

GEPHE SUMMARY

<p>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)</p> <p>Published</p>	<p>Gephebase Gene</p> <p>Entry Status</p>	<p>GP00001791</p> <p>Courtier</p>	<p>GepheID</p> <p>Main curator</p>
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PHENOTYPIC CHANGE

<p>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)</p> <p>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)</p> <p>sensitive</p> <p>resistant</p> <p>Taxon A</p> <p>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)</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>Penicillium aurantiogriseum (<a +penicillium+aurantiogriseum+"#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+aurantiogriseum+"#gephebase-summary-title)</p> <p>-</p> <p>ATCC 48920; ATCC:48920; FRR 971; FRR:971; IBT 14016; IBT:14016; IMI 195050; IMI:195050; MUCL 29090; MUCL:29090; NRRL 971; NRRL:971</p> <p>species</p> <p>cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; Eurotiomycetes; Eurotiomycetidae; Eurotiales; Aspergillaceae; Penicillium</p> <p>Penicillium () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5073)</p> <p>36655 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=36655)</p> <p>is Taxon A an Intraspecies?</p> <p>No</p>	<p>Taxon B</p> <p>Latin Name</p> <p>Common Name</p> <p>Synonyms</p> <p>Rank</p> <p>Lineage</p> <p>Parent</p> <p>NCBI Taxonomy ID</p> <p>is Taxon B an Intraspecies?</p>	<p>Penicillium aurantiogriseum (<a +penicillium+aurantiogriseum+"#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+aurantiogriseum+"#gephebase-summary-title)</p> <p>-</p> <p>ATCC 48920; ATCC:48920; FRR 971; FRR:971; IBT 14016; IBT:14016; IMI 195050; IMI:195050; MUCL 29090; MUCL:29090; NRRL 971; NRRL:971</p> <p>species</p> <p>cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; Eurotiomycetes; Eurotiomycetidae; Eurotiales; Aspergillaceae; Penicillium</p> <p>Penicillium () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5073)</p> <p>36655 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=36655)</p> <p>is Taxon B an Intraspecies?</p> <p>No</p>
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GENOTYPIC CHANGE

<p>TUB2</p> <p>ARM10; SHE8; YFL037W</p> <p>4932.YFL037W (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=4932.YFL037W)</p> <p>Belongs to the tubulin family.</p> <p>GO:0005525 : GTP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005525)</p> <p>GO:0003924 : GTPase activity (https://www.ebi.ac.uk/QuickGO/term/GO:0003924)</p> <p>GO:0005200 : structural constituent of cytoskeleton (https://www.ebi.ac.uk/QuickGO/term/GO:0005200)</p> <p>GO:0007010 : cytoskeleton organization (https://www.ebi.ac.uk/QuickGO/term/GO:0007010)</p> <p>GO:0000278 : mitotic cell cycle (https://www.ebi.ac.uk/QuickGO/term/GO:0000278)</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>UniProtKB Saccharomyces cerevisiae (strain ATCC 204508 / S288c)</p> <p>P02557 (http://www.uniprot.org/uniprot/P02557)</p> <p>0</p> <p>GenebankID or UniProtKB</p>
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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^#gepbase-summary-title)

Molecular Type

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

Aberration Type

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

SNP Coding Change

Nonsynonymous

Molecular Details of the Mutation

Phe200Tyr

Experimental Evidence

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

	Taxon A	Taxon B	Position
Codon	TTC	TAC	-
Amino-acid	Phe	Tyr	200

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

Extreme allelic heterogeneity at a *Caenorhabditis elegans* beta-tubulin locus explains natural resistance to benzimidazoles. (2018) (https://pubmed.ncbi.nlm.nih.gov/30372484)

RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

1 (https://www.gephebase.org/search-criteria?/or+Gene Gephebase=^beta-tubulin^/and+Taxon ID=^36655^/or+Gene Gephebase=^beta-tubulin^/and+Taxon ID=^36655^#gepbase-summary-title)

EXTERNAL LINKS

COMMENTS

Effect of the amino acid change tested in *C. elegans*

