iata
Instituto de Agroquímica y Tecnología de Alimentos

RESEARCH GROUP

Systems biology in yeast of biotechnological interest

The group is open to discuss any kind of collaboration with industry and academia related to these topics.

The aim of the group is to develop bioanalytical systems for toxic compound detection. The methods are based on antibody technology and can be used for the detection of a wide variety of chemical contaminants in food or environmental samples, such as pesticides, additives, antibiotics, toxins and other emerging contaminants.

FIELD OF EXPERTISE

The understanding of the capacity of adaptation of yeasts to different conditions can be exploited by the use of different techniques, such as adaptive evolution, hybridisation or GMOs, to confer yeasts with properties of interests for industrial and biotechnological applications.

Adaptation to different environments such as temperature or nutritional profile (nitrogen or Fe availability for example) can be used to select and genetically improve new yeast strains for alcoholic fermentation or other advanced biotechnological applications.

With these objectives in mind, the group has developed a deep expertise in different fields and techniques that allows them to face a wide variety of challenges around this field: metabolic and gene expression studies, global analysis techniques (omics), oenological properties, genetic functions, etc.

MAIN APPLICATIONS AND SERVICES

- Identification and characterisation of yeasts in fermentations (wine, beer or other alcoholic fermentations).
- Selection of starter cultures for use in alcoholic fermentations.
- Genetic modification of yeasts by non-GMO techniques to improve alcoholic fermentations in different aspects, such as the increase of glycerol production, decrease of ethanol yield, improve growth in conditions of low N_2 concentrations, improve the volatile profile or increase the yeast tolerance to high or low temperatures.
- Obtainment of yeasts with increased Fe accumulation to be used as dietary supplements.

FURTHER INFORMATION

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