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ProductInformation

TRAIL
Human, Recombinant
Expressed in *E. coli*

Product Number **K 4761**
Storage Temperature -70 °C

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

Product Description

The extracellular domain of human TRAIL (Thr^{95}–Gly^{281})[1] having a histidine tag at the amino terminus was expressed in *E. coli*.

TRAIL is a type II transmembrane protein with a carboxy-terminal extracellular domain that exhibits homology to other TNF family members.[2] 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.[4, 5] An adenovirus protein, RID, has been shown to inhibit TRAIL-induced apoptosis.[6] This apoptosis inducer is thought to be regulated by the transcription factor NF-κB.[7]

Reagent

The product is supplied as a solution in 20 mM HEPES, pH 7.4, 300 mM NaCl, 0.1 mM DTT, 0.01% Tween 20, and1% sucrose.

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

The recombinant human TRAIL solution should be stored in aliquots at –70 °C. Avoid multiple freeze-thaw cycles. It is stable for at least 6 months at this temperature.

Product Profile

Recombinant human TRAIL, extracellular domain, migrates as a 28 kDa protein on SDS-PAGE under reducing conditions.

Apoptosis induction was demonstrated by culturing 5×10^4 TRAIL-sensitive Jurkat or BJAB cells in the presence of various concentrations of TRAIL for 16 h at 37 °C in a 96 well plate. Apoptosis was measured by forward/sideward scatter (FSC/SSC) and flow cytometry using propidium iodide (PI). Apoptosis induction was observed at concentrations of TRAIL as low as 10-100 ng/ml.

Purity: >95% as determined by SDS-PAGE.

References

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3. Suliman, A., et al., Intracellular mechanisms of TRAIL: apoptosis through mitochondrial-dependent and -independent pathways. Oncogene, **20**, 2122-2133 (2001).
4. Golstein, P., Cell death: TRAIL and its receptors. Curr. Biol., **7,** R750–R753 (1997).
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