



PRINCIPE FELIPE
CENTRO DE INVESTIGACION

Seminario CIPF

Single-cell RNAseq for the study of isoforms: how is that possible?

Speaker: Ángeles Arzalluz-Luque

Genomics of Gene Expression Lab, Centro de Investigación Príncipe Felipe

Date: 09/03/2018 – 13h

Place: Salón de Actos CIPF

Abstract: Single-cell RNAseq and alternative splicing studies have recently become two of the most prominent applications of RNAseq, however, the combination of both is still challenging and few research efforts have been dedicated to the intersection between both research goals. Cell-level insight on isoform expression is required to fully understand the biology of alternative splicing but it is still an open question to what extent isoform expression analysis at the single cell level is actually feasible. Single-cell isoform RNAseq can be performed using three approaches (UMI-based or Smart-based library preparation for Illumina, or Single Molecule Sequencing (long-read) technologies). In this seminar, we will establish a set of four conditions that are required for a successful single-cell level isoform study, and evaluate how they are met by these technologies in published research. We will use real data to assess the theoretical limits of each method and provide considerations for experimental design. Finally, we will review published findings in single-cell isoform biology, and provide insight for future development.