

## GEPHE SUMMARY

		Gephebase Gene		GepheID
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> )			GP00001793	
Published	Entry Status		Courtier	Main curator

## PHENOTYPIC CHANGE

		Trait Category		
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		
Xenobiotic resistance (benomyl) ( <a +xenobiotic+resistance+(benomyl)+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Xenobiotic+resistance+(benomyl)+"#gephebase-summary-title</a> )				
		Trait State in Taxon A		
sensitive				
		Trait State in Taxon B		
resistant				
		Ancestral State		
Taxon A				
		Taxonomic Status		
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> )				
Taxon A			Taxon B	
		Latin Name		Latin Name
Penicillium viridicatum ( <a +penicillium+viridicatum+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Penicillium+viridicatum+"#gephebase-summary-title</a> )			Penicillium viridicatum ( <a +penicillium+viridicatum+"#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Penicillium+viridicatum+"#gephebase-summary-title</a> )	
		Common Name		Common Name
-			-	
		Synonyms		Synonyms
Penicillium aurantiogriseum var. viridicatum; Penicillium aurantiogriseum var. viridicatum (Westling) Frisvad & Filt. 1990; Penicillium viridicatum Westling 1911; CBS:390.48; CBS:390.48; FRR 963; FRR:963			Penicillium aurantiogriseum var. viridicatum; Penicillium aurantiogriseum var. viridicatum (Westling) Frisvad & Filt. 1990; Penicillium viridicatum Westling 1911; CBS 390.48; CBS:390.48; FRR 963; FRR:963	
		Rank		Rank
species			species	
		Lineage		Lineage
cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; Eurotiomycetes; Eurotiomycetidae; Eurotiales; Aspergillaceae; Penicillium			cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; Eurotiomycetes; Eurotiomycetidae; Eurotiales; Aspergillaceae; Penicillium	
		Parent		Parent
Penicillium () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5073">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5073</a> )			Penicillium () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5073">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5073</a> )	
		NCBI Taxonomy ID		NCBI Taxonomy ID
60134 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=60134">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=60134</a> )			60134 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=60134">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=60134</a> )	
		is Taxon A an Intraspecies?		is Taxon B an Intraspecies?
No			No	

## GENOTYPIC CHANGE

		Generic Gene Name	UniProtKB Saccharomyces cerevisiae (strain ATCC 204508 / S288c)	
TUB2			P02557 ( <a href="http://www.uniprot.org/uniprot/P02557">http://www.uniprot.org/uniprot/P02557</a> )	
		Synonyms		GenebankID or UniProtKB
ARM10; SHE8; YFL037W			()	
		String		
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> )				
		Sequence Similarities		
Belongs to the tubulin family.				
		GO - Molecular Function		
GO:0005525 : GTP binding ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0005525">https://www.ebi.ac.uk/QuickGO/term/GO:0005525</a> )				
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 - Biological Process		
GO:0007010 : cytoskeleton organization ( <a href="https://www.ebi.ac.uk/QuickGO/term/GO:0007010">https://www.ebi.ac.uk/QuickGO/term/GO:0007010</a> )				

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

No (<https://www.gephebase.org/search-criteria?/and+Presumptive Null=^No^#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

Glu198Lys

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

Characterization of mutations in the beta-tubulin gene of benomyl-resistant field strains of *Venturia inaequalis* and other plant pathogenic fungi . (<https://pubmed.ncbi.nlm.nih.gov/00000000.000004>)

Authors

Koenraadt Harrie; Somerville Shauna C; Jones AL

Abstract

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Additional References

Mechanism of action of N-phenylcarbamates in benzimidazole-resistant *Neurospora* strains . (1990 ) (<https://pubmed.ncbi.nlm.nih.gov/00000000.000005>)

RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

No matches found.

EXTERNAL LINKS

COMMENTS

The amino acid change Glu198Gly was shown to confer resistance in *Neurospora crassa*

