TRAIL
Human, Recombinant
Expressed in NS0 mouse myeloma cells

Product Number T 5694
Storage Temperature - 20 °C

Synonyms: TNF-Related Apoptosis-Inducing Ligand , TNFSF10, Apo-2 ligand, Apo-2L

Product Description
The extracellular domain of human TRAIL (Thr95–Gly281) having a histidine tag at the amino terminus was expressed in a mouse myeloma cell line, NS0.

TRAIL is a type II transmembrane protein with a carboxy-terminal extracellular domain that exhibits homology to other TNF family members. In the new TNF family nomenclature, TRAIL is referred to as TNFSF10. Human TRAIL is a protein composed of 281 amino acid residues 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 the receptor-binding domain and a potential N-linked glycosylation site at amino acid residue 109.

Human TRAIL shares about 65% amino acid sequence homology with mouse TRAIL and is active on mouse cells. Recombinant human TRAIL can be injected into mice without toxic side effects. Both membrane-bound and soluble TRAIL have been shown to induce the rapid apoptosis of many transformed cell lines but not of normal cells.2,3

Like most TNF family members, bioactive TRAIL is a non-disulfide-linked homotrimer. Constitutive expression of TRAIL transcripts occurs in a variety of human tissues. TRAIL is a ligand for two death domain-containing receptors, TRAIL-R1 (DR4) and TRAIL-R2 (DR5) that transduce the apoptotic signals. These receptors are members of the TNF receptor family that also includes FAS and TNFR. TRAIL also binds to three decoy receptors that antagonize TRAIL-induced apoptosis. An adenovirus protein, RID, has been shown to inhibit TRAIL-induced apoptosis. This apoptosis inducer is thought to be regulated by the transcription factor NF-κB.7

Reagent
Recombinant human TRAIL is lyophilized from a 0.2 µm-filtered solution in phosphate-buffered saline containing 50 µg bovine serum albumin per 1 µg TRAIL.

Precautions and Disclaimer
For laboratory use only. Not for drug, household or other uses. Please consult the Material Safety Data Sheet for handling recommendations before working with this material.

Storage/Stability
Lyophilized recombinant human TRAIL is stable for at least 6 months at -20 °C. A stock solution containing at least 20 µg protein per ml can be stored under sterile conditions at 2-8 °C for one month and in single-use aliquots for six months at −70 °C without detectable loss of activity. Avoid repeated freeze-thaw cycles.

Product Profile
Recombinant human TRAIL may contain up to 10% disulfide-linked homodimers. The monomeric extracellular domain of recombinant human TRAIL has a predicted molecular mass of approximately 21 kDa but migrates as a 24 kDa protein in SDS-PAGE under reducing conditions, perhaps due to glycosylation.

The activity of recombinant human TRAIL is determined by the induction of cytotoxicity in mouse L-929 cells in the presence of the metabolic inhibitor actinomycin D. The ED50 for this effect is in the range of 4–12 ng/ml.

The purity of recombinant human TRAIL is >97% determined by SDS-PAGE with silver staining.

References

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