

**IBMC - Instituto de Biologia Molecular e Celular**

**Research Fellowship Lic. (f/m)**

**Internal Code:** Norte2020CANCER11

**Project:** NORTE-01-0145-FEDER-000029- *Advancing cancer research: from basic knowledge to application*

**Title:** The HOXOME of cancer

IBMC/i3S is opening **1 (one) Fellowship** to join its Research Program in Cancer Biology. We are looking for a Fellow holding a Degree (Lic.) in Biology, Biochemistry or related fields with experience and autonomy in working in Molecular and Cellular Biology and with the zebrafish model. English language, both spoken and written, and good inter-personal relationships in the context of a multidisciplinary research team are essential attributes. Preference will be given to candidates with these characteristics.

**Group:** Cell Growth and Differentiation

**Team leader:** Renata Freitas

**Work Plan:**

HOX genes play a crucial role during embryonic development, regulating a variety of processes that include cell proliferation and death, cell-to-cell signaling, differentiation and motility. However, aberrations in their expression have been reported not only during abnormal development but also in malignancy. Indeed, the current *state of the art*, strongly suggest that altered HOX gene expression leads, in distinct contexts, to both oncogenesis and tumor suppression. Therefore, studies aiming to characterize the expression and function of HOX genes are absolutely fundamental in cancer diagnosis and therapy. Here we will characterize the HOX signature in distinct epithelial-derived cancers (gastric, breast, and colorectal) using a RT-qPCR platform. For the Hox genes found to be modified in these cancers we will test their tumorigenic or tumor suppressor potential using functional assays in cancer cell lines. We will then pursue to their functional characterization using zebrafish as a preferential *in vivo* model system. This approach will make possible to compare HOX-modified or none modified cancer cells during their proliferation, migration and differentiation *in vivo*. In parallel we will generate zebrafish transgenic lines with modified HOX expression in particular tissues in order to generate *in vivo* disease models for transcriptomic studies, chemical screens or anti-tumoral synthetic peptide tests. Overall, this project offers an opportunity to translate basic research into clinically relevant information, improving the medical intervention in cancer treatment.

The work will be developed at Instituto de Investigação e Inovação em Saúde - i3S, Porto, Portugal. The Fellowship will be for an initial period of 3 months, renewable up to 12 months, and it is expected to start in June 1st 2016.

The fellowship amount is 745 euros, paid by bank transfer, preferentially.  
(<http://alfa.fct.mctes.pt/apoios/bolsas/valores>)

Fellowships are regulated by current laws relating to the Statute of Science Research Fellows, namely Law 40/2004 of August 18, amended and republished by Decree-Law No. 202/2012 of 27 August and the Regulation of Scientific Research Studentships of IBMC approved by Fundação para a Ciência e Tecnologia  
(<http://www.fct.pt/apoios/bolsas/docs/RegulamentoBolsasFCT2015.pdf>)

Selection Committee:

Renata Freitas, PhD

José Bessa, PhD

Carla Lopes, PhD

Applications are open from May 1st to May 15th, 2016.

To apply for the Fellowship interested candidates must hold a University degree (Lic.) and submit the following documents a) Complete CV; b) Letter of Motivation; and c) Referee Letter, *via* the online application system:

<http://www.ibmc.up.pt/gestao candidaturas/index.php?codigo=Norte2020CANCER11>

The ranking list of candidates will be published at IBMC website, and the selected candidate will be notified by email.