PhD SCHOLARSHIP APPLICATION

Division / Business Area: Health / General Health Services

Building / Province: Miñano 2 / Álava

SCHOLARSHIP DESCRIPTION

Title: **Fermented and probiotic foods from food by-products**

Brief description: The main purpose of the research is to obtain new healthy fermented and/or probiotic food bio-products from food by-products through fermentation-based technologies. In particular, the aim is to obtain a fermented drink and a probiotic formula which is stabilised and supplemented by a prebiotic generating synergy between them, to be used as an ingredient in the development of pasteurised food such as high nutritional value purée and/or dairy products.

Detailed description:

The main purpose of the research is to obtain new healthy fermented and/or probiotic food bio-products from food by-products through fermentation-based technologies.

In particular, the aim is to obtain a fermented drink and a probiotic formula which is stabilised and supplemented by a prebiotic generating synergy between them, to be used as an ingredient in the development of pasteurised food such as high nutritional value purée and/or dairy products.

This doctorate is incorporated within the research lines of the https://youtu.be/WM007YOcVU Healthy Food Area and considers a research line with great potential in the field of probiotics. The challenge is ambitious and is going to require training alongside high level, experienced researchers, in order to become a reference in this field. The healthy food area in TECNALIA ties to respond to the needs of the food and beverages industry through research that develops new technologies that allow healthier foods to be developed, with several major successes in the past 3 years.

The global purpose proposed includes the following specific outcomes:

- Nutritional and physical-chemical characterisation of agro-food by-products to be recovered to learn about their usability in fermenting processes.

- Develop substrates from agro-food by-products with the characteristics required for fermentation processes to be correct.

- Select microorganisms to be used in fermenting processes for the development of a fermented healthy and/or probiotic food and the development of a probiotic concentrate for application to purées and/or dairy products.

- Optimise fermenting parameters and select substrates appropriate to obtain the desired products and achieve sustainable cost-effective processes.

- Select prebiotic compounds generating a synergy impact with the probiotic microorganisms obtained.

- Develop immobilisation techniques for both probiotic microorganisms and prebiotics through encapsulation in order to improve the stability and survival of thermal pasteurisation treatments and therefore achieve the desired synergy, boosting the ingredient nutritional value.

- Prepare a fermented drink and a probiotic and prebiotic concentrate with beneficial impact on health, using food by-products as fermentation substrates.

REQUIREMENTS

Degree and specialisation:	Degree in Biotechnology, Biochemistry or Food Technology
Languages:	Spanish and English (intermediate-advanced level)
IT skills:	Advanced use of Microsoft Office and use of statistical programme Statgraphics will be an advantage.
The following will be a plus:	Knowledge of Experiment Design, Statistics and Literature Searching

Further information and applications: http://bit.ly/2qEmVnL