



# NoBaY



## DEVELOPMENT OF INNOVATIVE FOOD PRODUCTS FOR BAKER'S YEAST-INTOLERANT PEOPLE



### OUR IDEA

Replace baker's yeast with microbial strains (i.e., *Zymomonas mobilis* and *Kluyveromyces* spp.) possessing an analogous fermentative metabolism, without any similarity to the cell wall components of *S. cerevisiae*.

### BACKGROUND

- About 20% of adults report food-related hypersensitivity reactions; among these, the incidence of intolerance to baker's yeast is increasing in Western population.
- Anti-*S. cerevisiae* antibodies (ASCA) have been described in up to 68% of patients with Crohn's disease.

### GOALS

- Develop yeast-free products (e.g., baked goods and alcoholic beverages)
- Create a multidisciplinary research team guaranteeing a holistic approach
- Apply to international research project calls.

### ARE YOU...

- an expert in **Nutritional Immunology** and **Food Allergies and Intolerances**?

We want to assess the immunological (or inflammatory) response against cellular models, commercial antibodies, or antisera from Crohn's disease patients ...please **CONTACT US!**

- an expert in **Bio-processing and Brewing Technology**?

We want to develop an yeast-free beer ...please **CONTACT US!**

- an expert in **Sensory Science**?

We need to assess the sensory properties of the developed yeast-free foods and beverages ...please **CONTACT US!**

- a **SME** interested in the exploitation of the NoBaY's results?

We can apply for an EUROSTARS PROJECT ...please **CONTACT US!**

- a **Canadian** organization interested in NoBaY?

We can apply for a MITACS ACCELERATE INTERNATIONAL ...please **CONTACT US!**

- not included in this list but **willing to join NoBaY?** ...please **CONTACT US!**

**WE NEED YOU!**  
ME NEED YOU!



### WHO WE ARE



We all belong to the Dept. of Food, Environmental and Nutritional Sciences (DeFENS) of the University of Milan

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### OUR SKILLS

- **Food and Industrial Microbiology:** evaluation of the biotechnological conditions to optimize the growth of *Zymomonas* biomass and cell fermentation performances;
- **Food Technology:** Design of Experiment techniques for the development and optimization of food products and processing;
- **Food Biochemistry:** characterization of food macromolecules and of their functional interactions, and enzymatic approaches relevant to improve *Zymomonas* fermentative metabolism.

### PRELIMINARY RESULTS



- Musatti A., Cappa C., Mapelli C., Alamprese C., Rollini M. (under review). *Zymomonas mobilis* in bread doughs: strategies to improve its fermentative performances. *Food Res. Int.*
- Cappa C., Musatti A., Rollini M., Alamprese C. (2018). Microbiological and technological aspects of bread doughs leavened by *Zymomonas mobilis*. 32nd EFFoST International Conference, 6-8 November 2018, Nantes, France
- Musatti A., Mapelli C., Rollini M., Foschino R., Picozzi C. (2018). Can *Zymomonas mobilis* substitute *Saccharomyces cerevisiae* in cereal dough leavening? *Foods*, 7, 61
- Musatti A., Mapelli C., Foschino R., Picozzi C., Rollini M. (2016). Unconventional bacterial association for dough leavening. *Int. J. Food Microbiol.*, 237, 28-34
- Musatti A., Picozzi C., Foschino R., Mapelli C., Rollini M., (2015). Unconventional bacterial association for sourdough: *Zymomonas mobilis* and *Lactobacillus sanfranciscensis*. 6th Sourdough and Cereal Fermentation Symposium 30 September - 02 October 2015, Nantes, France
- Musatti A., Rollini M., Sambusiti C., Manzoni M. (2015). *Zymomonas mobilis*: biomass production and use as dough leavening agent. *Ann. Microbiol.*, 65, 1583-1589