

## GEPHE SUMMARY

### Gephebase Gene

beta-tubulin

### Entry Status

Published

### GepheID

GP00001827

### Main curator

Courtier

## PHENOTYPIC CHANGE

### Trait Category

Physiology

### Trait

Xenobiotic resistance (benzimidazole)

### Trait State in Taxon A

sensitive

### Trait State in Taxon B

resistant

### Ancestral State

Taxon A

### Taxonomic Status

Intraspecific

### Taxon A

#### Latin Name

*Oculimacula yallundae*

#### Common Name

-

#### Synonyms

Helgardia herpotrichoides; Mollisia yallundae; Pseudocercospora herpotrichoides; Ramulispora herpotrichoides; Tapesia yallundae; Oculimacula yallundae (Wallwork & Spooner) Crous & W. Gams, 2003; CBS 110665; CBS H-23003; CBS:110665; CBS:H:23003; Oculimacula yallunda

#### Rank

species

#### Lineage

cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; sordariomyceta; Leotiomycetes; Helotiales; Ploettnerulaceae; Oculimacula

#### Parent

Oculimacula () - (Rank: genus)

#### NCBI Taxonomy ID

86028

#### is Taxon A an Intraspecies?

No

### Taxon B

#### Latin Name

*Oculimacula yallundae*

#### Common Name

-

#### Synonyms

Helgardia herpotrichoides; Mollisia yallundae; Pseudocercospora herpotrichoides; Ramulispora herpotrichoides; Tapesia yallundae; Oculimacula yallundae (Wallwork & Spooner) Crous & W. Gams, 2003; CBS 110665; CBS H-23003; CBS:110665; CBS:H:23003; Oculimacula yallunda

#### Rank

species

#### Lineage

cellular organisms; Eukaryota; Opisthokonta; Fungi; Dikarya; Ascomycota; saccharomyceta; Pezizomycotina; leotiomyceta; sordariomyceta; Leotiomycetes; Helotiales; Ploettnerulaceae; Oculimacula

#### Parent

Oculimacula () - (Rank: genus)

#### NCBI Taxonomy ID

86028

#### 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

### UniProtKB Saccharomyces cerevisiae (strain ATCC 204508 / S288c)

P02557

### GenebankID or UniProtKB

GO:0046677 : response to antibiotic  
GO:0000226 : microtubule cytoskeleton organization  
GO:0045143 : homologous chromosome segregation  
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**

Unknown

**Molecular Type**

Coding

**Aberration Type**

SNP

**SNP Coding Change**

Nonsynonymous

**Molecular Details of the Mutation**

E198G

**Experimental Evidence**

Candidate Gene

|            | Taxon A | Taxon B | Position |
|------------|---------|---------|----------|
| Codon      | GAG     | GGG     | -        |
| Amino-acid | Glu     | Gly     | 198      |

**Main Reference**

Mutations of the  $\beta$ -tubulin gene associated with different phenotypes of benzimidazole resistance in the cereal eyespot fungi *Tapesia yallundae* and *Tapesia acuformis*. (1999)

**Authors**

Albertini Catherine; Gredt Michel; Leroux Pierre

**Abstract**

-

**Additional References**

Sensitivity of *Neurospora crassa* to benzimidazoles and N-phenylcarbamates: effect of amino acid substitutions at position 198 in  $\beta$ -tubulin. (1992)

**RELATED GEPHE**

**Related Genes**

No matches found.

**Related Haplotypes**

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**EXTERNAL LINKS**

**COMMENTS**

