

Descrição do projecto para estágio de verão 2017

Laboratório de Biologia Computacional (iMM)

Project Title Bioinformatics analysis of alternative splicing dysregulation in colorectal cancer

Coordinator	Dr. Nuno Morais
Associated Postdoc	Lina Gallego
Lab	Instituto de Medicina Molecular - NMorais Lab
Project Description	<p>Dysregulation of alternative splicing (AS) is a molecular hallmark of cancer and has been associated with initiation and development of colorectal cancer (CRC).</p> <p>We are currently working on the characterisation of the alterations in the AS program that significantly affect CRC progression and prognosis, and its association to additional molecular signatures in the tumours, such as epigenomics patterns (such as DNA methylation). For that purpose, the student will work with RNA sequencing and methylation array data for CRC from The Cancer Genome Atlas (TCGA). The TCGA effort involves the genome-wide molecular profiling of hundreds of samples of each of more than 20 types of cancer, comprising clinically annotated data for hundreds of tumours and matching normal tissues. For CRC, approximately 600 patients have been profiled. Apart from the TCGA data, other publicly available datasets containing tumours and cancer cell line transcriptomic and methylation profiling will be also used.</p>
Concepts	Bioinformatics, Transcriptomics, Alternative splicing, DNA methylation
Number of vacancies	1
Student Profile	Enthusiastic, responsible, eager to learn and work in a multidisciplinary team, with a strong background in “omics” research.
Required skills	<p>Knowledge on molecular biology, basic programming skills are strongly recommended</p> <p>Suggested prerequisites (FCUL courses):</p> <p>Introdução ao Tratamento de Dados</p> <p>Genética</p> <p>Bioestatística</p> <p>Fundamentos de Biologia Molecular</p> <p>Análise de Dados</p> <p>Fundamentos de Bioinformática</p>
Necessary equipment	Laptop (optional)