

## Master Project Proposal

**Title: The impact of IL-7 on metabolic reprogramming in acute lymphoblastic leukemia**

**Synopsis:**

João Barata Lab at Instituto de Medicina Molecular is looking for a motivated master student. The student will develop a master's project under the supervision of Prof. João Barata and Dr. Daniel Ribeiro.

The project consists in evaluating the functional and molecular role of Interleukin-7 (IL-7) in childhood T-cell leukemia (T-cell Acute Lymphoblastic Leukemia; T-ALL). Specifically, whether and how IL-7 is contributing for the metabolic reprogramming of leukemia cells. The metabolic pathways of glycolysis and oxidative phosphorylation will be studied. We will investigate production and consumption of metabolites (e.g. glucose, lactate, O<sub>2</sub>, ATP), respiration, metabolic pathway regulation at the post-translational level and perform gene expression profiling. Furthermore, perturbations using specific small-molecule inhibitors will be used to discriminate the contributing signaling pathways downstream of IL-7, as well as to discover new molecular targets with therapeutic value.

In addition, the student will learn several laboratory techniques such as *cell culture*, *qRT-PCR*, *western blot*, *flow cytometry*, *metabolic profiling* and others.

If you are interested in this project please send your CV to the contact below.

**Supervisor:** *João Barata, JBarata Lab, joao\_barata@medicina.ulisboa.pt*

**Co-Supervisor:** *Daniel Ribeiro, JBarata Lab, danielribeiro@medicina.ulisboa.pt*

[Webpage of the group](#)

**Remunerated or volunteer training:** *volunteer*