4-1BBL/TNFSF9 Protein, Cynomolgus (HEK293, Fc)

Cat. No.:	HY-P77287
Synonyms:	Tumor necrosis factor ligand superfamily member 9; CD137L; 4-1BB Ligand
Species:	Cynomolgus
Source:	HEK293
Accession:	XP_015296398 (R68-E251)
Gene ID:	102129676
Molecular Weight:	Approximately 47.8 kDa.

PROPERTIES

Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants 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

[1]. Li Y, et al. Limited Cross-Linking of 4-1BB by 4-1BB Ligand and the Agonist Monoclonal Antibody Utomilumab. Cell Rep. 2018 Oct 23;25(4):909-920.e4.

[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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