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Research Interests

My laboratory studies T cell-mediated effector mechanisms of β -cell destruction in type 1 diabetes. Type 1 diabetes is an autoimmune process whereby T cells recognize pancreatic-cell antigens and initiate a leukocyte infiltrate that produces proinflammatory cytokines and reactive oxygen species (ROS), ultimately causing β -cell destruction. β -cells have a reduced capacity to scavenge ROS and are, therefore, very sensitive to their actions. My laboratory focuses on understanding how the generation of reactive oxygen intermediates (ROS) in chronic inflammation leads to pathological states in inflammatory-mediated autoimmune disease. We are also interested in how the immune system uses the generation of ROS during immune activation to synergize the innate and adaptive immune response. Understanding how ROS facilitate the activation of the immune response allows us to exploit these pathways through therapeutic intervention.

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