OPEN PHD POSITION FOR MARIE SKŁODOWSKA-CURIE INNOVATIVE TRAINING NETWORKS (MSCA-ITN) AT CSIC

**MSCA-ITN**
BREAK BIOFILMS

**PROJECT**
Breaking Bad Biofilms. Innovative Analysis and Design Rules for Next-Generation Antifouling Interfaces

**PhD SUPERVISOR(S)**
María Fernández

**SCIENTIFIC AREA**
Microbiology

**HOST INSTITUTION**
Instituto de Productos Lácteos de Asturias, IPLA-CSIC. Villaviciosa, Asturias. Spain

**DURATION**
36 months

**FIXED START DATE:**
Application deadline: 30/04/2019
Start date: 01/09/2019

**PLANNED SECONDMENT(S):**
ILAS Reny Picot (Asturias, Spain) M34-36, training on industrial microbiology laboratory protocols. UNIOVI, Felipe Lombó, complementary training on microbiology, M33

**EMAIL OF THE PhD SUPERVISOR(S)**
mfernandez@ipla.csic.es

**WEBSITE OF THE ITN-MSCA**

**WEBSITE OF THE RESEARCH GROUP OR CENTRE/INSTITUTE**
http://www.ipla.csic.es/
IDEAL CANDIDATES

Candidates of any nationality with a proven track record in Microbiology, Biology or Biotechnology demonstrated through a Master’s degree certificate and appropriate experience. Candidates should also be able to demonstrate extra-academic experience and interest to learn and to work in a laboratory. Other attributes that will be valued are academic excellence, professional experience and linguistic proficiency in Spanish and English.

DESIRABLE CANDIDATE REQUIREMENTS

We seek a bright, highly motivated and enthusiastic candidate with interpersonal and communication skills. Other qualities required are the ability to work in group and to discuss and expose new ideas. The candidates should be able to integrate into the laboratory team, be willing to approach new challenges, to learn about multidisciplinary subjects by moving to other laboratories and companies. Candidates with previous experience in area related with the project such as microbiology, molecular biology, bioinformatics, will be positively evaluated although it is not mandatory.

BENEFITS

The Candidate will be hosted by the Molecular Microbiology group (http://www.ipla.csic.es/microbiologia-molecular) at Dairy Research Institute of Asturias (IPLA-CSIC), which will provide the supervision and training aspects of the research project. As a part of the training short stays (3-6 moths) at ILAS Reny Picot are planned. The Candidate will be enrolled in PhD studies at University of Oviedo.
# PhD Project

**Project Title:** Understanding lactic acid bacteria biofilm formation

**Objective:** The goal of this project is to known the mechanism and factors affecting biofilm formation in lactic acid bacteria. This is an important microbial group since some genera are relevant in food fermentation especially in dairy products where has been associated with the accumulation of toxic products such as biogenic amines and other are infamous for their resistance to many antibiotics being causative agents of nosocomial infections.

The specific objectives are:

1. Genome sequencing of BA-producing LAB able to form biofilms.
2. Bioinformatics and proteomic identification of genes related to surface adhesion and biofilm formation in different surfaces. Analysis of biofilms formation will be done in collaboration with other groups from this consortium.
3. Research on the regulation of the identified genes to identify possible targets to inhibit or disperse biofilms.
4. Construction of knock out strains to understand the physiological role of the identified genes.

**Expected Results:** Only from the knowledge of factors affecting biofilms formation in different sources will be possible to suggest new strategies and new products, with anti-biofilm activity intended to be applied in industrial settings, food safety and healthcare. The student will also evaluate different strategies in collaboration with other partners in the training network.