Cyrtodactylus macularius Blyth, 1854; Eublepharis macularius Blyth, 1854; ZSI 6224; ZSI:6224; Eublepharis macularis; Eublepharus macularius	Cyrtodactylus macularius; Leopard gecko; Cyrtodactylus macularius Blyth, 1854; Eublepharis macularius Blyth, 1854; ZSI 6224; ZSI:6224; Eublepharis macularis; Eublepharus macularius
	Rank		Rank
species	Rank	species	Rank
	Lineage		Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Sauropsida; Sauria; Lepidosauria; Squamata; Bifurcata; Gekkota; Eublepharidae; Eublepharinae; Eublepharis	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Sauropsida; Sauria; Lepidosauria; Squamata; Bifurcata; Gekkota; Eublepharidae; Eublepharinae; Eublepharis	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Sauropsida; Sauria; Lepidosauria; Squamata; Bifurcata; Gekkota; Eublepharidae; Eublepharinae; Eublepharis	cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Sauropsida; Sauria; Lepidosauria; Squamata; Bifurcata; Gekkota; Eublepharidae; Eublepharinae; Eublepharis
	Parent		Parent
Eublepharis () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 96736">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 96736</a> )	Eublepharis () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 96736">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 96736</a> )	Eublepharis () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 481883">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 481883</a> )	Eublepharis () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 481883">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 481883</a> )
	NCBI Taxonomy ID		NCBI Taxonomy ID
481883 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 481883">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 481883</a> )			
	is Taxon A an Infraspecies?		is Taxon B an Infraspecies?
No	No	No	No

## GENOTYPIC CHANGE

	Generic Gene Name	UniProtKB
-	Q9R097NULL ( <a href="http://www.uniprot.org/uniprot/Q9R097NULL">http://www.uniprot.org/uniprot/Q9R097NULL</a> )	
	Synonyms	GenebankID or UniProtKB
-	0	
	String	
-		
	Sequence Similarities	
-		
	GO - Molecular Function	
-		
	GO - Biological Process	
-		
	GO - Cellular Component	
-		
		Presumptive Null
No ( <a href="https://www.gephebase.org/search-criteria/?and+Presumptive Null=%No">#gephebase-summary-title</a> )		
		Molecular Type

Unknown ([https://www.gephebase.org/search-criteria?/and+Molecular Type=%5EUnknown%23gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Molecular%20Type=%5EUnknown%23gephebase-summary-title))

Aberration Type

Unknown ([https://www.gephebase.org/search-criteria?/and+Aberration Type=%5EUnknown%23gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Aberration%20Type=%5EUnknown%23gephebase-summary-title))

Molecular Details of the Mutation

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Experimental Evidence

Linkage Mapping ([https://www.gephebase.org/search-criteria?/and+Experimental Evidence=%5ELinkage Mapping%23gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Experimental%20Evidence=%5ELinkage%20Mapping%23gephebase-summary-title))

Main Reference

Genetics of white color and iridophoroma in "Lemon Frost" leopard geckos. (2021) (<https://pubmed.ncbi.nlm.nih.gov/34166378/>)

Authors

Guo L; Bloom J; Sykes S; Huang E; Kashif Z; Pham E; Ho K; Alcaraz A; Xiao XG; Duarte-Vogel S; Kruglyak L

Abstract

The squamates (lizards and snakes) are close relatives of birds and mammals, with more than 10,000 described species that display extensive variation in a number of important biological traits, including coloration, venom production, and regeneration. Due to a lack of genomic tools, few genetic studies in squamates have been carried out. The leopard gecko, *Eublepharis macularius*, is a popular companion animal, and displays a variety of coloration patterns. We took advantage of a large breeding colony and used linkage analysis, synteny, and homozygosity mapping to investigate a spontaneous semi-dominant mutation, "Lemon Frost", that produces white coloration and causes skin tumors (iridophoroma). We localized the mutation to a single locus which contains a strong candidate gene, *SPINT1*, a tumor suppressor implicated in human skin cutaneous melanoma (SKCM) and over-proliferation of epithelial cells in mice and zebrafish. Our work establishes the leopard gecko as a tractable genetic system and suggests that a tumor suppressor in melanocytes in humans can also suppress tumor development in iridophores in lizards.

Additional References

## RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

No matches found.

## EXTERNAL LINKS

## COMMENTS