Immune Evasion in TB Infection

*Mycobacterium tuberculosis*, the tuberculosis (TB) bacterium, is notorious for evading the body’s immune response. John Chan, M.D., Steven Porcelli, M.D., and Michael Berney, Ph.D., have found evidence that *M. tuberculosis* evades anti-TB immunity by activating an immunosuppressive pathway controlled by the host enzyme indoleamine 2,3-dioxygenase (IDO). The National Institutes of Health (NIH) has awarded them a five-year, $4 million grant to study how immunosuppression mediated by IDO activation helps *M. tuberculosis* circumvent immune defenses. Their research could lead to interventions for better TB control. Dr. Chan is a professor of medicine and of microbiology & immunology and an attending physician in infectious disease at Montefiore; Dr. Porcelli is a professor and the chair of microbiology & immunology, a professor of medicine and the Murray and Evelyne Weinstock Chair in Microbiology & Immunology; and Dr. Berney is an assistant professor of microbiology & immunology.

Investigating Autoimmunity

The more than 70 types of autoimmune diseases occur when immune cells aberrantly attack the body’s own cells or tissues. CD8 T cells strongly contribute to the pathology seen in type 1 diabetes and many other autoimmune diseases. The NIH has awarded Teresa DiLorenzo, Ph.D., and Steven C. Almo, Ph.D., a five-year, $3.6 million grant to study the molecular interactions that occur when CD8 T cells target and damage tissue. CD8 T cells attack disease-causing microbes and tumors too, so knowledge gained from studying them should reveal information about T-cell biology in general. Dr. DiLorenzo is a professor of microbiology & immunology and of medicine and the Diane Belfer, Cypres & Endelson Families Faculty Scholar in Diabetes Research at Einstein. Dr. Almo is a professor and the chair of biochemistry, a professor of physiology & biophysics and the Wollowick Family Foundation Chair in Multiple Sclerosis and Immunology at Einstein.