

## Recombinant Mouse TNFRSF9 protein, Fc-tagged

**Cat. No.** TNFRSF9-347M    **Lot. No.** (See product label)

### SPECIFICATION

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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| <b>Product Overview</b> | Recombinant Mouse TNFRSF9 protein (Val24-Leu211), fused to human IgG1 Fc tag at C-terminus, was expressed in human 293 cells (HEK293).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Species</b>          | Mouse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Source</b>           | HEK293                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>ProteinLength</b>    | 188                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Description</b>      | <p>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.</p> |

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|                       |                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Form</b>           | Lyophilized from 0.22 um filtered solution in Tris with Glycine, Arginine and NaCl, pH7.5, 10% trehalose.                                                                                                                                                                                                                                                                  |
| <b>Molecular Mass</b> | The protein has a calculated MW of 46.7 kDa. The protein migrates as 50-66 kDa under reducing (R) condition (SDS-PAGE).                                                                                                                                                                                                                                                    |
| <b>Endotoxin</b>      | Less than 1.0 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> <p>-20 centigrade to -70 centigrade for 12 months in lyophilized state;</p> <p>-70 centigrade for 3 months under sterile conditions after reconstitution.</p> |
| <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>       | TNFRSF9                                                                                                                                                                                                                                                                    |
| <b>Official Symbol</b> | TNFRSF9                                                                                                                                                                                                                                                                    |
| <b>Synonyms</b>        | TNFRSF9; tumor necrosis factor receptor superfamily, member 9; tumor necrosis factor receptor superfamily member 9; CD137 antigen; T-cell antigen 4-1BB; 4-1BB ligand receptor; secreted CD137 antigen; ILA; Ly63; 4-1BB; Cd137; CDw137; AA408498; AI325004; A930040I11Rik |

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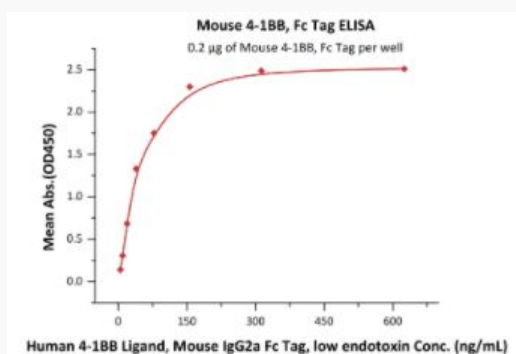
**Gene ID** 21942

**mRNA Refseq** NM\_001077508

**Protein Refseq** NP\_001070976

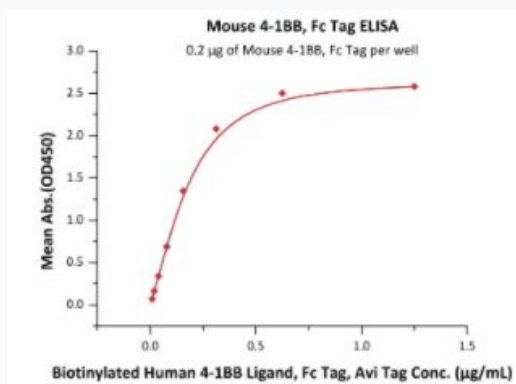
**UniProt ID** Q8R037

**Bioactivity-ELISA of  
TNFRSF9-347M**



Immobilized Mouse 4-1BB, Fc Tag at 2 µg/mL (100 µL/well) can bind Human 4-1BB Ligand, Mouse IgG2a Fc Tag, low endotoxin with a linear range of 5-78 ng/mL (QC tested).

**Bioactivity-ELISA of  
TNFRSF9-347M**



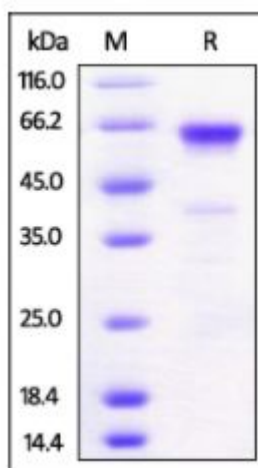
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Immobilized Mouse 4-1BB, Fc Tag at 2 µg/mL (100 µL/well) can bind Biotinylated Human 4-1BB Ligand, Fc Tag, Avi Tag with a linear range of 0.01-0.156 µg/mL (Routinely tested).

**SDS-PAGE of  
TNFRSF9-347M**



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