Recombinant Human TRAIL/TNFSF10

Catalog Number: 375-TEC/CF

DESCRIPTION

Source	*E. coli*-derived Val114-Gly281, with and without an N-terminal Met Accession # Q6IBA9
N-terminal Sequence Analysis	Val114
Structure / Form	Homotrimer
Predicted Molecular Mass	19 kDa (monomer)

SPECIFICATIONS

Activity	Measured in a cytotoxicity assay using L-929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. Matthews, N. and M.L. Neale (1987) in Lymphokines and Interferons, A Practical Approach. Clemens, M.J. *et al.* (eds): IRL Press. 221. The ED_{50} for this effect is 0.5-6 ng/mL. ***Note:*** *This is one of multiple forms available for this protein. Check R&D Systems' website,* ***www.RnDSystems.com****, for a complete listing of the variants.*
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in Tris, $(NH_4)_2SO_4$ and $ZnSO_4$. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 2 weeks, 2 to 8 °C under sterile conditions after reconstitution. ● 1 month, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

TRAIL (TNF-related apoptosis-inducing ligand), also known as APO-2 ligand and TNFSF10, is a type II transmembrane protein with a carboxy-terminal extracellular domain which exhibits homology to other TNF family members. In the TNF superfamily nomenclature, TRAIL is referred to as TNFSF10. Human TRAIL cDNA encodes a 281 amino acid (aa) residue protein with an amino-terminal intracellular domain of 17 residues and a predicted internal hydrophobic domain between residues 18 and 38. The extracellular carboxy-terminal domain contains a potential N-linked glycosylation site at amino acid residue 109. Among TNF family members, TRAIL is the most homologous to Fas ligand, sharing 28% aa sequence identity in their extracellular domains. Mouse TRAIL has also been cloned. The human TRAIL shares 65% aa sequence identity with mouse TRAIL and is active on mouse cells. Both membrane bound and soluble TRAIL have been shown to induce rapid apoptosis of many transformed cell lines. Like most TNF family members, the bioactive TRAIL exists as a homotrimer. TRAIL transcripts have been shown to be constitutively expressed in a variety of human tissues. A family of TRAIL receptors, including two receptors that transduce the apoptotic signals and two TRAIL decoy receptors that function to antagonize TRAIL-induced apoptosis, have been identified (1 - 3). Osteoprotegerin has been identified as a fifth TRAIL receptor (4). It was shown that homotrimeric TRAIL binds a zinc ion which is critical for the correct structure of the protein (5 - 6).

References:

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2. Wiley, S.R. *et al.* (1995) Immunity **3**:673.
3. Pitti, R.M. *et al.* (1996) J. Biol. Chem. **271**:12687.
4. Emery, J. *et al.* (1998) J. Biol. Chem. **273**:14363.
5. Bodmer, J.L. *et al.* (2000) J. Biol. Chem. **275**:20632.
6. Hymowitz, S.G. *et al.* (2000) Biochemistry **39**:633.

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