

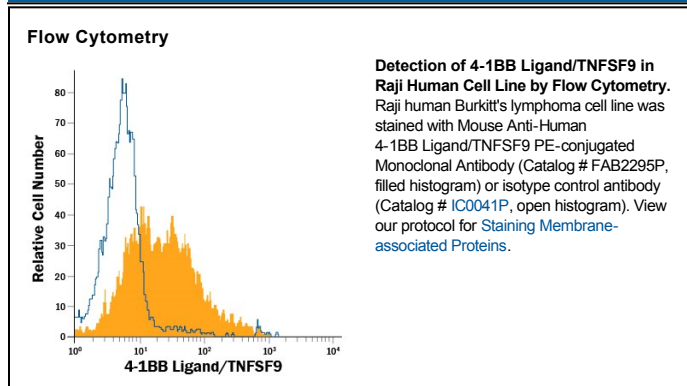
DESCRIPTION	
Species Reactivity	Human
Specificity	Detects human 4-1BB Ligand/TNFSF9 in direct ELISAs and Western blots. In Western blots, no cross-reactivity with recombinant mouse (rm) 4-1BB Ligand, recombinant human (rh) APRIL, rhBAFF, rmEDA-A2, rhFas Ligand, rhGITR Ligand, rhLIGHT, rhLymphotoxin $\alpha 1/\beta 2$, rhLymphotoxin $\alpha 2/\beta 1$, rhOX40 Ligand, rhTNF- α , rhTRAIL, rhTRANCE, or rhTWEAK is observed.
Source	Monoclonal Mouse IgG _{2B} Clone # 282220
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human 4-1BB Ligand/TNFSF9 Arg71-Glu254 Accession # P41273.1
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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
Flow Cytometry	10 μ L/10 ⁶ cells	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

4-1BB Ligand (4-1BBL; also CD137L) is a 32 kDa type II transmembrane protein that belongs to the TNF superfamily (TNFSF) of molecules (1-4). The human 4-1BBL cDNA encodes a 254 amino acid (aa) protein that contains a 25 aa N-terminal cytoplasmic domain, a 23 aa transmembrane segment, and a 206 aa C-terminal extracellular region (5). The extracellular domain (ECD) of 4-1BBL has a jelly-roll, β -sandwich tertiary structure that is similar to other TNFSF members. There is only one cysteine in the human ECD, and no potential N-linked glycosylation sites. The potential exists, however, for O-linked glycosylation. The human 4-1BBL ECD shares 32% and 35% aa identity with mouse and rat ECD, respectively. In the cytoplasmic domain, human 4-1BBL is 55 aa shorter than the equivalent region in rodents. 4-1BBL is expressed by activated B cells, macrophages, dendritic cells, activated T cells, neurons and astrocytes (2, 3, 6). A bioactive 26 kDa soluble form of 4-1BBL, presumably generated by MMP cleavage, occurs in humans (4). Human 4-1BBL signals through both CD137/4-1BB and itself. Its cytoplasmic tail participates in reverse signaling that induces apoptosis in T cells and cytokine secretion (IL-6; TNF- α) by monocytes (7, 8). 4-1BBL binding to CD137/4-1BB produces a number of effects. It seems to play a key role in the T cell recall response. It maintains T cell numbers at the end of a primary response, and induces CD4⁺ and CD8⁺ T cells to proliferate and secrete cytokines such as IL-2 and IFN- γ in CD4⁺ T cells, and IFN- γ in CD8⁺ T cells (9, 10).

References:

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