JOSEPH F. FOSTER MEMORIAL
CHEMICAL BIOLOGY AND BIOCHEMISTRY SEMINAR

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"Context Matters: Syndecan-2 Regulates Hematopoietic Stem Cell Self-Renewal"

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Abstract:

Glycans are the most abundant and least studied macromolecule. Proteoglycans are a specific class of glycan-bearing molecules that orchestrate cellular signaling by binding growth factors to control their receptor interactions and activation. We previously discovered a unique population of adult blood stem cells (hematopoietic stem cells), that express the heparan sulfate proteoglycan, Syndecan-2, at high levels. Increased Syndecan-2 expression renders hematopoietic stem cells with increased self-renewal capacity, which is ablated upon genetic knockdown. However, the bone marrow microenvironment, or niche, is also a rich source of proteoglycans, especially Syndecan-2, suggesting interplay between hematopoietic cell-intrinsic and microenvironment-derived proteoglycans exists. In this talk, I will summarize our recent findings regarding how the cellular source of Syndecan-2 influences hematopoietic stem cell self-renewal.

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