

GEPHE SUMMARY

Gephebase Gene
opsin - (SWS1)

Entry Status
Published

GepheID
GP00000758

Main curator
Martin

PHENOTYPIC CHANGE

Trait Category
Physiology

Trait
Color vision (loss of violet-range sensitivity)

Trait State in Taxon A
Sciurus carolinensis; diurnal

Trait State in Taxon B
Glaucomys sabrinus; nocturnal

Ancestral State
Taxon A

Taxonomic Status
Intergeneric or Higher

Taxon A

Latin Name
Sciurus carolinensis

Common Name
gray squirrel

Synonyms
gray squirrel; eastern gray squirrel; Sciurus carolinensis Gmelin, 1788; Sciurus carolinensus

Rank
species

Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Euarchontoglires; Glires; Rodentia; Sciuromorpha; Sciuridae; Sciurinae; Sciurini; Sciurus

Parent
Sciurus () - (Rank: genus)

NCBI Taxonomy ID
30640

is Taxon A an Intraspecies?
No

Taxon B

Latin Name
Sciurus carolinensis

Common Name
gray squirrel

Synonyms
gray squirrel; eastern gray squirrel; Sciurus carolinensis Gmelin, 1788; Sciurus carolinensus

Rank
species

Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Euarchontoglires; Glires; Rodentia; Sciuromorpha; Sciuridae; Sciurinae; Sciurini; Sciurus

Parent
Sciurus () - (Rank: genus)

NCBI Taxonomy ID
30640

is Taxon B an Intraspecies?
No

GENOTYPIC CHANGE

Generic Gene Name
OPN1SW

Synonyms
BCP; BOP; CBT

String
9606.ENSP00000249389

Sequence Similarities
Belongs to the G-protein coupled receptor 1 family. Opsin subfamily.

GO - Molecular Function
GO:0038023 : signaling receptor activity
GO:0008020 : G protein-coupled photoreceptor activity

GO - Biological Process
GO:0007165 : signal transduction
GO:0007186 : G protein-coupled receptor signaling pathway
GO:0001523 : retinoid metabolic process
GO:0018298 : protein-chromophore linkage
GO:0007601 : visual perception
GO:0071482 : cellular response to light stimulus
GO:0007602 : phototransduction

UniProtKB Homo sapiens
P03999

GenebankID or UniProtKB
ABC26410

GO - Cellular Component

GO:0005887 : integral component of plasma membrane

GO:0001750 : photoreceptor outer segment

GO:0097381 : photoreceptor disc membrane

Presumptive Null

Yes

Molecular Type

Coding

Aberration Type

Deletion

Deletion Size

1-9 bp

Molecular Details of the Mutation

6bp deletion (residues 77-78) + 1bp frameshift deletion

Experimental Evidence

Candidate Gene

Main Reference

Shortwave visual sensitivity in tree and flying squirrels reflects changes in lifestyle. (2006)

Authors

Carvalho Ldos S; Cowing JA; Wilkie SE; Bowmaker JK; Hunt DM

Abstract

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Additional References

RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

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EXTERNAL LINKS

COMMENTS