Human 4-1BB ECD (Extracellular Domain), Fc-fusion, Recombinant

**Background:**
4-1BB, also known as CD137, ILA and TNFRSF9, is a single-pass type I transmembrane glycoprotein of the TNF receptor superfamily (TNFRSF). 4-1BB is expressed as a disulfide-linked homodimer on activated T cells. 4-1BB is absent from naïve T cells, but its expression is induced by lymphocyte activation. 4-1BB is the receptor for 4-1BB ligand/TNFSF9, which is expressed on antigen-presenting cells such as macrophages and activated B cells. 4-1BB mediated signaling pathway contributes to the proliferation, survival, and development of T cells. 4-1BB can also promote proliferation in peripheral monocytes, enhance T cell apoptosis triggered by TCR-CD3 activation, and regulate CD28 co-stimulation to promote Th1 cell responses. 4-1BB deficient mice show augmented T cell activation. 4-1BB and its ligand are also expressed in different human tumor tissues. 4-1BB activation by crosslinking with its ligand or agonistic antibody enhances cytotoxic T cell and NK cell mediated anti-tumor immunity. 4-1BB can interact with OX40 on activated T cells, forming a complex that responds to either ligand and inhibits Treg and CD8+ T cell proliferation. 4-1BB may also be involved in the development of inflammation in high fat diet-induced metabolic syndrome. The soluble form of 4-1BB circulates at elevated levels in the serum of rheumatoid arthritis.

**References:**

**Construct Detail:**
The recombinant human 4-1BB-Fc fusion is expressed as a 390 amino acid protein consisting of Leu24 - Gln186 region of 4-1BB (UniProt accession #Q07011) and a C-terminal Fc from human IgG1, which exists as a dimer/tetramer under non-reducing conditions (see the gel image inserted).

**Source:**
Human cells stably expressing 4-1BB-Fc and growing in chemical-defined media with no animal component or antibiotics.

**M.W.:**
Calculated molecular mass 42.8 kDa; estimated by SDS-PAGE under reducing condition 55-60 kDa probably due to glycosylation. Calculated extinction coefficients (M-1 cm-1, at 280nm): 42535.

**Purity:**
>95% judged by SDS-PAGE under reducing condition (see the gel image inserted).

**Formulation:**
Supplied at 0.5 mg/ml in sterile PBS pH7.4 (concentration determined by UV spectrometry and verified by SDS-PAGE and Coomassie blue staining).

**Endotoxin:**
<0.1 EU per 1 µg of purified recombinant protein determined by the LAL method.

**Bioactivity:**
Binds to its ligand human 4-1BBL and anti-4-1BB monoclonal antibodies (SKU#MAB1829) with high affinity by ELISA. Blocks 4-1BBL/4-1BB-induced signaling activity.

**Storage:**
The product is shipped at 4°C. Upon receipt, centrifuge the product briefly before opening the vial. Store small aliquots at the temperature below -20°C for long-term storage and the product is stable for 3 months. Avoid repeated freeze-thaw cycles.

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