

GEPHE SUMMARY

beta-tubulin (<a +beta-tubulin+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene Gephebase="beta-tubulin"#gephebase-summary-title)	Gephebase Gene	GP00001825	GepheID
Published	Entry Status	Courtier	Main curator

PHENOTYPIC CHANGE

Physiology (<a +physiology+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait+Category=">https://www.gephebase.org/search-criteria?/and+Trait Category="Physiology"#gephebase-summary-title)	Trait Category
Xenobiotic resistance (benzimidazole) (<a +xenobiotic+resistance+(benzimidazole)+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="Xenobiotic resistance (benzimidazole)"#gephebase-summary-title)	Trait
sensitive	Trait State in Taxon A
resistant	Trait State in Taxon B
Taxon A	Ancestral State
Intraspecific (<a +intraspecific+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=">https://www.gephebase.org/search-criteria?/and+Taxonomic Status="Intraspecific"#gephebase-summary-title)	Taxonomic Status

Taxon A	Latin Name	Taxon B	Latin Name
Oculimacula acuformis (<a +oculimacula+acuformis+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Oculimacula acuformis"#gephebase-summary-title)	Oculimacula acuformis (<a +oculimacula+acuformis+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Oculimacula acuformis"#gephebase-summary-title)	Oculimacula acuformis (<a +oculimacula+acuformis+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Oculimacula acuformis"#gephebase-summary-title)	Oculimacula acuformis (<a +oculimacula+acuformis+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon and Synonyms="Oculimacula acuformis"#gephebase-summary-title)
-	Common Name	-	Common Name
	Synonyms		Synonyms
Helgardia acuformis; Mollisia acuformis; Pseudocercospora herpotrichoides var. acuformis; Ramulispora acuformis; Ramulispora herpotrichoides var. acuformis; Tapesia acuformis; Tapesia yallundae var. acuformis; CB S 495.80; CB:S:495.80	Helgardia acuformis; Mollisia acuformis; Pseudocercospora herpotrichoides var. acuformis; Ramulispora acuformis; Ramulispora herpotrichoides var. acuformis; Tapesia acuformis; Tapesia yallundae var. acuformis; CB S 495.80; CB:S:495.80	Helgardia acuformis; Mollisia acuformis; Pseudocercospora herpotrichoides var. acuformis; Ramulispora acuformis; Ramulispora herpotrichoides var. acuformis; Tapesia acuformis; Tapesia yallundae var. acuformis; CB S 495.80; CB:S:495.80	Helgardia acuformis; Mollisia acuformis; Pseudocercospora herpotrichoides var. acuformis; Ramulispora acuformis; Ramulispora herpotrichoides var. acuformis; Tapesia acuformis; Tapesia yallundae var. acuformis; CB S 495.80; CB:S:495.80
species	Rank	species	Rank
cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; sordariomyceta; Leotiomycetes; Helotiales; Ploettnerulaceae; Oculimacula	Lineage	cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; sordariomyceta; Leotiomycetes; Helotiales; Ploettnerulaceae; Oculimacula	Lineage
Oculimacula () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=228665)	Parent	Oculimacula () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=228665)	Parent
110162 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=110162)	NCBI Taxonomy ID	110162 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=110162)	NCBI Taxonomy ID
No	is Taxon A an Intraspecies?	No	is Taxon B an Intraspecies?

GENOTYPIC CHANGE

TUB2	Generic Gene Name	UniProtKB Saccharomyces cerevisiae (strain ATCC 204508 / S288c) P02557 (http://www.uniprot.org/uniprot/P02557)
ARM10; SHE8; YFL037W	Synonyms	GenebankID or UniProtKB
4932.YFL037W (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=4932.YFL037W)	String	()
Belongs to the tubulin family.	Sequence Similarities	
GO:0005525 : GTP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005525)	GO - Molecular Function	
GO:0003924 : GTPase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0003924)		
GO:0005200 : structural constituent of cytoskeleton (https://www.ebi.ac.uk/QuickGO/term/GO:0005200)		
GO:0007010 : cytoskeleton organization (https://www.ebi.ac.uk/QuickGO/term/GO:0007010)	GO - Biological Process	

GO:0000278 : mitotic cell cycle (<https://www.ebi.ac.uk/QuickGO/term/GO:0000278>)
 GO:0000070 : mitotic sister chromatid segregation (<https://www.ebi.ac.uk/QuickGO/term/GO:0000070>)
 GO:0007017 : microtubule-based process (<https://www.ebi.ac.uk/QuickGO/term/GO:0007017>)
 GO:0046677 : response to antibiotic (<https://www.ebi.ac.uk/QuickGO/term/GO:0046677>)
 GO:0000226 : microtubule cytoskeleton organization (<https://www.ebi.ac.uk/QuickGO/term/GO:0000226>)
 GO:0045143 : homologous chromosome segregation (<https://www.ebi.ac.uk/QuickGO/term/GO:0045143>)
 GO:0030473 : nuclear migration along microtubule (<https://www.ebi.ac.uk/QuickGO/term/GO:0030473>)
 GO:0090316 : positive regulation of intracellular protein transport (<https://www.ebi.ac.uk/QuickGO/term/GO:0090316>)

GO - Cellular Component

GO:0005737 : cytoplasm (<https://www.ebi.ac.uk/QuickGO/term/GO:0005737>)
 GO:0005874 : microtubule (<https://www.ebi.ac.uk/QuickGO/term/GO:0005874>)
 GO:0005816 : spindle pole body (<https://www.ebi.ac.uk/QuickGO/term/GO:0005816>)
 GO:0005881 : cytoplasmic microtubule (<https://www.ebi.ac.uk/QuickGO/term/GO:0005881>)
 GO:0005828 : kinetochore microtubule (<https://www.ebi.ac.uk/QuickGO/term/GO:0005828>)
 GO:0005880 : nuclear microtubule (<https://www.ebi.ac.uk/QuickGO/term/GO:0005880>)
 GO:0045298 : tubulin complex (<https://www.ebi.ac.uk/QuickGO/term/GO:0045298>)

Presumptive Null

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

Molecular Type

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

Aberration Type

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

SNP Coding Change

Nonsynonymous

Molecular Details of the Mutation

E198K

Experimental Evidence

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

	Taxon A	Taxon B	Position
Codon	GAG	AAG	-
Amino-acid	Glu	Lys	198

Main Reference

Mutations of the β -tubulin gene associated with different phenotypes of benzimidazole resistance in the cereal eyespot fungi *Tapesia yallundae* and *Tapesia acuformis*. (1999)
<https://pubmed.ncbi.nlm.nih.gov/00000000.000008>

Authors

Albertini Catherine; Gredt Michel; Leroux Pierre

Abstract

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Additional References

Sensitivity of *Neurospora crassa* to benzimidazoles and N-phenylcarbamates: effect of amino acid substitutions at position 198 in β -tubulin. (1992)
<https://pubmed.ncbi.nlm.nih.gov/00000000.000009>

RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

3 (<https://www.gephebase.org/search-criteria?/or+Gene Gephebase=^beta-tubulin^/and+Taxon ID=^110162^/or+Gene Gephebase=^beta-tubulin^/and+Taxon ID=^110162^#gephebase-summary-title>)

EXTERNAL LINKS

COMMENTS

