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Anti-Human CD80 (B7-1) Antibody, Clone 2D10.4, APC

Mouse monoclonal antibody against human, rhesus CD80 (B7-1), APC-conjugated

Catalog #100-1600 | 100 Tests | 5 µL/test

Product Description

This monoclonal antibody reacts with human cluster of differentiation 80 (CD80), also known as B7-1, a 60 kDa single chain type I transmembrane glycoprotein belonging to the immunoglobulin superfamily. CD80 is expressed by activated B cells, T cells, macrophages, and dendritic cells. CD80 has high affinity for binding to two T cell receptors; CD28 and CD152 (also known as CTLA-4). The interaction of CD80 with CD28 provides a potent co-stimulatory signal for T cell activation through the CD3 complex, while its interaction with CD152 provides an inhibitory signal for T cell activation. CD80 together with CD86, another ligand of CD28 also known as B7-2, plays a major role in regulation of T cell activation. CD80 dysfunction is associated with diseases such as squamous cell carcinoma of gallbladder (SCC) and myocarditis. This antibody can also be used as a marker to assess classically activated type 1 (M1) macrophages.

Target Antigen:	CD80 (B7-1)
Alternative Names:	B7, B7-1, B7.1, BB1, CD28LG, CD28LG1, LAB7
Gene ID:	941
Species Reactivity:	Human, Rhesus
Host Species:	Mouse
Clonality:	Monoclonal
Clone:	2D10.4
Isotype:	IgG1, kappa
Immunogen:	Not determined
Conjugate:	APC (Allophycocyanin)

Applications

Verified Applications:	FC
Reported Applications:	FC
Special Applications:	This antibody clone has been verified for labeling CD80+ primary human M1 macrophages grown in ImmunoCult™-SF Macrophage Medium (Catalog #10961) containing Human Recombinant M-CSF (Catalog #78057), and then polarized with Human Recombinant IFN-gamma (Catalog #78020) and Lipopolysaccharide from E. coli (O55:B5) (Catalog #100-1270).

Abbreviations: CellSep: Cell separation; ChIP: Chromatin immunoprecipitation; FA: Functional assay; FACS: Fluorescence-activated cell sorting; FC: Flow cytometry; FCXM: Flow cytometric crossmatch assay; FISH: Fluorescence in situ hybridization; ICC: Immunocytochemistry; IF: Immunofluorescence microscopy; IHC: Immunohistochemistry; IHC-F: Immunohistochemistry (frozen-tissue); IHC-P: Immunohistochemistry (paraffin-embedded); IP: Immunoprecipitation; NMR: Nuclear magnetic resonance spectroscopy; RIA: Radioimmunoassay; WB: Western blotting

Properties

Product Formulation:	Phosphate-buffered saline, pH 7.2, containing 0.09% sodium azide and 0.1% gelatin
Purification:	The antibody was purified by affinity chromatography and conjugated with APC under optimal conditions. The solution is free of unconjugated APC.
Stability and Storage:	Product stable at 2 - 8°C when stored undiluted. Do not freeze. Protect product from prolonged exposure to light. Stable until expiry date (EXP) on label.
Directions for Use:	For flow cytometry, the suggested use of this antibody is 5 µL per 1 x 10^6 cells in 100 µL. It is recommended that the antibody be titrated for optimal performance for each application.

Related Products

For a complete list of antibodies, including other conjugates, sizes, and clones, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/antibodies, or contact us at techsupport@stemcell.com.

References

Bashuda H et al. (2005) Renal allograft rejection is prevented by adoptive transfer of anergic T cells in nonhuman primates. J Clin Invest 115(7): 1896–902.
Bromley SK et al. (2001) The immunological synapse and CD28-CD80 interactions. Nat Immunol 2(12): 1159–66.
Chen Y & Guo TL. (2019) Dietary early glycation products promote the growth of prostate tumors more than advanced glycation end-products through modulation of macrophage polarization. Mol Nutr Food Res 63(4): e1800885.
Kapp K et al. (2014) Genuine immunomodulation with dSLIM. Mol Ther Nucleic Acids 3(6): e170.
Lee J Le et al. (2022) B cell-intrinsic changes with age do not impact antibody-secreting cell formation but delay B cell participation in the germinal centre reaction. Aging Cell 21(9): e13692.
Linsley PS et al. (1994) Human B7-1 (CD80) and B7-2 (CD86) bind with similar avidities but distinct kinetics to CD28 and CTLA-4 receptors. Immunity 1(9): 793–801.
Linsley PS et al. (1996) Intracellular trafficking of CTLA-4 and focal localization towards sites of TCR engagement. Immunity 4(6): 535–43.
Lorenzetti R et al. (2019) Abatacept modulates CD80 and CD86 expression and memory formation in human B cells. J Autoimmun 101: 145–52.
Murugesan G et al. (2022) Quantitative proteomics of polarised macrophages derived from induced pluripotent stem cells. Biomedicines 10(2): 239.
Vandenborre K et al. (1999) Interaction of CTLA-4 (CD152) with CD80 or CD86 inhibits human T cell activation. Immunology 98(3): 413–21.