



Date of publication of the job offer: October 1st 2021

Pompeu Fabra University (UPF), PRBB, Barcelona
Pura Muñoz-Cánoves Lab

Postdoctoral Position in
Molecular basis of muscle aging

Job description

We seek for a highly competitive **Bioinformatician** to work closely together with wet lab scientists from our research team in the Department of Experimental and Health Sciences of the Pompeu Fabra University (UPF) at the PRBB, in Barcelona.

We study the mechanisms underlying tissue regenerative decline with aging, and in particular the mechanisms controlling **muscle aging (sarcopenia)**, with the aim of preventing or delaying sarcopenia through rejuvenating strategies.

You will be employed on a three-years project combining transcriptomics, epigenetics, bioinformatics and computational biology, with mouse genetics, to define the intricate regulatory circuitry of muscle aging and potential rejuvenating strategies.

The tasks of this open position include developing state-of-the-art approaches for exploration, integration and interpretation of high-throughput data, including NGS (RNA-seq, ATAC-seq and ChIP-seq), and performing computational biology analysis such as differential expression, transcription factor motif and pathway enrichment analysis. Applicants are expected to hold an academic degree (BSc, MSc, PhD in Bioinformatics, Biostatistics, or Life Sciences) and must have a good knowledge of Linux, bash scripting, statistical programming and data manipulation using e.g. R/Bioconductor or Python. Besides, some familiarity with HPC work environments would be desirable.

Recent publications from the lab

- García-Prat L, Perdiguero E, Alonso-Martín S, Dell'Orso S, Ravichandran K, Brooks SR, Juan AH, Campanario S, Jiang K, Hong X, Ortet L, Moiseeva V, Rebollo E, Sun H-W, Musarò A, Sandri M, del Sol A, Sartorelli V, Muñoz-Cánoves P. FoxO maintains a genuine muscle stem-cell quiescent state until geriatric age. **Nature Cell Biol**, 2020
- Segalés J, Perdiguero R, Serrano AL, Sousa-Victor P, Ortet L, Jardí M, Budanov A, Garcia-Prat L, Sandri M, David M, Thomson DM, Karin M, Lee JH, Muñoz-Cánoves P. Sestrin prevents atrophy of disused and aging muscles by integrating anabolic and catabolic signals. **Nature Commun**, 2020
- Solanas G, Peixoto FO, Perdiguero E, Jardí M, Ruiz-Bonilla V, Datta D, Symeonidi A, Welz PS, Caballero JM, Sassone-Corsi P, Muñoz-Cánoves P*, Benitah SA*. Aged stem cells reprogram their daily rhythmic functions to adapt to stress. **Cell**, 2017
- Autophagy maintains stemness by preventing senescence. García-Prat L, Martínez-Vicente M, Perdiguero E, Ortet L, Rodríguez-Ubreva J, Rebollo E, Ruiz-Bonilla V, Gutarra S, Ballestar E, Serrano AL, Sandri M, Muñoz-Cánoves P. **Nature** 529:37-42, 2016
- Geriatric muscle stem cells switch reversible quiescence into senescence. Sousa-Victor P, Gutarra S, García-Prat L, Rodríguez-Ubreva J, Ortet L, Ruiz-Bonilla V, Jardí M, Ballestar E, González S, Serrano AL, Perdiguero E, Muñoz-Cánoves P. **Nature** 506:316-21, 2014

Information on the minimum requirements

Candidates are expected to be fluent in English, have excellent communication- and interpersonal skills and be highly motivated to become an integral part of a driven and dynamic multi-disciplinary team. Strong applicants should show critical and independent thinking.

We offer a dynamic and international working environment at the Department of Experimental and Health Sciences (UPF), located at the Barcelona Biomedical Research Park (PRBB), a



world-class research institute offering a vibrant community of international researchers and state-of-the-art facilities.

Benefits of the opening

To be defined depending on the candidate profile.

Information on the application process

CV, list of publications and contact information for referees should be sent to:

pura.munoz@upf.edu; marina.raya@upf.edu

Deadline to submit applications: October 18th, 2021

Contact: marina.raya@upf.edu