

## GEPHE SUMMARY

		Gephebase Gene	GepheID
beta-tubulin ( <a +beta-tubulin+"#gepbase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase="+beta-tubulin+"#gepbase-summary-title</a> )		GP00001794	
Published	Entry Status	Courtier	Main curator

## PHENOTYPIC CHANGE

		Trait Category	
Physiology ( <a +physiology+"#gepbase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait+Category=">https://www.gephebase.org/search-criteria?/and+Trait+Category="+Physiology+"#gepbase-summary-title</a> )			
		Trait	
Xenobiotic resistance (benomyl) ( <a +xenobiotic+resistance+(benomyl)+"#gepbase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Trait=">https://www.gephebase.org/search-criteria?/and+Trait="+Xenobiotic+resistance+(benomyl)+"#gepbase-summary-title</a> )			
		Trait State in Taxon A	
sensitive			
		Trait State in Taxon B	
resistant			
		Ancestral State	
Taxon A			
		Taxonomic Status	
Intraspecific ( <a +intraspecific+"#gepbase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status="+Intraspecific+"#gepbase-summary-title</a> )			
Taxon A		Taxon B	
		Latin Name	Latin Name
Clarireedia homoeocarpa ( <a +clarireedia+homoeocarpa+"#gepbase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Clarireedia+homoeocarpa+"#gepbase-summary-title</a> )		Clarireedia homoeocarpa ( <a +clarireedia+homoeocarpa+"#gepbase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Clarireedia+homoeocarpa+"#gepbase-summary-title</a> )	
		Common Name	Common Name
-		-	
		Synonyms	Synonyms
Rhizoctonia monteithiana; Rutstroemia festucae; Rutstroemia festucae J.F. Powell, 1998, nom. inval.; Sclerotinia homeocarpa; Sclerotinia homoeocarpa; Clarireedia homoeocarpa (F.T. Benn.) L.A. Beirn, B.B. Clarke, C. Salgado, & J.A. Crouch, 2018; Rhizoctonia monteithiana F.T. Benn., 1935, nom. inval.; Sclerotinia homoeocarpa F.T. Benn., 1937; BPI 892697; BPI:892697; Leotiomyces sp. LAB-2013		Rhizoctonia monteithiana; Rutstroemia festucae; Rutstroemia festucae J.F. Powell, 1998, nom. inval.; Sclerotinia homeocarpa; Sclerotinia homoeocarpa; Clarireedia homoeocarpa (F.T. Benn.) L.A. Beirn, B.B. Clarke, C. Salgado, & J.A. Crouch, 2018; Rhizoctonia monteithiana F.T. Benn., 1935, nom. inval.; Sclerotinia homoeocarpa F.T. Benn., 1937; BPI 892697; BPI:892697; Leotiomyces sp. LAB-2013	
		Rank	Rank
species		species	
		Lineage	Lineage
cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyces; sordariomyceta; Leotiomyces; Helotiales; Rutstroemiaceae; Clarireedia		cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyces; sordariomyceta; Leotiomyces; Helotiales; Rutstroemiaceae; Clarireedia	
		Parent	Parent
Clarireedia () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=2211661">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=2211661</a> )		Clarireedia () - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=2211661">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=2211661</a> )	
		NCBI Taxonomy ID	NCBI Taxonomy ID
1436886 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=1436886">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=1436886</a> )		1436886 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=1436886">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=1436886</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		0	
		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  
 (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

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

Glu1198Lys

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*

