

## 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</a> )	Gephebase Gene	GP00001829	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</a> )	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</a> )	Trait		
sensitive	Trait State in Taxon A		
resistant (low resistance)	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</a> )	Taxonomic Status		
	Taxon A		Taxon B
Oculimacula yallundae ( <a +oculimacula+yallundae+"#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+yallundae+"#gephebase-summary-title</a> )	Latin Name	Oculimacula yallundae ( <a +oculimacula+yallundae+"#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+yallundae+"#gephebase-summary-title</a> )	Latin Name
-	Common Name	-	Common Name
	Synonyms		Synonyms
Helgardia herpotrichoides; Mollisia yallundae; Pseudocercospora herpotrichoides; Ramulispora herpotrichoides; Tapesia yallundae; Oculimacula yallundae (Wallwork & Spooner) Crous & W. Gams, 2003; CBS 110665; CBS H-23003; CBS:H:23003; Oculimacula yallunda		Helgardia herpotrichoides; Mollisia yallundae; Pseudocercospora herpotrichoides; Ramulispora herpotrichoides; Tapesia yallundae; Oculimacula yallundae (Wallwork & Spooner) Crous & W. Gams, 2003; CBS 110665; CBS H-23003; CBS:H:23003; Oculimacula yallunda	
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) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=228665">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=228665</a> )	Parent	Oculimacula () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=228665">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=228665</a> )	Parent
86028 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=86028">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=86028</a> )	NCBI Taxonomy ID	86028 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=86028">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=86028</a> )	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 ( <a href="http://www.uniprot.org/uniprot/P02557">http://www.uniprot.org/uniprot/P02557</a> )	GenebankID or UniProtKB
ARM10; SHE8; YFL037W	Synonyms	0	
4932.YFL037W ( <a href="http://string-db.org/newstring_cgi/show_network_section.pl?identifier=4932.YFL037W">http://string-db.org/newstring_cgi/show_network_section.pl?identifier=4932.YFL037W</a> )	String		
Belongs to the tubulin family.	Sequence Similarities		
GO:000525 : GTP binding ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:000525">https://www.ebi.ac.uk/QuickGO/term/GO:000525</a> )	GO - Molecular Function		
GO:0003924 : GTPase activity ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0003924">https://www.ebi.ac.uk/QuickGO/term/GO:0003924</a> )			
GO:0005200 : structural constituent of cytoskeleton ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0005200">https://www.ebi.ac.uk/QuickGO/term/GO:0005200</a> )			
GO:0007010 : cytoskeleton organization	GO - Biological Process		

(<https://www.ebi.ac.uk/QuickGO/term/GO:0007010>)  
 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

L240F

Experimental Evidence

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

	Taxon A	Taxon B	Position
Codon	CTC	TTC	-
Amino-acid	Leu	Phe	240

Main Reference

Mutations of the  $\beta$ -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/00000000.0000008>)

Authors

Albertini Catherine; Gredt Michel; Leroux Pierre

Abstract

-

Additional References

Sensitivity of *Neurospora crassa* to benzimidazoles and N-phenylcarbamates: effect of amino acid substitutions at position 198 in  $\beta$ -tubulin . (1992 )  
 (<https://pubmed.ncbi.nlm.nih.gov/00000000.000010>)

## RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

4 (<https://www.gephebase.org/search-criteria?/or+Gene+Gephebase=~beta-tubulin^/and+Taxon+ID=~86028^/or+Gene+Gephebase=~beta-tubulin^/and+Taxon+ID=~86028^#gephebase-summary-title>)

## EXTERNAL LINKS

## COMMENTS

Mutation also present in a *S. cerevisiae* resistant line