

# Recombinant Human TNFSF9 protein, His-tagged, low endotoxin

**Cat. No.** TNFSF9-232H    **Lot. No.** (See product label)

## SPECIFICATION

### Product Overview

Recombinant Human TNFSF9 protein (Leu24-Gln186), fused to His tag at C-terminus, was expressed in human 293 cells (HEK293).

### Species

Human

### Source

HEK293

### ProteinLength

163

### Description

4-1BB is also known as CD137, tumor necrosis factor receptor superfamily member 9 (TNFRSF9), induced by lymphocyte activation (ILA), is a co-stimulatory molecule of the tumor necrosis factor (TNF) receptor superfamily. CD137 can be expressed by activated T cells, but to a larger extent on CD8 than on CD4 T cells. In addition, CD137 expression is found on dendritic cells, follicular dendritic cells, natural killer cells, granulocytes and cells of blood vessel walls at sites of inflammation. The best characterized activity of CD137 is its costimulatory activity for activated T cells. Crosslinking of CD137 enhances T cell proliferation, IL-2 secretion survival and cytolytic activity. Further, it can enhance immune activity to eliminate tumors in mice. CD137 can enhance activation-induced T cell apoptosis when triggered by engagement of the TCR/CD3 complex. In addition, 4-1BB/4-1BBL co-stimulatory pathway has been shown to augment secondary CTL responses to several viruses, and meanwhile augment anti-tumor immunity. 4-1BB thus is a promising candidate for immunotherapy of human cancer. CD137 has been shown to interact with TRAF2.

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<b>Form</b>	Lyophilized from 0.22 um filtered solution in PBS, pH7.4, 10% trehalose.
<b>Molecular Mass</b>	The protein has a calculated MW of 19.2 kDa. The protein migrates as 28-35 kDa under reducing (R) condition (SDS-PAGE) due to glycosylation.
<b>Endotoxin</b>	Less than 0.01 EU per ug by the LAL method.
<b>Purity</b>	>90% as determined by SDS-PAGE.
<b>Storage</b>	<p>For long term storage, the product should be stored at lyophilized state at -20 centigrade or lower.</p> <p>Please avoid repeated freeze-thaw cycles.</p> <p>This product is stable after storage at:</p> <ul style="list-style-type: none"> <li>-20 centigrade to -70 centigrade for 12 months in lyophilized state;</li> <li>-70 centigrade for 3 months under sterile conditions after reconstitution.</li> </ul>
<b>Reconstitution</b>	It is recommended that sterile water be added to the vial to prepare a stock solution of 0.2 ug/ul. Centrifuge the vial at 4°C before opening to recover the entire contents.

## GENE INFORMATION

<b>Gene Name</b>	TNFSF9
<b>Official Symbol</b>	TNFSF9
<b>Synonyms</b>	TNFSF9; tumor necrosis factor (ligand) superfamily, member 9; tumor necrosis factor ligand superfamily member 9; 4 1BB L; homolog of mouse 4 1BB L; receptor 4 1BB ligand; 4-1BBL; 4-1BB ligand; receptor 4-1BB ligand; homolog of mouse 4-1BB-L; CD137L; 4-1BB-L
<b>Gene ID</b>	8744

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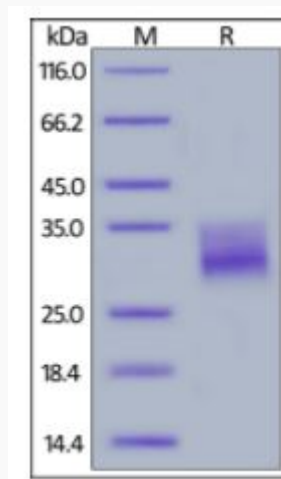
mRNA Refseq [NM\\_003811](#)

Protein Refseq [NP\\_003802](#)

MIM [606182](#)

UniProt ID [P41273](#)

**SDS-PAGE of  
TNFSF9-232H**



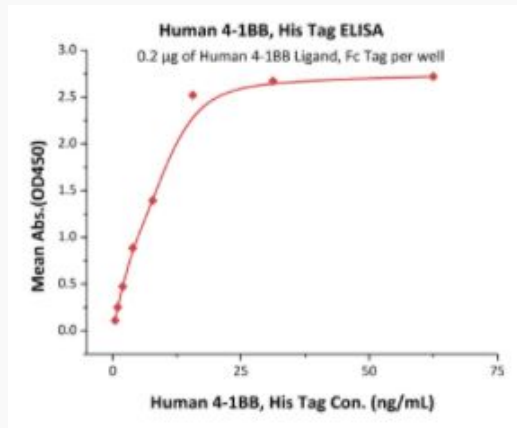
Human 4-1BB, low endotoxin on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 90%.

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**Bioactivity-ELISA of  
TNFSF9-232H**



Immobilized Human 4-1BB Ligand, Fc Tag at 2 µg/mL (100 µL/well) can bind Human 4-1BB, His Tag, low endotoxin with a linear range of 0.5-16 ng/mL (QC tested).

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