

DESCRIPTION

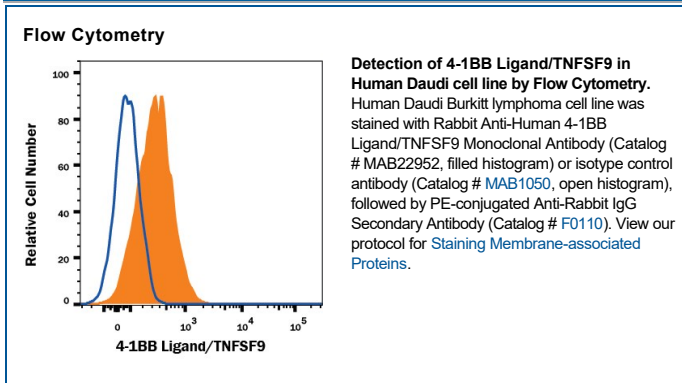
Species Reactivity	Human
Specificity	Detects human 4-1BB Ligand/TNFSF9 in direct ELISA.
Source	Recombinant Monoclonal Rabbit IgG Clone # 2357A
Purification	Protein A or G purified from cell culture supernatant
Immunogen	<i>E. coli</i> -derived human 4-1BB Ligand/TNFSF9 Arg71-Glu254 Accession # P41273.1
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
Flow Cytometry	0.25 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



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. <ul style="list-style-type: none"> • 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 Ligand (4-1BBL), also known as CD137L, is a type II transmembrane protein that belongs to the TNF superfamily of molecules and plays an important role in immune response activation (1). The 38 kDa human 4-1BB Ligand consists of an 25 aa cytoplasmic domain, a 23 aa transmembrane segment, and a 206 aa extracellular domain (ECD) (2). Within the ECD, human 4-1BB Ligand shares 34% aa sequence identity with mouse and rat 4-1BB Ligand. 4-1BB Ligand is expressed by activated B cells, monocytes, macrophages, dendritic cells (DC), T cells, lymphoma and multiple myeloma cells, hematopoietic stem cells, early myeloid progenitors, neurons, and astrocytes (3-9). A 26 kDa soluble form of 4-1BB Ligand can be released from the surface of activated cells and retains bioactivity (10). 4-1BB Ligand binds to 4-1BB/TNFRSF9/CD137 on activated CD4⁺ and CD8⁺ T cells, thymocytes, and NK cells as well as on monocytes, neutrophils, DC, and eosinophils. In response to 4-1BB Ligand binding, 4-1BB transduces a co-stimulatory signal that promotes the proliferation, activation, and survival of CD4⁺ and CD8⁺ T cells (4, 11, 12). T cell co-stimulation through CD28 is important for the initial T cell expansion, while 4-1BB acts later in the response (12, 13). 4-1BB Ligand function supports the survival and responsiveness of memory T cells during viral infection (13-15). Reverse signaling through 4-1BB Ligand on monocytes induces the production of inflammatory cytokines (5). On macrophages, 4-1BB Ligand associates in cis with TLR4 and enhances inflammatory cytokine production in response to TLR4 ligation (6). Its expression on early myeloid progenitor cells limits the development of dendritic cells, monocytes, and B cells (9).

References:

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