

4-1BB/TNFRSF9 Protein, Mouse (HEK293, Fc, solution)

Cat. No.:	HY-P7447
Synonyms:	rMu4-1BB/TNFRSF9, C-Fc; CD137; 4-1 BB; TNFRSF-9
Species:	Mouse
Source:	HEK293
Accession:	P20334 (V24-L187)
Gene ID:	21942
Molecular Weight:	60-70 kDa

PROPERTIES

AA Sequence	<p>V Q N S C D N C Q P G T F C R K Y N P V C K S C P P S T F S S I G G Q P N C N I</p> <p>C R V C A G Y F R F K K F C S S T H N A E C E C I E G F H C L G P Q C T R C E K</p> <p>D C R P G Q E L T K Q G C K T C S L G T F N D Q N G T G V C R P W T N C S L D G</p> <p>R S V L K T G T T E K D V V C G P P V V S F S P S T T I S V T P E G G P G G H S</p> <p>L Q V L</p>
Appearance	Solution.
Formulation	Supplied as a 0.2 µm filter solution of 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background	<p>4-1BB, is encoded by TNFRSF9 (CD137, ILA), belongs to tumor necrosis factor (TNF) receptor superfamily. 4-1BB is a surface glycoprotein, expressed in a variety of cells, for example, T cells, B cells, natural killer (NK) cells, dendritic (DCs), eosinophils, and mast cells; even a variety of tumor cells such as human leukemia cells. It is widely spread in vascular smooth muscles, tumor vessel walls, and liver tissue of hepatocellular carcinoma. 4-1BB has a preference on CD8+ cells rather than CD4+ cells. It provides co-stimulatory signals and activates cytotoxic effects of CD8+ T cells and helps to form memory T cells. Finally, it promotes the immune system fighting against tumors. Moreover, CD137 binds CD137L to signal monocytes, increase their survival, proliferation and stimulate their migration and extravasation. In addition, it induces the release of various proinflammatory factors, leads to the influx of inflammatory monocytes into tissues and form an inflammatory</p>
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environment^[1]. Specifically, CD137 promotes the migration of monocytes/macrophages to tumor microenvironment by upregulating the expression of Fra1. It also promoted the differentiation of monocytes/macrophages into osteoclasts at the same time, thus providing a favorable microenvironment for the colonization and growth of breast cancer cells in bone. It provides a promising therapeutic strategy for metastasis of breast cancer^[2]. Furthermore, CD137 signaling promotes endothelial cells (ECs) apoptosis through prooxidative and proinflammatory mechanisms, mediated by Nrf2 and NF-κB pathways, respectively^[3]. The homology of 4-1BB protein in human and mouse was low, and the sequence similarity was 56.75%.

REFERENCES

- [1]. Ye L, et al. CD137, an attractive candidate for the immunotherapy of lung cancer. *Cancer Sci.* 2020 May;111(5):1461-1467.
- [2]. Jiang P, et al. CD137 promotes bone metastasis of breast cancer by enhancing the migration and osteoclast differentiation of monocytes/macrophages. *Theranostics.* 2019 May 9;9(10):2950-2966.
- [3]. Geng T, et al. CD137 Signaling Promotes Endothelial Apoptosis by Inhibiting Nrf2 Pathway, and Upregulating NF-κB Pathway. *Mediators Inflamm.* 2020 Jun 6;2020:4321912.
- [4]. Pauly S, et al. CD137 is expressed by follicular dendritic cells and costimulates B lymphocyte activation in germinal centers. *J Leukoc Biol.* 2002 Jul;72(1):35-42.
- [5]. Dass S Vinay, et al. 4-1BB (CD137), an Inducible Costimulatory Receptor, as a Specific Target for Cancer Therapy. *BMB Rep.* 2014 Mar;47(3):122-9.
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