BIOMEDICAL SCIENCE FOR THE BENEFIT OF SOCIETY

"Postdoc in the Dynamics of Protein Synthesis and RNA Decay Lab"
Centre for Genomic Regulation (CRG)

The Institute

The Centre for Genomic Regulation (CRG) is an international biomedical research institute of excellence, based in Barcelona, Spain, with more than 400 scientists from 44 countries. The CRG is composed by an interdisciplinary, motivated and creative scientific team which is supported both by a flexible and efficient administration and by high-end and innovative technologies.

In April 2021, the Centre for Genomic Regulation (CRG) received the renewal of the 'HR Excellence in Research' Award from the European Commission. This is a recognition of the Institute's commitment to developing an HR Strategy for Researchers, designed to bring the practices and procedures in line with the principles of the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (Charter and Code).

Please, check out our Recruitment Policy

The Höpfler lab is looking for a postdoctoral researcher to lead a project in the field of **RNA biology** and **gene regulation** with a strong interest in driving **development of sequencing methods** to identify mRNA decay substrates and decipher degradation mechanisms.

The role

The successful candidate will join the Dynamics of Protein Synthesis and RNA Decay Group. Their work will address an exciting question in gene regulation: how cells dynamically control the stability of messenger RNAs by selective degradation during protein synthesis by the ribosome. The lab studies this problem in the context of both fundamental molecular mechanisms and disease-related regulation.

The position will be a chance to join a young, ambitious and curiosity-driven lab at the CRG, one of Europe's prime institutes for molecular life sciences, surrounded by the dynamic Barcelona research environment. The project is embedded in the ERC-funded DECODE-PMD project to better understand peptide-mediated mRNA decay (PMD).

Key responsibilities include:

- Development of sequencing approaches to identify PMD substrates
- Bioinformatic data analysis and visualization
- Identification and mechanistic characterization of PMD candidate substrates
- Presentation of data at international conferences and manuscript preparation
- Leading and managing international collaborations
- Active participation in lab meetings and contribution to a culture of technical excellence and scientific curiosity

About the Höpfler lab

Group leader: Dr. Markus Höpfler

How do cells accurately tune protein production according to cellular needs? This fundamental question is not only fascinating but also crucial to human health: Aberrant protein levels are commonly linked to diseases such as developmental defects, cancer, or neurodegenerative diseases, where aggregation-prone proteins tend to accumulate in neurons.

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In the “Dynamics of protein synthesis & RNA decay” lab we are interested in how cells tune protein production by adjusting the stability of messenger RNAs (mRNAs). Each cell in our body expresses around 12,000 different mRNAs at any given time. To control this complex transcriptome—and thus protein synthesis—cells adjust half-lives for individual mRNAs from minutes to several days. Traditionally, the selective degradation of mRNAs has been attributed to the recognition of nucleotide sequence elements by proteins or small RNAs that subsequently recruit decay factors. In our lab, we investigate a distinct, newly emerging paradigm of gene regulation termed “peptide-mediated mRNA decay” (PMD). In PMD, not the mRNA sequence but rather the nascent protein is recognized to trigger degradation of the encoding mRNA during its translation by the ribosome, as we recently established for tubulin mRNAs.

Using a highly interdisciplinary approach spanning biochemistry, structural biology, cell biology, genetics, and advanced sequencing methods, we aim to answer the following questions: What are the factors and molecular mechanisms driving peptide-mediated mRNA decay? How are these mechanisms controlled, and what are the consequences of impaired mRNA turnover for cells and organisms? What is the transcriptome-wide scope of regulation by peptide-mediated mRNA decay?

Answering these questions will be highly relevant to human biology and disease, as highlighted by the examples of tubulin and aggregation-prone proteins regulated by PMD. Furthermore, insights into mRNA decay mechanisms will enable development of optimized mRNA-based therapeutics like mRNA vaccines.

Recent publications include:

- Höpfler et al., *Mol Cell*, 2023
- Höpfler & Hegde, *Mol Cell*, 2023
- Batiuk, Höpfler et al., *Nat Commun*, 2024

Additional information can be found on the lab website: https://www.crg.eu/en/programmes-groups/hopfler-lab Contact: Markus Höpfler markus.hopfler@crg.eu

Whom would we like to hire?

We are particularly interested in candidates with a **hybrid wet lab + bioinformatics background** with a track record in **RNA biology** or **gene regulation**, but we will consider applications with related expertise. Experience with **sequencing approaches** to study RNA turnover or with **massively parallel reporter assays (MPRAs)** will be beneficial.

Must Have

- Bioinformatics experience in the analysis of (RNA) sequencing data
- Experience with common lab techniques in cell & molecular biology
- The candidate must hold a PhD degree, preferably in cell/molecular biology or bioinformatics, or related fields (or expect to finish the degree before starting)
- A strong publication records commensurate with career stage
- Ability to pursue research projects independently

Desirable but not required/ Nice to have

- Experience with massively parallel reporter assays of any kind
- Experience with studying mRNA turnover on a transcriptome-wide scale
- Background in RNA biology, translational control or related fields

Languages

- Fluency in written and spoken English

Computer skills

- Skilled with data analyses software (R/Python)

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- Experience with using high performance computing clustersAdvanced MS Office experience

Competences

- Curiosity and critical thinking
- Rigor, organization and autonomy
- Strong analytical, interpersonal, and communication skills

The Offer – Working Conditions

- **Contract duration:** Technical and scientific activities contract (estimated duration 2 years)
- **Estimated annual gross salary:** Salary will be commensurate with qualifications and consistent with our pay scales
- **Target start date:** from October 2026 (flexible)

We provide a highly stimulating environment with state-of-the-art infrastructures, and unique professional career development opportunities. To check out our training and development portfolio, please visit our website in the training section.

We offer and **promote a diverse and inclusive environment** and welcome applicants regardless of age, disability, gender, nationality, ethnicity, religion, sexual orientation or gender identity.

The **CRG is committed to reconcile a work and family life** of its employees and are offering extended vacation period and the possibility to benefit from flexible working hours.

Application Procedure

All applications must include:

1. A motivation letter addressed to Dr. Markus Höpfler.
2. A complete CV including contact details and publications.
3. Contact details of two to three referees.

All applications must be addressed to Dr. Markus Höpfler and be submitted online on the CRG Career site - http://www.crg.eu/en/content/careers/job-opportunities

Selection Process

- **Pre-selection**: The pre-selection process will be based on qualifications and expertise reflected on the candidates CVS. It will be merit-based.

- **Interview**: Preselected candidates will be interviewed by the Hiring Manager of the position and a selection panel if required.

- **Offer Letter**: Once the successful candidate is identified the People department will send a Job Offer, specifying the start day, salary, working conditions, among other important details.

Deadline: Please submit your application before 30/06/2025.

Suggestions: The CRG believes in **ongoing improvement** and promotes a **culture of feedback**. This is one of the reasons we have in place, at your disposal as a candidate, a mechanism to gather your suggestions/complaints concerning your candidate experience in our recruitment processes. Your feedback really matters to us in our aim at creating a **positive candidate journey**. You can make a difference and help us improve by letting us know your suggestions through the following form.

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