abcam

ab62636

Anti-CD80 antibody [RM80]

Key facts

Isotype	IgG2a
Host species	Rat
Storage buffer	pH: 7.4 Preservative: 0.09% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing Cd80 protein. The exact immunogen used to generate this antibody is proprietary information. Database link Q00609
Clone number	RM80
Purification technique	Affinity purification Protein G
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant.

Reactivity data

Flow Cyt

Expected

Species	Mouse
Dilution info	-
Notes	Use 10ul to label 1x10^6 cells in 100ul. ab18450 - Rat monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

IHC-Fr

Expected

Species	Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information Cd80

Function	Costimulatory molecule that belongs to the immunoglobulin superfamily that plays an important role in T-lymphocyte activation (PubMed:16339518, PubMed:1714935). Acts as the primary auxiliary signal augmenting the MHC/TCR signal in naive T-cells by acting as a ligand for the CD28 receptor which is constitutively expressed on the cell surface of T-cells (PubMed:16339518). In turn, activates different signaling pathways such as NF-kappa-B or MAPK leading to the production of different cytokines (By similarity). Also acts as an inhibitor of T-cell activation by acting as a ligand for CTLA4, a decoy receptor, thereby blocking CD28-mediated T-cell priming (By similarity). In addition, CD28/CD80 costimulatory signal stimulates glucose metabolism and ATP synthesis of T-cells by activating the PI3K/Akt signaling pathway (By similarity). Also acts as a regulator of PDL1/PDCD1 interactions to limit excess engagement of PDL1 and its inhibitory role in immune responses (By similarity). 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 (PubMed:22450810).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CD80 also known as B7-1 is a cell surface protein with a molecular weight of approximately 60 kDa. It is expressed on antigen-presenting cells such as dendritic cells macrophages and B cells. The CD80 protein plays a mechanical role in immune response modulation by providing necessary signals for T cell activation and survival. CD80 interacts with receptors CD28 and CTLA-4 on T cells serving as a costimulatory molecule important for productive immune responses.
Biological function summary	CD80 plays a significant role in the immune system's ability to distinguish between self and non-self. It belongs to the B7 family and participates in the formation of immunological synapses between T cells and antigen-presenting cells. This interaction is essential for triggering T cell proliferation and cytokine production forming a part of the adaptive immune response. CD80's expression increases in response to pathogen recognition enhancing the immune system's efficiency.
Pathways	CD80 is integral to the regulation of T cell-mediated immune responses. It is involved in the CD28 co-stimulatory pathway which is vital for T cell activation and function. In this pathway CD80 interacts with proteins like CD28 and CTLA-4 to modulate immune activation and regulate immune tolerance. The proper function of CD80 within this pathway ensures a balanced immune reaction preventing autoimmunity while allowing effective defense against pathogens.
Associated diseases and disorders	CD80 plays a role in autoimmune conditions and transplantation rejection. Its overexpression or dysregulation can contribute to diseases such as rheumatoid arthritis where it modifies T cell response and inflammation. Additionally CD80 is implicated in organ transplantation influencing graft rejection outcomes due to its role in modulating immune activation. Understanding CD80 interactions with CTLA-4 and CD28 offers insight into these conditions providing potential targets for therapeutic intervention.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.