

GEPHE SUMMARY

<p>Ianosterol synthase (https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=~Ianosterol+synthase~#gephebase-summary-title)</p> <p>Published</p>	<p>Gephebase Gene</p> <p>Entry Status</p>	<p>GP00001950</p> <p>Courtier</p>	<p>GepheID</p> <p>Main curator</p>
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PHENOTYPIC CHANGE

<p>Physiology (https://www.gephebase.org/search-criteria?/and+Trait+Category=~Physiology~#gephebase-summary-title)</p> <p>Cholesterol metabolism (cholesterol biosynthesis) (https://www.gephebase.org/search-criteria?/and+Trait=~Cholesterol+metabolism+(cholesterol+biosynthesis)~#gephebase-summary-title)</p> <p>able to synthesise cholesterol de novo</p> <p>unable to synthesise cholesterol de novo</p> <p>Taxon A</p> <p>Intergeneric or Higher (https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=~Intergeneric+or+Higher~#gephebase-summary-title)</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>Latin Name</p> <p>Homo sapiens (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Homo+sapiens~#gephebase-summary-title)</p> <p>Common Name</p> <p>human</p> <p>Synonyms</p> <p>human; man; Homo sapiens Linnaeus, 1758; Home sapiens; Homo sapiens; Homo sapeins; Homo sapien; Homo sapience; Homo sapiense; Homo sapients; Homo sapines; Homo spaiens; Homo spiens; Humo sapiens</p> <p>Rank</p> <p>species</p> <p>Lineage</p> <p>cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Euarchontoglires; Primates; Haplorrhini; Simiiformes; Catarrhini; Hominoidea; Hominidae; Homininae; Homo</p> <p>Parent</p> <p>Homo () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9605)</p> <p>9606 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9606)</p> <p>No</p> <p>is Taxon A an Infrappecies?</p>	<p>Taxon B</p> <p>Latin Name</p> <p>Caenorhabditis elegans (https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=~Caenorhabditis+elegans~#gephebase-summary-title)</p> <p>Common Name</p> <p>-</p> <p>Synonyms</p> <p>roundworm; Rhabditis elegans; Caenorhabditis elegans (Maupas, 1900); Rhabditis elegans Maupas, 1900</p> <p>Rank</p> <p>species</p> <p>Lineage</p> <p>cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Protostomia; Ecdysozoa; Nematoda; Chromadorea; Rhabditida; Rhabditina; Rhabditomorpha; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis</p> <p>Parent</p> <p>Caenorhabditis () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=6237)</p> <p>6239 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=6239)</p> <p>No</p> <p>is Taxon B an Infrappecies?</p>
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GENOTYPIC CHANGE

<p>LSS</p> <p>OSC; HYPT14; CTRCT44</p> <p>9606.ENSPO0000380837 (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=9606.ENSPO0000380837)</p> <p>Belongs to the terpene cyclase/mutase family.</p> <p>GO:0000250 : lanosterol synthase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0000250)</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>P48449 (http://www.uniprot.org/uniprot/P48449)</p> <p>()</p>	<p>UniProtKB Homo sapiens</p> <p>GenebankID or UniProtKB</p>
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GO:0006695 : cholesterol biosynthetic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006695>)
GO:0006694 : steroid biosynthetic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0006694>)
GO:0045540 : regulation of cholesterol biosynthetic process
(<https://www.ebi.ac.uk/QuickGO/term/GO:0045540>)
GO:0031647 : regulation of protein stability
(<https://www.ebi.ac.uk/QuickGO/term/GO:0031647>)

GO - Cellular Component

GO:0016020 : membrane (<https://www.ebi.ac.uk/QuickGO/term/GO:0016020>)
GO:0005789 : endoplasmic reticulum membrane
(<https://www.ebi.ac.uk/QuickGO/term/GO:0005789>)
GO:0005811 : lipid droplet (<https://www.ebi.ac.uk/QuickGO/term/GO:0005811>)

Presumptive Null

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

Molecular Type

Gene Loss (<https://www.gephebase.org/search-criteria?/and+Molecular+Type=~Gene+Loss~#gephebase-summary-title>)

Aberration Type

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

Deletion Size

unknown

Molecular Details of the Mutation

gene absent in the genome

Experimental Evidence

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

Main Reference

Why do worms need cholesterol?. (2003) (<https://pubmed.ncbi.nlm.nih.gov/12894170>)

Authors

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Abstract

Cholesterol is a structural component of animal membranes that influences fluidity, permeability and formation of lipid microdomains. It is also a precursor to signalling molecules, including mammalian steroid hormones and insect ecdysones. The nematode *Caenorhabditis elegans* requires too little cholesterol for it to have a major role in membrane structure. Instead, its most probable signalling functions are to control molting and induce a specialized non-feeding larval stage, although no cholesterol-derived signalling molecule has yet been identified for these or any other functions.

Additional References

Preservation of genes involved in sterol metabolism in cholesterol auxotrophs: facts and hypotheses. (2008) (<https://pubmed.ncbi.nlm.nih.gov/18682733>)

RELATED GEPHE

Related Genes

3 (lanosterol c14 demethylase, squalene synthase, sterol C5 desaturase) (<https://www.gephebase.org/search-criteria?/or+Taxon+ID=~9606~/and+Trait=Cholesterol+metabolism/or+Taxon+ID=~6239~/and+Trait=Cholesterol+metabolism/and+groupHaplotypes=true#gephebase-summary-title>)

Related Haplotypes

1 (<https://www.gephebase.org/search-criteria?/or+Gene+Gephebase=~lanosterol+synthase~/and+Taxon+ID=~9606~/or+Gene+Gephebase=~lanosterol+synthase~/and+Taxon+ID=~6239~#gephebase-summary-title>)

EXTERNAL LINKS

COMMENTS

@ParallelEvolution in insects