4-1BBL/TNFSF9 Trimer Protein, Human (Biotinylated, HEK293, Fc)

Cat. No.:	HY-P78069
Synonyms:	41BB Ligand; 4-1BB Ligand; 4-1BBL; CD137L; TNFSF9
Species:	Human
Source:	HEK293
Accession:	P41273 (R71-E254)
Gene ID:	8744
Molecular Weight:	Approximately 84.3 kDa

PROPERTIES

Biological Activity	Immobilized Human 4-1BB, hFc Tag at 0.5 μg/mL (100 μl/Well) on the plate. Dose response curve for Biotinylated Human 4-1BB Ligand (Trimer) , hFc Tag with the EC_{50} of ≤27.1 ng/mL determined by ELISA.
Appearance	Lyophilized powder
Formulation	Lyophilized from 0.22 μm filtered solution in PBS, 100mM L-arginine (pH 7.4). Normally 8% trehalose is added as protectant before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

4-1BBL is expressed on a variety of antigen presenting cells (APCs), including activated B cells, dendritic cells, macrophages, and myeloid cells[1].
The amino acid sequence of human 4-1BBL protein has low homology for mouse and rat 4-1BBL protein.
4-1BBL binds to high-affinity 4-1BB, resulting in the recruitment of intracellular TRAF adaptor molecules (TRAF1 and TRAF2), and then activate of NF-jB and the extracellular signal regulated kinase (ERK), c-Jun N-terminal kinase (JNK) and p38 mitogen-associated protein (MAP) kinase signaling cascades. The binding of 4-1BBL to 4-1BB generates strong co-stimulatory signals in T-cells that lead to up-regulation of anti-apoptotic molecules, cytokine secretion, and enhanced effector function[2].
4-1BBL is a member of the TNF family of proteins. 4-1BBL is an immunostimulant molecule that interacts with the 4-1BB high-affinity receptor during the antigen presentation, providing costimulatory signals to both CD4+ and CD8+ T cells through the activation of NF-kB, c-Jun, and p38 downstream pathways, triggering pleiotropic effects on the immune system [4]. 4-1BBL significantly induces T cell proliferation and increases the stimulation of both IL-2 and IFN-γ[5].

REFERENCES

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[2]. Bitra A, et al. Crystal structure of the m4-1BB/4-1BBL complex reveals an unusual dimeric ligand that undergoes structural changes upon 4-1BB receptor binding. J Biol Chem. 2019 Feb 8;294(6):1831-1845.

[3]. Meseck M, et al. A functional recombinant human 4-1BB ligand for immune costimulatory therapy of cancer. J Immunother. 2011 Mar;34(2):175-82.

[4]. Martinez-Perez AG, et al. 4-1BBL as a Mediator of Cross-Talk between Innate, Adaptive, and Regulatory Immunity against Cancer. Int J Mol Sci. 2021 Jun 9;22(12):6210.

[5]. Salih HR, et al. Soluble CD137 (4-1BB) ligand is released following leukocyte activation and is found in sera of patients with hematological malignancies. J Immunol. 2001 Oct 1;167(7):4059-66.

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