

GEPHE SUMMARY

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

Gephebase Gene GP00001789

Published

Entry Status Courtier

GepheID Main curator

PHENOTYPIC CHANGE

Physiology ([https://www.gephebase.org/search-criteria?/and+Trait+Category="+Physiology+"#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Trait+Category=))

Trait Category

Xenobiotic resistance (benomyl) ([https://www.gephebase.org/search-criteria?/and+Trait="+Xenobiotic+resistance+\(benomyl\)+"#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Trait=))

Trait

sensitive *Venturia pyrina*

Trait State in Taxon A

resistant *Venturia pyrina*

Trait State in Taxon B

Taxon A

Ancestral State

Intraspecific ([https://www.gephebase.org/search-criteria?/and+Taxonomic+Status="+Intraspecific+"#gephebase-summary-title](https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=))

Taxonomic Status

Taxon A	Taxon B
-	-
Latin Name	Latin Name
-	-
Common Name	Common Name
-	-
Synonyms	Synonyms
-	-
Rank	Rank
-	-
Lineage	Lineage
-	-
Parent	Parent
-	-
NCBI Taxonomy ID	NCBI Taxonomy ID
415593	415593
(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=415593)	(https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=415593)
is Taxon A an Infrasppecies?	is Taxon B an Infrasppecies?
No	No

GENOTYPIC CHANGE

TUB2

Generic Gene Name UniProtKB *Saccharomyces cerevisiae* (strain ATCC 204508 / S288c)

ARM10; SHE8; YFL037W

Synonyms P02557 (<http://www.uniprot.org/uniprot/P02557>)

String ()

4932.YFL037W

(http://string-db.org/newstring_cgi/show_network_section.pl?identifier=4932.YFL037W)

Sequence Similarities

Belongs to the tubulin family.

GO - Molecular Function

GO:0005525 : GTP binding (<https://www.ebi.ac.uk/QuickGO/term/GO:0005525>)

GO:0003924 : GTPase activity (<https://www.ebi.ac.uk/QuickGO/term/GO:0003924>)

GO:0005200 : structural constituent of cytoskeleton (<https://www.ebi.ac.uk/QuickGO/term/GO:0005200>)

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](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

Phe200Tyr

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	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="+415593^/or+Gene Gephebase="+beta-tubulin^/and+Taxon ID="+415593^#gephebase-summary-title](https://www.gephebase.org/search-criteria?/or+Gene+Gephebase=))

EXTERNAL LINKS

COMMENTS

Effect of the amino acid change tested in *C. elegans* @& Taxon name not included - needs to fetch it again

