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CD80 Antibody

Catalog # ASC12116

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	P33681
Other Accession	NP_005182
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Clone Names	CD80
Calculated MW	33048

Additional Information

Gene ID	941
Alias Symbol	CD80
Other Names	CD80 Antibody: CD80 molecule, B7, BB1, B7-1, B7.1, LAB7, CD28LG, CD28LG1
Reconstitution & Storage	CD80 antibody can be stored at 4˚C for three months and -20˚C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	CD80 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CD80
Synonyms	CD28LG, CD28LG1, LAB7
Function	Costimulatory molecule that belongs to the immunoglobulin superfamily that plays an important role in T-lymphocyte activation (PubMed:38467718). Acts as the primary auxiliary signal augmenting the MHC/TCR signal in naive T-cells together with the CD28 receptor which is constitutively expressed on the cell surface of T-cells (PubMed:12196291). In turn, activates different signaling pathways such as NF-kappa-B or MAPK leading to the production of different cytokines (PubMed:10438913). In addition, CD28/CD80 costimulatory signal stimulates glucose metabolism and ATP synthesis of T-cells by activating the PI3K/Akt signaling pathway (PubMed:12121659). Also acts as a regulator of PDL1/PDCD1 interactions to limit excess engagement of PDL1 and its inhibitory role in immune responses (PubMed:36727298). Expressed on B-cells, plays a critical role in regulating interactions between B-cells and T-cells in both early and late germinal center responses, which are crucial for the generation of effective humoral immune responses (By

	similarity).
Cellular Location	Cell membrane; Single-pass type I membrane protein
Tissue Location	Expressed on activated B-cells, macrophages and dendritic cells

Background

CD80, also known as B7-1, is a type I membrane protein that is a member of the immunoglobulin superfamily. Like the related protein CD86, this protein is expressed by antigen-presenting cells, and is the ligand for two proteins at the cell surface of T cells, CD28 and the cytotoxic T-lymphocyte-associated protein 4 (CTLA-4). Binding of this protein with CD28 antigen is a costimulatory signal for activation of the T-cell and induces T-cell proliferation and cytokine production. CTLA-4 binding negatively regulates T-cell activation and diminishes the immune response (1). Blocking the CTLA-4-CD80/CD86 interaction has been shown to enhance T-cell functions in acute lymphoblastomic leukemia (ALL), suggesting that this pathway may be an attractive target for future cancer immunotherapy (2).

References

Lane P. Regulation of T and B cell responses by modulating interactions between CD28/CTLA-4 and their ligands, CD80 and CD86. Ann NY Acad Sci 1997; 815:392-400.Feucht J, Kayser S, Gorodezki D, et al. T-cell responses against CD19+ pediatric acute lymphoblastic leukemia mediated by bispecific T-cell engager (BiTE) are regulated contrarily by PD-L1 and CD80/CD86 on leukemic blasts. Oncotarget 2016; 7:76902-19.