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Engaging regulatory pathways to control autoimmunity

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Accumulating evidence suggests that defective regulation is an essential underlying cause of autoimmunity. In the diabetes setting, the most prominent regulation is determined by the balance of pathogenic T cells and a small subset of CD4+ T lymphocytes known as regulatory T cells (Tregs) that are critical to maintaining peripheral self tolerance. This presentation will focus on general principles of regulatory T cells ability to induce immune tolerance in the autoimmune diabetes setting. Data will be presented in mouse models demonstrating the physiology of Treg development in the periphery including the identification of a novel dendritic cell subset that promotes FoxP3+ T cell differentiation. Finally, the role of PD-1/PD-L1 in T cell tolerance will be described. This work is supported by NIH grant R37 AI46643, and JDRF Center Grant # 4-2004-372.

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