Research abstract:

The goal of my research is to understand better the signal transduction events that occur following engagement of the T cell antigen receptor. Over time, my laboratory has expanded its interests to study more globally the molecular events important for immune cell development, differentiation and function, as well as a growing interest in immune dysregulation. Our initial studies focused on the CD45 tyrosine phosphatase as a positive regulator of immunoreceptor signaling. This work led naturally to an examination of the key biochemical events that occur following receptor engagement. Our approach was to identify novel regulators of signal transduction following T cell receptor ligation with studies leading to the isolation, characterization, and molecular cloning of several adapter molecules, which are critical for integration of signaling pathways. To date, my laboratory has identified 3 such molecules including SH2 domain-containing leukocyte protein of 76 kDa (SLP-76), adhesion and degranulation-promoting adapter protein (ADAP) and promyelocytic leukemia RARα-regulated adapter molecule-1 (PRAM-1). In addition to our studies of these positive regulators of immune signaling, our laboratory has also had a long standing interest in signals that interfere with activation events in T cells. This interest led to studies of FAS and FAS ligand and to the role of diacylglycerol kinases as terminators of lymphocyte activation.

Key Publications:

