Macromolecular Complex and Chemical Pages at SGD

ICYGMB 2019, Gothenburg, Sweden
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What is a macromolecular complex?

From NIH Image Gallery
Collaboration

Complete complexome of 589 curated complexes
Finding curated complexes

https://www.yeastgenome.org/search?q=&is_quick=true  
https://www.yeastgenome.org/locus/S000003054
Macromolecular complex pages

Complex: Mitotic checkpoint complex, MAD1-MAD2-BUB1-BUB3 subcomplex

Curated by: SGD
Complex Ac: CPX-3212
Systematic Name: MAD1-MAD2-BUB1-BUB3
Alliance: MA-MA-MA-MA

This complex forms during mitosis as a result of the activation of the spindle checkpoint. BUB1 and BUB3 are associated through the cell cycle; however, the addition of MAD1 is cell cycle dependent. The formation of a stable complex requires the functions of MAD2, BUB3, and MPS1. In addition, a highly conserved Arg-Leu-lys motif at 655-657 of MAD1 is required for the formation of a complete complex.

Complex Diagram

Subunits

<table>
<thead>
<tr>
<th>Subunit</th>
<th>Description</th>
<th>Stoichiometry</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUB1</td>
<td>Protein kinase involved in the cell cycle checkpoint into anaphase</td>
<td>1</td>
</tr>
<tr>
<td>BUB3</td>
<td>Kinetochore checkpoint WD40 repeat protein</td>
<td>1</td>
</tr>
<tr>
<td>MAD1</td>
<td>Coiled-coil protein involved in spindle-assembly checkpoint</td>
<td>1</td>
</tr>
<tr>
<td>MAD2</td>
<td>Component of the spindle-assembly checkpoint complex</td>
<td>1</td>
</tr>
</tbody>
</table>

Gene Ontology

Biological Process: mitotic spindle assembly checkpoint
Cellular Component: kinetochore

References

https://www.yeastgenome.org/complex/CPX-3212
Chemical Pages
Chemical: methyl methanesulfonate

Chemical Name: methyl methanesulfonate
Chebi ID: CHEBI:25255

Phenotype Annotations

Gene | Phenotype | Experiment Type | Mutant Information | Strain Background | Chemical | Details | Reference
---|---|---|---|---|---|---|---
CHK1 | apoptosis decreased | heterozygous diploid | null | S288C | 0.001% methyl methanesulfonate | Details: decreased apoptosis in response to MMS treatment | de Clare M and Oliver SG (2019) PMID:31337907
MAD1 | apoptosis decreased | heterozygous diploid | null | S288C | 0.001% methyl methanesulfonate | Details: decreased apoptosis in response to MMS treatment | de Clare M and Oliver SG (2013) PMID:2313900

https://www.yeastgenome.org/chemical/CHEBI:25255
Phenotype to chemical connection

https://www.yeastgenome.org/locus/S000000478/phenotype

https://www.yeastgenome.org/phenotype/decreased_apoptosis

https://www.yeastgenome.org/reference/S000153073
Gene ontology annotations to chemicals

https://www.yeastgenome.org/locus/S000006402/go

https://www.yeastgenome.org/go/GO:0042910

https://www.yeastgenome.org/reference/S000040717
Thank you!

SGD Website
yeastgenome.org

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YouTube Channel
youtube.com/SaccharomycesGenomeDatabase

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