

## 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</a>)</p> <p>Published</p>	<p>Gephebase Gene</p> <p>Entry Status</p>	<p>GP00001796</p> <p>Courtier</p>	<p>GepheID</p> <p>Main curator</p>
--	---	-----------------------------------	------------------------------------

## 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</a>)</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</a>)</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</a>)</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>Latin Name</p> <p>Venturia inaequalis (<a +venturia+inaequalis^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Venturia+inaequalis^#gephebase-summary-title</a>)</p> <p>Common Name</p> <p>-</p> <p>Synonyms</p> <p>Venturia inaequalis</p> <p>Rank</p> <p>species</p> <p>Lineage</p> <p>cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; dothideomyceta; Dothideomycetes; Dothideomycetes incertae sedis; Venturiales; Venturiaceae; Venturia</p> <p>Parent</p> <p>Venturia () - (Rank: genus) (<a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5024">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5024</a>)</p> <p>NCBI Taxonomy ID</p> <p>5025 (<a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5025">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5025</a>)</p> <p>is Taxon A an Intraspecies?</p> <p>No</p>	<p>Taxon B</p> <p>Latin Name</p> <p>Venturia inaequalis (<a +venturia+inaequalis^#gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms="+Venturia+inaequalis^#gephebase-summary-title</a>)</p> <p>Common Name</p> <p>-</p> <p>Synonyms</p> <p>Venturia inaequalis</p> <p>Rank</p> <p>species</p> <p>Lineage</p> <p>cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; dothideomyceta; Dothideomycetes; Dothideomycetes incertae sedis; Venturiales; Venturiaceae; Venturia</p> <p>Parent</p> <p>Venturia () - (Rank: genus) (<a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5024">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5024</a>)</p> <p>NCBI Taxonomy ID</p> <p>5025 (<a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5025">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5025</a>)</p> <p>is Taxon B an Intraspecies?</p> <p>No</p>
--	---	---	---

## GENOTYPIC CHANGE

<p>TUB2</p> <p>ARM10; SHE8; YFL037W</p> <p>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>)</p> <p>Belongs to the tubulin family.</p> <p>GO - Molecular Function</p> <p>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>)</p> <p>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>)</p> <p>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>)</p> <p>GO - Biological Process</p> <p>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>)</p> <p>GO:0000278 : mitotic cell cycle (<a href="https://www.ebi.ac.uk/QuickGO/term/GO:0000278">https://www.ebi.ac.uk/QuickGO/term/GO:0000278</a>)</p> <p>GO:0000070 : mitotic sister chromatid segregation</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 (<a href="http://www.uniprot.org/uniprot/P02557">http://www.uniprot.org/uniprot/P02557</a>)</p> <p>GenebankID or UniProtKB</p> <p>O</p>
--	---	--

(<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](https://www.gephebase.org/search-criteria?/and+Presumptive Null=))

Molecular Type

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

Aberration Type

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

SNP Coding Change

Nonsynonymous

Molecular Details of the Mutation

Glu1198Ala

Experimental Evidence

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

	Taxon A	Taxon B	Position
Codon	GAG	GCG	-
Amino-acid	Glu	Ala	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

-

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

2 ([https://www.gephebase.org/search-criteria?/or+Gene Gephebase="beta-tubulin"/and+Taxon ID="5025"/or+Gene Gephebase="beta-tubulin"/and+Taxon ID="5025"#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Gene Gephebase=))

EXTERNAL LINKS

COMMENTS

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

