CD86

CD86, also known as B7-2, is a cell surface protein that plays a critical role in the immune system. It is a member of the B7 family of co-stimulatory molecules and is primarily expressed on antigenpresenting cells (APCs), including B cells, dendritic cells, and macrophages. CD86 interacts with its ligands on T cells, specifically CD28 and CTLA-4, to regulate immune responses.

Key points about CD86 include:

Co-Stimulatory Molecule:

CD86 is a co-stimulatory molecule that provides a crucial "second signal" to T cells during the activation process. The interaction between CD86 on APCs and its ligands, CD28 on T cells, enhances T cell activation and proliferation. Expression on Antigen-Presenting Cells:

CD86 is prominently expressed on the surface of professional antigen-presenting cells, such as dendritic cells, B cells, and macrophages. Its expression is upregulated upon activation of these cells. CD86/CD28 Interaction:

The interaction between CD86 and CD28 is a key step in the co-stimulation of T cells. When CD86 on APCs binds to CD28 on T cells, it provides a co-stimulatory signal that promotes T cell activation, cytokine production, and effector functions. Role in Immune Activation:

CD86 engagement with CD28 promotes the activation and differentiation of T cells, contributing to the immune response against pathogens. This interaction is essential for the proper functioning of the adaptive immune system. Regulation of T Cell Responses:

CD86 is involved in fine-tuning immune responses. In addition to CD28, CD86 can also interact with CTLA-4 (cytotoxic T-lymphocyte-associated protein 4), which delivers an inhibitory signal, dampening T cell activation and preventing excessive immune responses. Immune Tolerance and Autoimmunity:

Dysregulation of the CD86/CD28 signaling pathway can be associated with autoimmune disorders. Abnormalities in co-stimulation may lead to inappropriate T cell activation and contribute to autoimmune responses. Therapeutic Implications:

Understanding the role of CD86 in immune responses has implications for therapeutic interventions. Modulating the CD86/CD28 interaction has been explored as a strategy in conditions such as transplantation, autoimmunity, and cancer immunotherapy. B7 Family:

CD86 is part of the B7 family, which includes other co-stimulatory and co-inhibitory molecules involved in immune regulation. The B7 family members play a crucial role in modulating immune responses to maintain homeostasis and prevent excessive activation. The interactions between CD86, CD28, and CTLA-4 are central to the regulation of T cell activation and immune responses. Research in this field continues to uncover insights into the complexities of immune regulation, leading to potential therapeutic applications in various diseases.

CD86

From: https://neurosurgerywiki.com/wiki/ - **Neurosurgery Wiki**

Permanent link: https://neurosurgerywiki.com/wiki/doku.php?id=cd86



Last update: 2024/06/07 02:55