

GEPHE SUMMARY

Gephebase Gene

beta-tubulin

Entry Status

Published

GepheID

GP00001799

Main curator

Courtier

PHENOTYPIC CHANGE

Trait Category

Physiology

Trait

Xenobiotic resistance (benomyl)

Trait State in Taxon A

sensitive

Trait State in Taxon B

resistant

Ancestral State

Taxon A

Taxonomic Status

Intraspecific

Taxon A

Latin Name

Penicillium puberulum

Common Name

-

Synonyms

-

Rank

species

Lineage

cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; Eurotiomycetes; Eurotiomycetidae; Eurotiales; Aspergillaceae; Penicillium

Parent

Penicillium () - (Rank: genus)

NCBI Taxonomy ID

1343408

is Taxon A an Intraspecies?

No

Taxon B

Latin Name

Penicillium puberulum

Common Name

-

Synonyms

-

Rank

species

Lineage

cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; Eurotiomycetes; Eurotiomycetidae; Eurotiales; Aspergillaceae; Penicillium

Parent

Penicillium () - (Rank: genus)

NCBI Taxonomy ID

1343408

is Taxon B an Intraspecies?

No

GENOTYPIC CHANGE

Generic Gene Name

TUB2

Synonyms

ARM10; SHE8; YFL037W

String

4932.YFL037W

Sequence Similarities

Belongs to the tubulin family.

GO - Molecular Function

GO:0005525 : GTP binding

GO:0003924 : GTPase activity

GO:0005200 : structural constituent of cytoskeleton

GO - Biological Process

GO:0007010 : cytoskeleton organization

GO:0000278 : mitotic cell cycle

GO:0000070 : mitotic sister chromatid segregation

GO:0007017 : microtubule-based process

GO:0046677 : response to antibiotic

GO:0000226 : microtubule cytoskeleton organization

GO:0045143 : homologous chromosome segregation

UniProtKB Saccharomyces cerevisiae (strain ATCC 204508 / S288c)

P02557

GenebankID or UniProtKB

GO:0030473 : nuclear migration along microtubule
GO:0090316 : positive regulation of intracellular protein transport

GO - Cellular Component

GO:0005737 : cytoplasm
GO:0005874 : microtubule
GO:0005816 : spindle pole body
GO:0005881 : cytoplasmic microtubule
GO:0005828 : kinetochore microtubule
GO:0005880 : nuclear microtubule
GO:0045298 : tubulin complex

Presumptive Null

No

Molecular Type

Coding

Aberration Type

SNP

SNP Coding Change

Nonsynonymous

Molecular Details of the Mutation

Glu1198Lys

Experimental Evidence

Candidate Gene

	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. .

Authors

Koenraadt Harrie; Somerville Shauna C; Jones AL

Abstract

-

Additional References

Mechanism of action of N-phenylcarbamates in benzimidazole-resistant *Neurospora* strains . (1990)

RELATED GEPHE

Related Genes

No matches found.

Related Haplotypes

1

EXTERNAL LINKS

COMMENTS

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