

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>GP00001795</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)</p> | | <p>Trait Category</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>Trait</p> | | |
| <p>sensitive</p> | | <p>Trait State in Taxon A</p> | | |
| <p>resistant</p> | | <p>Trait State in Taxon B</p> | | |
| <p>Taxon A</p> | | <p>Ancestral State</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>Taxonomic Status</p> | | |
| <p>Taxon A</p> | | <p>Latin Name</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)</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)</p> | | |
| <p>-</p> | | <p>Common Name</p> | <p>-</p> | <p>Common Name</p> |
| <p>Venturia inaequalis</p> | | <p>Synonyms</p> | | |
| <p>species</p> | | <p>Rank</p> | <p>Venturia inaequalis</p> | <p>Rank</p> |
| <p>cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; dothideomyceta; Dothideomycetes; Dothideomycetes incertae sedis; Venturiales; Venturiaceae; Venturia</p> | | <p>Lineage</p> | <p>species</p> | <p>Lineage</p> |
| <p>Venturia () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5024)</p> | | <p>Parent</p> | <p>cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; dothideomyceta; Dothideomycetes; Dothideomycetes incertae sedis; Venturiales; Venturiaceae; Venturia</p> | |
| <p>5025 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5025)</p> | | <p>NCBI Taxonomy ID</p> | <p>Venturia () - (Rank: genus) (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5024)</p> | <p>Parent</p> |
| <p>No</p> | | <p>is Taxon A an Intraspecies?</p> | <p>5025 (https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=5025)</p> | <p>NCBI Taxonomy ID</p> |
| <p>No</p> | | <p>is Taxon B an Intraspecies?</p> | <p>No</p> | |

GENOTYPIC CHANGE

| | | | | |
|---|--------------------------|--|--------------------------------|--|
| <p>TUB2</p> | <p>Generic Gene Name</p> | <p>UniProtKB Saccharomyces cerevisiae (strain ATCC 204508 / S288c)</p> | | |
| <p>ARM10; SHE8; YFL037W</p> | <p>Synonyms</p> | <p>P02557 (http://www.uniprot.org/uniprot/P02557)</p> | | |
| <p>4932.YFL037W (http://string-db.org/newstring.cgi/show_network_section.pl?identifier=4932.YFL037W)</p> | <p>String</p> | <p>()</p> | | |
| <p>Belongs to the tubulin family.</p> | | <p>Sequence Similarities</p> | <p>GenebankID or UniProtKB</p> | |
| <p>GO:0005525 : GTP binding (https://www.ebi.ac.uk/QuickGO/term/GO:0005525)</p> | | <p>GO - Molecular Function</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 - Biological Process</p> | | |
| <p>GO:000278 : mitotic cell cycle (https://www.ebi.ac.uk/QuickGO/term/GO:000278)</p> | | | | |
| <p>GO:000070 : mitotic sister chromatid segregation</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

Glu1198Lys

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 | 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

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*

