SCIENTIFIC SEMINAR

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Galectins: emerging glyco-checkpoints and therapeutic targets in cancer and inflammation

Gabriel Rabinovich is a biochemist recognized for his contributions to emerging areas at the frontiers of immunology, glycobiology and tumor biology.

Gabriel Rabinovich's laboratory is interested in understanding the function of glycans and glycan-binding proteins in cellular processes relevant to immune regulation, tolerance and angiogenesis in health and disease. Using an interdisciplinary approach, they have demonstrated that endogenous galectins, a family of soluble glycan-binding proteins, can translate glycan-encoded information into novel regulatory programs that control inflammation, suppress autoimmune pathology and allow cancer cells to evade immune responses and promote blood vessel formation. Together with his team, Rabinovich has demonstrated that galectin-dependent regulatory programs can blunt harmful immune responses by selectively depleting pathogenic T cells, triggering differentiation of tolerogenic dendritic cells and promoting polarization of macrophages and microglia toward an anti-inflammatory phenotype. Moreover, they have identified a dynamically-regulated 'glycan signature' on immune cells that acts as an 'on-and-off' switch to control the regulatory function of galectins. They demonstrated that malignant cells can use the galectin-glycan pathway to create immunosuppressive networks that thwart antitumor responses. Notably, they found that galectin-glycan interactions can also preserve angiogenesis in tumors refractory to anti-angiogenic treatment by recapitulating the signaling activity of vascular endothelial growth factor. These findings open new possibilities for development of therapeutic strategies aimed at potentiating antitumor responses, limiting autoimmune inflammation and overcoming aberrant angiogenesis.

CIC bioGUNE
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

EXCELENCIA SEVERO OCHOA

Wednesday
January 10
Atrio 800
12.00H

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