

#### DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse 4-1BB Ligand/TNFSF9 in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human RELT is observed.
<b>Source</b>	Monoclonal Rat IgG <sub>2B</sub> Clone # 203942
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant mouse 4-1BB Ligand/TNFSF9 Arg104-Glu309 Accession # P41274
<b>Conjugate</b>	Alexa Fluor 350 Excitation Wavelength: 346 nm Emission Wavelength: 442 nm
<b>Formulation</b>	Supplied 0.2 mg/mL 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
<b>Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	A20 mouse B cell lymphoma cell line

#### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> ● 12 months from date of receipt, 2 to 8 °C as supplied.

#### BACKGROUND

4-1BB ligand (4-1BBL) is a type II transmembrane glycoprotein belonging to the TNF superfamily (TNFSF) and has been designated TNFSF9. Mouse 4-1BBL cDNA encodes a 309 amino acid residues (aa) protein with an 82 aa N-terminal cytoplasmic domain, a 21 aa transmembrane domain and a 206 aa C-terminal extracellular domain. The extracellular domain of 4-1BBL has a tertiary structure similar to that of other TNFSF members, but shares only low aa sequence homology (14-16%). Murine 4-1BBL shares 36% aa sequence identity with its human counterpart (1, 2). 4-1BBL is predominantly expressed on activated antigen presenting cells (APCs) such as B cells, macrophages and dendritic cells (DCs). It is also expressed on most T and B lymphoma cell lines (3). A soluble 4-1BBL is released from the cell surface following cellular activation via proteolytic cleavage by one or more sheddases (4). By analogy to other TNFSF ligands, both the soluble and transmembrane 4-1BBL are expected to exist as non-covalent homotrimers. 4-1BBL binds 4-1BB, a TNF receptor superfamily member, TNFRSF9, which is also known as CD137 and ILA (induced by lymphocyte activation). 4-1BB is expressed on activated CD4<sup>+</sup> and CD8<sup>+</sup> T cells, thymocytes, and NK cells. It is also expressed on monocytes, neutrophils, DCs and eosinophils. In response to 4-1BBL binding, 4-1BB transduces a T cell costimulatory signal in both CD4<sup>+</sup> and CD8<sup>+</sup> T cells to promote survival and enhance proliferation, cytokine production and effector function. In dendritic cells, 4-1BB is a DC-activating molecule that enhances cytokine production and upregulates expression of B7-1 and B7-2 costimulatory molecules (3).

#### References:

1. Goodwin, R.G. *et al.* (1993) *Eur. J. Immunol.* **23**:2631.
2. Alderson, M.R. *et al.* (1994) *Eur. J. Immunol.* **24**:2219.
3. Kwon, B., H.W. Lee and B.S Kwon (2002) *TRENDS in Immunology* **23**:378.
4. Salih, H.R. *et al.* (2001) *J. Immunol.* **167**:4059.

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