

PRESS RELEASE

The new "la Caixa" Foundation - BIST Chemical Biology Programme launches a hub in Barcelona for the design of new drugs

- The "la Caixa" Foundation and BIST are creating a chemical biology programme to promote two new cutting-edge research groups at IRB Barcelona and IBEC (both BIST centres). The initiative aims to attract talent from the field of chemical biology, and to create an ecosystem that fosters research excellence in improving health.
- The aim of the programme is to further research in chemical biology, with a focus on improving the design and production of new drugs, thereby creating a hub of this discipline in Barcelona.
- The programme kicks off with the incorporation of two new research groups at IRB Barcelona and IBEC, led by two outstanding researchers: Dr. Cristina Mayor-Ruiz (IRB Barcelona) and Dr. Irene Marco-Rius (IBEC).
- Chemical biology studies the behaviour of small molecules in living systems, combining the quantitative techniques of chemistry with the medical relevance of biology. One of the goals of chemical biology is to develop new drugs.

Barcelona, March 2, 2021. The ["la Caixa" Foundation](#) and the [Barcelona Institute of Science and Technology](#) (BIST) are launching the "la Caixa" Foundation - BIST Chemical Biology Programme to advance research in chemical biology, and to develop new medicines. Two centres - the [Institute for Bioengineering of Catalonia](#) and the [Institute for Research in Biomedicine](#), join the initiative with the incorporation of two new group leaders: Dr. Irene Marco-Rius (IBEC) and Dr. Cristina Mayor-Ruiz (IRB Barcelona). The researchers will lead their own chemical biology groups at their respective centres, establishing a framework for multidisciplinary research collaboration.

The main objectives of the project are to launch a **powerful research programme in chemical biology, and to attract talent** through the creation of a hub in Barcelona focused on this discipline. With the collaboration of the two leading centres, IBEC and IRB Barcelona, multidisciplinary research and the establishment of an important hub in the city will be encouraged, opening the door to new chemical biology collaborations and projects.

"With this programme, the "la Caixa" Foundation takes another step forward in its firm commitment to ensuring health research is transferred to society. For more than 30 years the

institution has been committed to research excellence, convinced that promoting health research means investing in people's wellbeing. Thus, support for research programmes and innovation is essential to promoting an ecosystem that fosters the search for new solutions and provides answers to major current and future challenges in the field of health," says Àngel Font, Corporate Director of Research and Health at the "la Caixa" Foundation.

Within this context, **Dr. Mayor-Ruiz** stresses that *"chemical biology has great translational potential, especially for the production of new drugs. Promoting a powerful hub focused on this discipline in an environment like Barcelona, which has a strong pharmaceutical presence, is therefore especially interesting."* Cristina Mayor-Ruiz's new lab works on targeted protein degradation, an innovative technique with therapeutic applications. *"What we do is use chemical entities (drugs) to reprogramme mechanisms that our cells naturally employ to degrade proteins. We redirect these mechanisms towards proteins that are of therapeutic interest. Examples include the treatment of cancer, specifically pancreatic cancer, for which there is currently practically no treatment available."*

Dr. Irene Marco-Rius explains that her group will focus on developing innovative molecular imaging technologies to diagnose diseases and assess early response to treatment. *"The cells in our body adapt rapidly to their environment and change the way they get nutrients and energy needed to survive. My group works with technology that allows us to study these chemical reactions inside our bodies (or using tissue bioengineering), and to find markers of disease or drug responses before anatomical changes occur. For example, we can distinguish between cancer cells and healthy cells inside the body using a magnetic resonance imaging device without any pain and without the need for a biopsy."* Dr. Marco-Rius adds that *"biomedical research is very multidisciplinary, and a hub of excellence that fosters collaboration and the exchange of knowledge is needed to support scientific breakthroughs. In this respect, Barcelona as a city, and the "la Caixa" Foundation – BIST programme are key elements for us to continue our cutting-edge research"*.

