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PHD THESIS OFFER: FUNCTIONAL PRECISION MEDICINE TO IMPROVE CANCER TREATMENT.

ABOUT THE RESEARCH GROUP

Dr. Montero's laboratory is starting at the Department of Biomedicine at University of Barcelona Medical School (Hospital Clínic campus) and will focus on cell death, senescence and cancer precision medicine". Thus, in the next five years we will foster our clinical collaborations and expand our presence at hospitals in a clear bench to bedside approach.

One of the main problems in medical oncology is to assign the right treatment to every cancer patient, but the tumors' plasticity complicate these assignments. In the lab we use a functional assay called dynamic BH3 profiling or DBP that allows the rapid evaluation of treatments directly on patient-isolated cells and determine if they will or will not be effective to eradicate a tumor (Montero et al., Cell 2015; Montero et al. Cancer Discovery 2017). Our work currently consists in developing new tools and discover novel therapies for personalized cancer treatment, collaborating with many oncologists internationally in several exciting translational medicine projects. DBP is currently used by my laboratory and others worldwide for precision medicine in the clinic. In fact, my group applied this technique to find new therapies for breast cancer (Alcon et al., Cells 2021; Zañudo et al., Cancer Res. 2021; Schroeder et al., CDDis 2021), and two of the most common pediatric cancers: rhabdomyosarcoma (Alcon et al., Cell Death Disease 2020; Alcon et al., Cell Death Disc. 2022) and B-cell acute lymphoblastic leukemia (Manzano-Muñoz et al., Front Cell Dev Biol. 2021).

The goal of this translational PhD thesis is to combine analyses of cancer cells with DBP data to better understand what are the main signaling pathways ensuring tumors' survival. This information will allow to find better treatments against these tumors and test them. Moreover, the student will help to understand how certain tumors can survive treatment, and find better ways to eliminate them.

ABOUT THE ROLE

This PhD project aims to develop novel therapies for different forms of cancer, adult and pediatric, using functional precision medicine techniques. During this PhD, the candidate is expected to learn and master a wide variety of techniques including tissue culture of primary cells and cell lines, several preclinical murine models of pathology, analytical and molecular biology techniques (WB, DBP, IP, etc.).

JOB REQUIREMENTS

- Master's degree in Biology, Biomedicine, Biochemistry or a related field. Candidates performing master's degree in the 22/23 academic year will also be considered.
- Demonstrated previous experience in wet lab.
- Fluency in written and spoken English
- Organized, hard-working person and proactive, self-motivated and enthusiastic.

- Excellent interpersonal and communication skills and ability to work with other team members.

DESIRED JOB REQUIREMENTS

- Accreditation for experimentation in rodents will be positively valued.
- Knowledge in bioinformatics and R programming will be an advantage.

APPLICATION PROCESS

If you would like to apply submit the following information to anna.moles.fernandez@gmail.com with the subject FPI2022 and your name.

- Curriculum vitae and copy of your average degree qualifications.
- Motivation letter explaining why you are the ideal candidate for this position,
- Reference letter of at least one referee and contact details for 2-3 referees.

Deadline for applications: 15/10/2022

If no suitable candidate is found, the deadline will be extended.

SELECTION PROCESS

- Stage 1 (Pre-selection): Will be based on CV, motivation letter, and experience.
- Stage 2 (Interviews): Short-listed candidates will be interviewed.
- Stage 3 (FPU application): The selected candidate will be required to apply for the FPU2022 call, which is expected to open between October-November 2022.