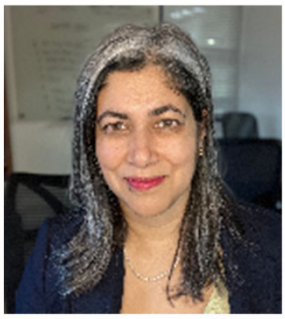
SCIENTIFIC SEMINAR



Lara Mahal

University of Alberta

Breaking Paradigms: How studying glycan regulation upended our understanding of microRNA.

Glycans encode cellular information, including cell-cell interactions and cell state. However, glycosylation is often left out of multi'omic analysis. Using our lectin microarray technology, created in 2005 by the Mahal Lab, we have brought new insights into glycans as drivers of diseases including cancer, and new understanding to how the glycome is regulated. Our work on regulation of the glycome by microRNA (miRNA) has led to an upending of the dogma of how these small non-coding RNA work. The canonical view is that miRNA are posttranscriptional repressors, binding to the 3'-UTR of mRNA and causing a loss of protein expression. In comprehensively mapped the miRNA regulatory landscape of glycosylation enzymes and other genes, we have discovered, contrary to expectations, miRNA can upregulate protein expression in actively dividing cells. miRNA that upregulate do so via direct interactions and use distinct complexes from the downregulatory machinery. We have also shown that they coordinate upregulation of functionally related genes, making tuning by these non-coding RNA bidirectional. In this lecture, I will discuss our latest work at the interface of glycomics, medicine and miRNA.

CIC bioGUNE
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE
EXCELENCIA SEVERO OCHOA

Friday
May 9
Atrio 800
12.00H

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