UNIVERSITAT DE BARCELONA

# PhD position available in molecular biology of bone development and therapy

We are looking for a PhD student candidates interested in performing a Thesis in our group. We can offer a 1-year contract, with the possibility of extension for the whole thesis period. The project will cover the implementation of the proof of concept that inhibitors of PI3K are therapeutically efficient to block bone formation in patients suffering from FOP (Fibrodysplasia ossificans progressiva) (see Valer et al., 2019).

**Background of the group**: Our group has carried out an active research on the molecular and cellular basis of bone biology. At present, we are studying several aspects of functional genomics of bone biology: study of the signal transduction pathways that control bone homeostasis (Smad, NRF2 and PI3-kinase); study of gene expression and regulatory elements of the transcription involved in osteoblast differentiation. Cumulative data allows us the application of this knowledge to improve strategies for bone tissue engineering from stem cells to regenerate bone structures and identify relevant pharmacological targets for treatment bone pathologies (osteoporosis. heterotopic ossification and FOP).

**Requirements for candidates:**

- Degree and master in a discipline with strong background in molecular and cellular biology.
- Good academic record.
- Willingness to work with mouse models (it will be valued to have the animal handling certificate).
- Fluency in English and writing skills.

**We offer:**

- 1-year contract (approximately 13.000€ net/year).
- Develop a Thesis project working in a dynamic group.
- Funding to cover stages and seminars to expand scientific training

Interested applicants should send a request by email (including a CV, academic record, and a brief statement of research interests) to Francesc Ventura (fventura@ub.edu).

**Project supervisor:** Dr. Francesc Ventura. Dept. Ciències Fisiològiques. Universitat de Barcelona (Campus de Bellvitge) 08907 Hospitalet de Llobregat. email: fventura@ub.edu

## Relevant publications:


Valer, J.A.; Sánchez-de-Diego, C.; Gámez, B.; Mishina, Y.; Rosa J.L.; Ventura, F.
Inhibition of phosphatidylinositol 3-kinase α (PI3Kα) prevents heterotopic ossification.
EMBO Molecular Medicine. e10567. (2019)

Sánchez-de-Diego, C.; Artigas, N.; Pimenta-Lopes, C.; Valer, J.A.; Torrejón, B.; Gama-Pérez, P.; Villena, J.A.; García-Roves, P.M.; Rosa, J.L.; Ventura, F.
Glucose Restriction Promotes Osteocyte Specification by Activating a PGC-1α-Dependent Transcriptional Program.
iScience. 15 (31), pp 79 - 94. (2019)

Valer, J.A.; Sánchez-de-Diego, C.; Pimenta-Lopes, C.; Rosa, J.L.; Ventura, F.
ACVR1 function in health and disease.
Cells. 8-11, pp. 1366. (2019)

Sánchez-de-Diego, C.; Valer, J.A.; Pimenta-Lopes, C.; Rosa, J.L.; Ventura, F.
Interplay between BMPs and Reactive Oxygen Species in Cell Signaling and Pathology.
Biomolecules. 9 (10): pp. 534 (2019)

Artigas, N.; Gámez, B.; Cubillos-Rojas, M.; Sánchez-de Diego, C.; Valer; J.A.; Pons, G.; Rosa, J.L.; Ventura, F.
p53 inhibits SP7/Osterix activity in the transcriptional program of osteoblast differentiation.
Cell Death and Differentiation. pp. 2022-2031. (2017)

Aquino-Martinez, R.; Angelo, A. P.; Ventura, F.
Calcium-containing scaffolds induce bone regeneration by regulating mesenchymal stem cell differentiation and migration.
Stem Cell Research & Therapy. 8, pp. 265. (2017)