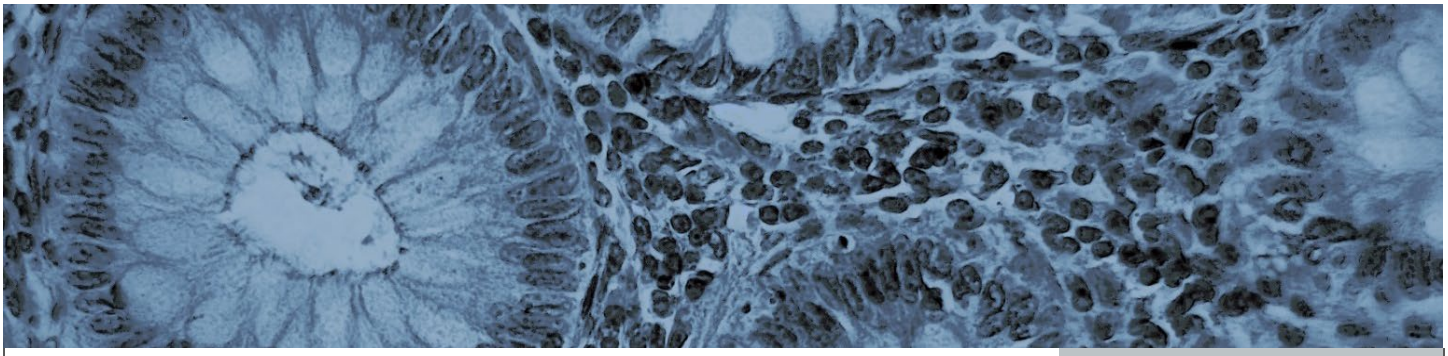

Taking the Lymphatic Route: T cell trafficking in and out of skin and melanoma

Thursday, March 25, 2021
11:30 AM to 12:30 PM
https://purdue-edu.zoom.us/j/99822915094

Non-hematopoietic cells play critical roles in regulating the infiltration, retention, function, and exit of tissue and tumor infiltrating leukocytes. While lymphatic vessels facilitate T cell priming through dendritic cell and antigen delivery to lymph nodes, they also promote regional metastasis and exert multiple immune suppressive mechanisms that maintain peripheral tolerance. Therefore, the functional role of the lymphatic vasculature in anti-tumor immune surveillance and response to immunotherapy remains complex and poorly understood. We recently made the observation that tumor-associated lymphatic vessels facilitate T cell egress/exit out of tumor microenvironments. Here we explore the interstitial trafficking behavior of CD8+ T cells and identify molecular “stay and go” signals that direct CD8+ T cell retention in skin and tumors or exit to draining lymph nodes. We present a model whereby antigen recognition acts as a molecular switch that tunes chemokine receptor expression and determines effector CD8+ T cell sensitivity to competing gradients. Our work suggests that lymphatic egress may facilitate the depletion of low affinity, but tumor-specific, CD8+ T cell clones with potential to mediate tumor control. We therefore suggest lymphatic egress as a new immune checkpoint that if targeted may potentiate intratumoral CD8+ T cell therapy.

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