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1. Description

Products	Human CD137 (4-1BB)-Ligand, research grade. Recombinant human CD137 (4-1BB)-Ligand.						
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5	130-105-768						
20	130-105-767						
Biological activity	The ED ₅₀ is ≤10 ng/mL corresponding to an activity of ≥1×10 ⁵ U/mg. ▲ Note: The ED ₅₀ is determined by secretion of IL-8 by human PBMC.						
Primary structure	Single non-glycosylated polypeptide chain with N-terminal methionine (185 amino acid residues).						
Molecular mass	19.6 kDa.						
Source	Produced in <i>E. coli</i> .						
Product format	Lyophilized from a filtered (0.2 µm) buffer solution.						
Stabilizer	None.						
Purity	>97% as determined by SDS-PAGE analysis.						
Endotoxin level	Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.						
Storage	Lyophilized Human CD137 (4-1BB)-Ligand, research grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C or below. Avoid repeated freeze-thaw cycles.						
Reconstitution	It is recommended to reconstitute lyophilized Human CD137 (4-1BB)-Ligand, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 50 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.						

1.1 Background information

CD137-Ligand, also known as 4-1BB-Ligand or TNFRSF9-Ligand, is the natural agonist of the CD137 receptor, and a member of the TNF superfamily. CD137-Ligand is expressed on antigen

presenting cells, such as dendritic cells, B cells, and macrophages. The binding of CD137-Ligand to its receptor plays a central role in co-stimulation of T cells by antigen presenting cells, and it is required for development of memory T cells. CD137-Ligand is studied for its role in the activation of immune response against infections and cancer, and for its involvement in autoimmunity. CD137-Ligand exists as a membrane-bound and a soluble form resulting from proteolytic cleavage of the extracellular domain. Like other Ligands from the TNFSF family, active CD137-Ligand is expected to form a non-covalent homotrimer.

1.2 Applications

Human CD137 (4-1BB)-Ligand can be used for a variety of applications including:

- *In vitro* costimulation of T cells for optimal activation, expansion, or memory formation.
 - Investigation of CD137/CD137-Ligand intracellular signaling.
- Optimal concentration for a specific application should be determined by a dose-response experiment.

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