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InnoCyto Inc.

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Anti-Human CD80 Antibody

Catalog Number:	113701, 113702
Size:	25 µg, 100 µg
Target Name:	CD80, B1, B7-1, BB1
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	2D10
Application:	Flow Cytometry
Reactivity:	Human
Format:	Purified
Isotype:	Mouse IgG1
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide
Protein Concentration:	0.5 mg/mL
Storage & Handling:	The antibody solution should be stored between 2°C and 8°C
Recommended Usage:	For flow cytometric staining, it is recommended to use less than 0.2 µg of this reagent per 0.5-1.0 million cells in a 100 µL volume. Optimal reagent performance should be determined by titration for each specific application
Isotype Control:	301401

BACKGROUND INFORMATION

Human :contentReference[oaicite:0]{index=0}, also known as B7-1, is a key co-stimulatory molecule expressed primarily on professional antigen-presenting cells such as dendritic cells, B cells, and macrophages. It plays a central role in regulating T cell activation by providing the “second signal” required for full immune activation, complementing T cell receptor (TCR) recognition of antigen.

Structurally, CD80 is a type I transmembrane glycoprotein and a member of the immunoglobulin superfamily. It consists of two extracellular immunoglobulin-like domains (one V-like and one C-like), a transmembrane region, and a short cytoplasmic tail. CD80 can form homodimers on the cell surface, which may enhance its binding avidity and functional activity during immune synapse formation.

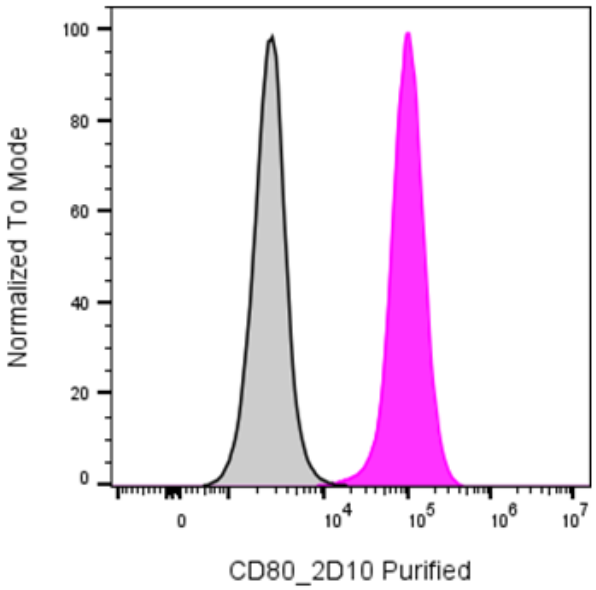
Functionally, CD80 interacts with two primary ligands on T cells: :contentReference[oaicite:1]{index=1} and :contentReference[oaicite:2]{index=2}. Binding to CD28 delivers a co-stimulatory signal that promotes T cell proliferation, cytokine production, and survival. In contrast, engagement with CTLA-4 transmits inhibitory signals that suppress T cell responses and maintain immune homeostasis. Thus, CD80 is a critical regulator balancing immune activation and inhibition.

In disease, dysregulation of CD80 expression or signaling is implicated in autoimmunity, chronic infections, and cancer.

Overactivation of CD80-CD28 signaling can contribute to autoimmune disorders, while tumors may exploit the CD80–CTLA-4 pathway to suppress anti-tumor immunity.

Therapeutically, CD80 is indirectly targeted in immunotherapy. Agents such as :contentReference[oaicite:3]{index=3} block CTLA-4, enhancing CD80/CD28-mediated T cell activation. Additionally, engineered cells expressing CD80 are being explored to boost immune responses in cancer and vaccine strategies.

PRODUCT DATA



Human Daudi cells were stained with Purified Anti-Human CD80 clone 2D10 (color-filled histogram) or an isotype control (gray histogram), followed by PE Anti-Mouse IgG.

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