GEPHE SUMMARY

Gephebase Gene
plg-1 (https://www.gephebase.org/search-criteria?/and+Gene Gephebase=^plg-1^#gephebase-summary-title)

GepheID
GP00000898

Entry Status
Published

Main curator
Martin

PHENOTYPIC CHANGE

Trait Category
Physiology (https://www.gephebase.org/search-criteria?/and+Trait Category=^Physiology^#gephebase-summary-title)

Trait
Copulatory plug (https://www.gephebase.org/search-criteria?/and+Trait=^Copulatory plug^#gephebase-summary-title)

Trait State in Taxon A
C. elegans - copulatory plug

Trait State in Taxon B
C. elegans - no copulatory plug

Ancestral State
Taxon A

Taxonomic Status
Intraspecific (https://www.gephebase.org/search-criteria?/and+Taxonomic Status=^Intraspecific^#gephebase-summary-title)

Taxon A

Latin Name
Caenorhabditis elegans (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Caenorhabditis elegans^#gephebase-summary-title)

Common Name
-

Synonyms
roundworm; Rhabditis elegans; Caenorhabditis elegans (Maupas, 1900); Rhabditis elegans Maupas, 1900

Rank
species

Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Nematoda; Chromadorea; Rhabditida; Rhabditina; Rhabditomorpha; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis

Parent
Caenorhabditis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 6237)

NCBI Taxonomy ID
6239 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 6239)

is Taxon A an Infraspecies?
Yes

Taxon A Description
C. elegans - several wild isolates

Taxon B

Latin Name
Caenorhabditis elegans (https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms=^Caenorhabditis elegans^#gephebase-summary-title)

Common Name
-

Synonyms
roundworm; Rhabditis elegans; Caenorhabditis elegans (Maupas, 1900); Rhabditis elegans Maupas, 1900

Rank
species

Lineage
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Nematoda; Chromadorea; Rhabditida; Rhabditina; Rhabditomorpha; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis

Parent
Caenorhabditis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 6237)

NCBI Taxonomy ID
6239 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id= 6239)

is Taxon B an Infraspecies?
Yes

Taxon B Description
C. elegans - N2

GENOTYPIC CHANGE

Generic Gene Name
-

Synonyms
-

String
-

Sequence Similarities
-

GO - Molecular Function
-

GO - Biological Process
-

GO - Cellular Component
-

UniProtKB
()

GenebankID or UniProtKB
()

Presumptive Null
Yes (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)

Aberration Type

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

Insertion Size

1-10 kb

Molecular Details of the Mutation

insertion of transposable element in an exon

Experimental Evidence

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

Main Reference

Molecular basis of the copulatory plug polymorphism in Caenorhabditis elegans. (2008) (https://pubmed.ncbi.nlm.nih.gov/18633349)

Authors

Palopoli MF; Rockman MV; TinMaung A; Ramsay C; Curwen S; Aduna A; Laurita J; Kruglyak L

Abstract

Heritable variation is the raw material for evolutionary change, and understanding its genetic basis is one of the central problems in modern biology. We investigated the genetic basis of a classic phenotypic dimorphism in the nematode Caenorhabditis elegans. Males from many natural isolates deposit a copulatory plug after mating, whereas males from other natural isolates? including the standard wild-type strain (N2 Bristol) that is used in most research laboratories?do not deposit plugs. The copulatory plug is a gelatinous mass that covers the hermaphrodite vulva, and its deposition decreases the mating success of subsequent males. We show that the plugging polymorphism results from the insertion of a retrotransposon into an exon of a novel mucin-like gene, plg-1, whose product is a major structural component of the copulatory plug. The gene is expressed in a subset of secretory cells of the male somatic gonad, and its loss has no evident effects beyond the loss of male mate-guarding. Although C. elegans descends from an obligate-outcrossing, male?female ancestor, it occurs primarily as self-fertilizing hermaphrodites. The reduced selection on male?male competition associated with the origin of hermaphroditism may have permitted the global spread of a loss-of-function mutation with restricted pleiotropy.

Additional References

RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS

@TE; WormBase ID: WBGene00004041