



Propuesta de Trabajo Fin de Máster

Año académico 2022-2023

MÁSTER EN MÉTODOS COMPUTACIONALES EN CIENCIAS

Proyecto Nº 16 ASIGNADO

Título: Implementation of RNAseq-based approaches to define T cell states and clonality of immunotherapy responses in lymphoma

Departamento/ Laboratorio: Bioquímica y Genética

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Resumen:

Our laboratory has recently developed a **multi-lesion mouse model** that recapitulates the complex immunosuppressive microenvironment of aggressive diffuse large B cell lymphomas (DLBCL). This *in vivo* model is currently been enrolled in several preclinical trials to assess the efficacy of different emergent immunotherapy combinations for lymphoma.

Here, we aim to develop computational analysis pipelines that may allow for transcriptional state definition, as well as T cell receptor (TCR) and B cell receptor (BCR) repertoires extraction from **RNA-seq data**, which will be obtained from sorted malignant B cells and tumor-infiltrating CD4+ and CD8+ cells in DLBCL mice after *in vivo* treatment with the different immunotherapy regimens.

The student will acquire experience in the use of the UNAV-hcluster, Python and different R/Bioconductor packages with the ultimate goal of maximizing the analysis of RNA-seq data to help defining changes in cellular clonality and T cell states associated with **response to immunotherapy in B-cell lymphoma**.

OPTATIVAS RECOMENDADAS

1. Análisis e interpretación de datos de alto rendimiento
2. Machine learning I
3. Machine learning II
4. Programación avanzada (cálculo en GPU)