13 SEPT

11.00 A.M.
ROOM A206
POVO 1

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ALTERATIONS OF RIBOSOMAL PROTEINS IN CANCER AND THEIR POTENTIAL AS CLINICAL OR THERAPEUTIC TARGETS

Ribosomes are ubiquitous macromolecular complexes deputed to protein synthesis. In physiological conditions, the biosynthesis of all ribosome components [ribosomal RNAs and proteins (RPs)] is finely regulated to ensure the correct balance between all constituents. However, qualitative and quantitative alterations of ribosome biogenesis and ribosomes, either inherited or acquired, are a well-known cancer feature. Indeed, a growing body of evidence highlighted how, in different oncological contexts, mutations in genes encoding for RPs can play an active role in cancer development. This can happen either by introducing structural variants in ribosomes, thus directly influencing ribosome function, or by altering the equilibrium in the availability of ribosome components, thus triggering ribosomal stress. Both situations can activate molecular dominos ultimately contributing to the generation of a cancer-prone environment.
I will present our study on a genetic variant of Ribosomal Protein L5 (RPL5), linked to acute T-cell lymphoblastic leukemia, demonstrating its impact on ribosomal function and cellular phenotype, and its role as a druggable target in leukemia. In a different oncological context, serous ovarian cancer, I will share our data on the role of RPL8 amplification, a common genetic alteration in this disease, on cancer development, and its potential as a novel biomarker.

CIBIO EXTERNAL SEMINAR

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