

Peripheral tolerance of CD8 T cells in normal and diabetes prone mice

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Peripheral tolerance is an important part of the armamentarium of the immune system for preventing autoimmunity. CD8 T cells specific for self-antigens expressed in the periphery are normally deleted by abortive activation as they encounter antigens that are cross-presented by quiescent dendritic cells. Experiments will be presented demonstrating that persistence of antigen is important to achieve deletion and anergy of CD8 cells.

Type 1 diabetes is the result of autoimmune destruction of the insulin producing beta cells in the pancreatic islets and represents a failure on the part of the immune system to sustain peripheral tolerance. Normally, islet-antigen specific CD8 cells are deleted as a result of activation by cross-presented antigen in the pancreatic lymph nodes. We have compared the fate of CD8 T cells specific for an islet antigen in normal mice and in diabetes-prone NOD mice. Rather than undergoing deletion, the islet-antigen specific T cells accumulate in NOD mice and travel to the islets. Congenic NOD mice that are protected from diabetes because they express 2 different highly protective genetic regions from C57BL mice, *Idd3* and *Idd5*, restore deletion in the pancreatic lymph nodes. Studies on the underlying mechanism should result in the development of therapies that can prevent autoimmune diabetes.

References:

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