Integration of Macromolecular Complex Data into the \textit{Saccharomyces} Genome Database

International Biocuration Conference 2019
Cambridge, UK

What is a macromolecular complex?

From NIH Image Gallery
Data schema

* Indexed/Searchable
Connecting Datatypes

### MAD1 / YGL086W Overview

- **Standard Name:** MAD1
- **Systematic Name:** YGL086W
- **SGD ID:** SGD:000002054
- **Feature Type:** ORF, Verified
- **Description:** Cdk1-cyclin t7 protein, involved in spindle-assembly checkpoint; required for inhibition of karyopherin-importin alpha-2p upon spindle assembly checkpoint arrest; phosphorylated by Mps1 upon checkpoint activation which leads to inhibition of anaphase promoting complex activity; forms a complex with Mad2p; gene dosage imbalance between MAD1 and MAD2 leads to chromosome instability.
- **Name Description:** Mitotic Arrest-Deficient
- **Comparative Info:** Integrated model organism details available at the Alliance of Genome Resources website

### Complex

- Mitotic checkpoint complex, MAD1-MAD2-BUB1-BUB3 subcomplex
- Mitotic spindle assembly checkpoint Mad1-Mad2 complex

### Phenotype

- Non-essential gene; null mutant has chromosome instability defect and shows sensitivity to benomyl and reduced spore germination; in large scale studies null mutant is resistant to caffeine, camptothecin, hydroxyurea and MMS, but sensitive to DMSO

### References

- SGD Paper DOI: [link](https://doi.org/10.1016/j.ycs.2013.11.023)
- SGD Paper DOI: [link](https://doi.org/10.1016/j.cub.2012.10.020)
- SGD Paper DOI: [link](https://doi.org/10.1016/S0960-9822(00)00433-0)
Future work
# Acknowledgements

## Saccharomyces Genome Database

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## EMBL-EBI

- Sandra Orchard
- Birgit Meldal – poster #29
- Livia Perfetto

## Other Cherry lab posters:

- #162
- #172
- #127
- #135

- Former: Gail Binkley, Maria Costanzo, Janos Demeter

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