Human 4-1BB/TNFRSF9/CD137 Antibody

Monoclonal Mouse IgG_{2B} Clone # 145501

Catalog Number: MAB838

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human 4-1BB/TNFRSF9/CD137 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse (rm) 4-1BB, recombinant human (rh) CD27, rmCD27, rhCD30, rmCD30, rhCD40, rmCD40, rhDR3, rhDR6, rhEDAR, rmEDAR, rhFas, rmFas, rhGITR, rmGITR, rhHVEM, rhLTRβ, rmLTRβ, rhNGFR, rhOPG, rmOPG, rhRANK, rmRANK, rhTAJ, rhTNF RI, rmTNF RI, rhTNF RII, or rmTNF RII is observed.
Source	Monoclonal Mouse IgG_{2B} Clone # 145501
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human 4-1BB/TNFRSF9/CD137 Leu24-Gln186 Accession # Q07011
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

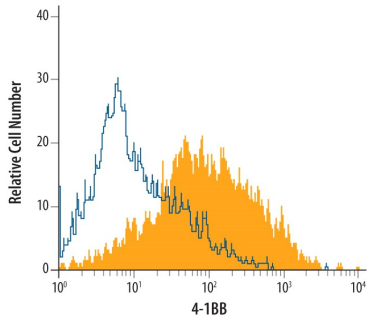
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1 µg/mL	Recombinant Human 4-1BB/TNFRSF9/CD137 Fc Chimera (Catalog # 838-4B)
Flow Cytometry	2.5 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA

Flow Cytometry



Detection of 4-1BB/TNFRSF9/CD137 in Human $CD3^+$ PBMCs by Flow Cytometry. Human $CD3^+$ peripheral blood mononuclear cells were treated for 48 hours with 5 µg/mL PHA then stained with Mouse Anti-Human 4-1BB/TNFRSF9/CD137 Monoclonal Antibody (Catalog # MAB838, filled histogram) or isotype control antibody (Catalog # MAB0041, open histogram), followed by Allophycocyanin-conjugated Anti-Mouse IgG $F(ab')_2$ Secondary Antibody (Catalog # F0101B).

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

4-1BB is an inducible T cell surface protein belonging to the TNF receptor superfamily. It is alternatively known as TNFRSF9, CD137, and ILA. The 255 amino acid human 4-1BB is a type I transmembrane protein having in its extracellular domain four of the cysteine-rich motifs that are characteristic of the TNF receptor superfamily. The 30 KD glycoprotein exists both as a monomer and as a dimer on T cells. The human and mouse proteins share 60% amino acid identity. 4-1BB is absent from naive T cells, but it is upregulated and continually expressed following T cell activation. The natural ligand, 4-1BBL, is a member of the TNF superfamily and is expressed on activated antigen presenting cells including dendritic cells, macrophages, and B cells. Cross-linking of 4-1BB by 4-1BBL or by agonistic antibodies transmits a potent co-stimulatory signal that enhances the effect of other activating signals such as PHA or anti-CD3 antibodies. 4-1BB signals through the TFAF2-NIK pathway resulting in activation of NF-κB and ultimately promoting proliferation and survival of T cells.

References:

1. Vinay, D. and B. Kwon (1998) Semin. Immunol. **10**:481.
2. Sica, G. and L. Chen (2000) Adv. Exp. Med. Biol. **465**:355.

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