

YEAST MOLECULAR BIOLOGY LABORATORY

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RESEARCH

RESEARCH INTERESTS

Our group is interested in several topics about the biochemistry, the molecular biology and the genomics of the yeast *Saccharomyces cerevisiae*, specifically those that are related to cell signalling through processes of phospho-dephosphorylation. For this purpose, we investigate issues like the ion homeostasis, the response to various stresses or the cell cycle regulation.

STRATEGIC OBJECTIVES

The main objective is to obtain an overview on the yeast response to perturbations of its environment, so that we can both understand in depth the biology of this organism and to guide us towards new biotechnological applications. This includes from the understanding of the biological roles of protein phosphatases to the development of novel yeast expression vectors driven by changes in the pH of the medium.

LAB FEATURED PUBLICATIONS

- 1.- Tatjer, L., Sacristán-Reviriego, A., Casado, C., González, A., Rodríguez-Porrata, B., Palacios, L., Canadell, D., Serra-Cardona, A., Martín, H., Molina, M. & Ariño, J. (2016) The yeast Ptc1 protein phosphatase regulates a variety of cellular functions by targeting the Mkk1 kinase. **Genetics**. 202,141-56.
- 2.- Trevijano-Contador, N.; Cesar de Oliveira, H.; García-Rodas, R.; Rossi, S.A.; Llorente, I.; Zaballo, A.; Janbon, G.; Ariño, J. and Zaragoza, O. (2018) *Cryptococcus neoformans* can form titan-like cells in vitro in response to multiple signals. **PLOS Pathogens**. 14(5): e1007007 (1-37). <https://doi.org/10.1371/journal.ppat.1007007>
- 3.- Zhang, C.; García-Rodas, R.; Molero, C.; de Oliveira, H.C.; Tabernero, L.; Reverter, D.; Zaragoza, O. and Ariño, J. (2019) Characterization of the atypical Ppz/Hal3 phosphatase system from the pathogenic fungus *Cryptococcus neoformans*. **Molecular Microbiology** 111, 898-917. doi: 10.1111/mmi.14181
- 4.- Velázquez, D.; Albacar, M.; Zhang, C.; Calafí, C.; López-Malo, M.; Torres-Torronteras, J.; Martí, R.; Kovalchuk, S.I.; Pinson, B.; Jensen, O.N.; Daignan-Fornier, B.; Casamayor, A.; Ariño, J. (2020) Yeast Ppz1 protein phosphatase toxicity involves the alteration of multiple cellular targets. **Sci. Rep.**, 10, 15613 (1-21).