

## ***URV and IRTA ARE SEEKING A PhD STUDENT GRANTED BY THE MFP-COFUND PROGRAMME***

A joint PhD position granted by the MFP-COFUND programme is offered as part of the collaboration between the [MoBioFood](#) Research group from URV and the [Animal Nutrition Program](#) from IRTA.

In 2020, one selected candidate will be the beneficiary of a 3-year working contract with all benefits attached. This contract includes high level interdisciplinary, inter-sectorial, and international training with personalized career development plans involving soft-skills training, secondments, and mentoring. Over 50 partner organisations actively support this programme.

### ***Title of the project in which the PhD student will be involved***

**“Gut barrier function in livestock: understanding the mechanisms of disruption and evaluation of possible bioactive substances to improve it”**

### ***Description of the research project***

The animals' fast growth and the intensive management practices can sometimes disturb the proper maturation and functionality of their digestive system. The production environment could add stressors affecting the health and growth of animals. These stressors can include environment, nutrition, and infection. Heat stress increases the permeability, oxidative stress, and inflammatory responses in the gut. Nutritional stress from fasting, antinutritional compounds, and toxins induces the leakage and destruction of the tight junction proteins in the gut. Pathogenic and viral infections can also lead to loosening the intestinal barrier. In the past, antibiotics had been commonly used for prophylaxis or as growth promoters and probably helped controlling barrier function disturbances. However, these practices have been banned in the EU (and many other countries) due to the increased occurrences of microbial resistance to antibiotics, and therefore alternative products are needed. The alterations in the intestinal barrier often challenge homeostasis of animals which results in neuroendocrine alteration, reduced feed intake, growth rates and increased morbidity and mortality, factors that influence animal health negatively and, in the end, lower the productivity. For these reasons, it is crucial to find solutions to prevent/ameliorate/reverse intestinal barrier alterations. However, the molecular mechanisms that relate the stressors with gut barrier damage are not fully described. In this scenario our main objectives are:

- To investigate ex vivo the molecular mechanisms linking the stressors with the specific gut alterations.
- Once identified the molecular pathways, we aim to test ex vivo potential nutritional supplements that might prevent/reverse these barrier alterations.

- Once we have tested the different compounds ex vivo, we will test the effectiveness of those bioactives with the most potential in livestock animals, mainly pigs and poultry.

This proposal is challenging and attractive because it implies the collaboration between experts from two research centers: MoBioFood Research group from the Universitat Rovira i Virgili and the Animal Nutrition Program from IRTA. This complementary backgrounds from both groups assure synergistic and both basic and applied results that will contribute to the improvement of animals' welfare and food safety.

### **Duration**

The duration of the PhD student contract will be for three (3) years.

### **The MFP-COFUND programme offers**

- One of the best salaries at PhD level in Europe. Gross monthly salary of approximately 2.200 €. Apart from the salary, URV will contribute up to 7.500 € each year to the cost of the fellow's travels, research and training.
- 3-6 months secondments at international (and in some cases intersectoral) partner organizations.
- An international environment supported by the adherence to the European Charter & Code.
- Enrolment in excellent PhD programmes.
- Opportunity to do research in a top 500 universities in the world (76 in THE Young universities ranking).
- Access to high-quality infrastructures for research & innovation.
- Gender balanced, Open, Transparent and Merit based Recruitment.
- Equal opportunities for all.

<b>Position description</b>	
<b>Title of the research project</b>	Gut barrier function in livestock: understanding the mechanisms of disruption and evaluation of possible bioactive substances to improve it
<b>Keywords</b>	Gut barrier; Animal nutrition
<b>Research line</b>	Proanthocyanidins and metabolic syndrome
<b>PhD Programme</b>	Nutrition and Metabolism
<b>Reference</b>	2020MFP-COFUND-4

For more information: <https://www.findaphd.com/phds/program/mart-i-franqu-s-msca-cofund-dp-call-for-31-phd-candidates/?i739p3396>

## Required profile

- A highly motivated student with a special interest in the research areas of Metabolic Syndrome, Inflammation and Autophagy, Bioactive Food Compounds and Ageing (human and animal models).
- Degree in Biology, Biochemistry or related life sciences.
- Master in Biosciences at the point of enrolment.
- Certified experience for animals' experimentation.
- Experience in cell culture.
- Knowledge of statistics.

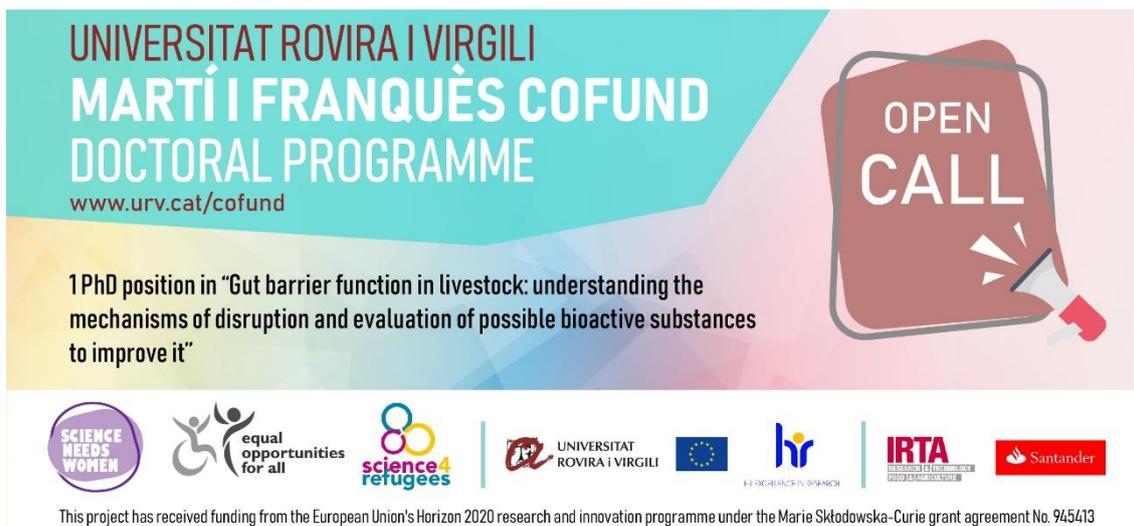
## Contact details

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**Deadline: November 25<sup>th</sup>, 2020**



UNIVERSITAT ROVIRA I VIRGILI  
**MARTÍ I FRANQUÈS COFUND  
DOCTORAL PROGRAMME**  
[www.urv.cat/cofund](http://www.urv.cat/cofund)

1 PhD position in "Gut barrier function in livestock: understanding the mechanisms of disruption and evaluation of possible bioactive substances to improve it"

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**The IRTA** is a pioneering agriculture and food research institute in Catalonia, founded on 1985, with a team of over 700 people performing its activities with the clear vocation of a public service. It has 10 work centres of its own on locations.