Chemical biology, a booming discipline

Chemical biology studies the behaviour of small molecules in living systems, combining the quantitative techniques of chemistry with the medical relevance of biology. One of the goals of chemical biology is to develop new drugs, as Prof. Herbert Waldmann of the Max Planck Institute for Molecular Physiology describes: *"Chemical biology has the inherent capacity to contribute to the improvement of human life, in particular by inspiring and fuelling the development of new and better drugs and improving human nutrition."*

While in countries like Germany, where Prof. Waldmann's institute is located, chemical biology is an important research discipline, there are only a few isolated research groups working in this discipline in our country. The "la Caixa" Foundation – BIST Chemical Biology Programme is thus of particular importance, aiming to advance chemical biology research in Barcelona, which already has strong biopharmaceutical sector. The programme offers the unique opportunity to take advantage of this existing infrastructure in Barcelona to advance this

discipline both locally and internationally, and to establish a new line of multidisciplinary research that does not yet exist in our country.

A programme to boost young talent

The programme has led to the creation of two new junior group leader positions, for which researchers **Cristina Mayor-Ruiz** (IRB Barcelona) and **Irene Marco-Rius** (IBEC) have been selected. The selection of Dr. [Cristina Mayor-Ruiz](#) fulfils the programme's objective of attracting talent, as she is a young researcher with a strong track record in chemical biology. She obtained her PhD in 2017 at the Spanish National Cancer Research Centre (CNIO) in Madrid, before moving to the Research Centre for Molecular Medicine (CEMM) in Vienna, with the support of EMBO and Marie Curie postdoctoral fellowships.

Dr. [Irene Marco-Rius](#) brings research excellence and international experience to her role. She obtained a master's degree from the University of Heidelberg (Germany - "la Caixa"-DAAD Postgraduate Fellowship), and a PhD from the University of Cambridge in 2014 (UK - Marie Curie ITN Fellowship) and then, after postdoctoral positions at the University of California - San Francisco (USA) and at the Cancer Research UK Cambridge Institute, she joined IBEC in 2018 as a researcher in the "Biosensors for Bioengineering" group ("la Caixa" Junior Leader Postdoctoral Fellowship). Dr. Marco-Rius has been coordinating the European project Bloc since 2020.

Dr. Marco-Rius' new position also represents a success story for the BIST [To the Mothers of Science](#) leadership programme. She was one of the winners of the 2020 edition of this programme, which aims to support mothers working in research as they advance in their respective fields, equipping them with the necessary tools to succeed in leadership roles. Dr. Marco-Rius will launch her own chemical biology lab at IBEC this year.

About the "la Caixa" Foundation

To give opportunities to the people who need them most, with the aim of contributing to the construction of a fairer and more equitable society. This is the raison d'être of the "la Caixa" Foundation, created in 1904. It currently has a budget of more than 500 million euros per year, making it the leading private foundation in Spain and among the most relevant foundations in the world.

The priority of the "la Caixa" Foundation is the development of social programmes that respond to the great challenges of our time, including the fight against childhood poverty, the promotion of employment, care for people with advanced illnesses, and the promotion of active and healthy ageing. Medical research, excellent training, culture, and education, all fundamental for promoting progress and equal opportunities, are other strategic lines of the foundation.

About BIST

The Barcelona Institute of Science and Technology (BIST) is a leading institution of multidisciplinary research encompassing seven Catalan research centres of excellence. By fostering collaboration among members of its diverse scientific community, BIST aims to play a leading role in pushing the frontiers of science while becoming a global reference for training outstanding research talent.

The centres of the BIST are the [Centre for Genomic Regulation](#) (CRG), the [Institute for Bioengineering of Catalonia](#) (IBEC), the [Institute of Photonic Sciences](#) (ICFO), the [Institute of Chemical Research of Catalonia](#) (ICIQ), the [Catalan Institute of Nanoscience and Nanotechnology](#) (ICN2), the [Institute for High Energy Physics](#) (IFAE), and the [Institute for Research in Biomedicine](#) (IRB Barcelona).



Media contact:

**Barcelona Institute of Science and
Technology (BIST)**
Adela Farré, Communications Director
afarre@bist.eu
T. +34 626 992 057

**"la Caixa" Foundation Communication
Department**
Irene Roch
iroch@fundaciolacaixa.org
T. 669 457 094