

TRAIL/TNFSF10 Protein, Human (HEK293, His-Flag)

Cat. No.:	HY-P78528
Synonyms:	Apo-2L; TRAIL; CD253; TNFSF10; Apo-2 ligand; APO2L; TL2
Species:	Human
Source:	HEK293
Accession:	P50591 (G118-G281)
Gene ID:	8743
Molecular Weight:	55-65 kDa

PROPERTIES

Biological Activity	Immobilized TRAIL Trimer, His Tag at 2µg/ml (100µl/well) on the plate. Dose response curve for Human TRAIL R1, hFc Tag with the EC ₅₀ of 49.2ng/ml determined by ELISA.
Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	N/A.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background

TRAIL Protein (TNFSF10), a member of the TNF superfamily, is a type II transmembrane protein. TRAIL Protein is expressed in various tissues, especially in the spleen, lung, and prostate. TRAIL protein is mainly expressed on surface of immune cells, such as cytotoxic T cells and natural killer (NK) cell. TRAIL proteins on NK and T cells is critical for controlling virus infections and tumor immune surveillance^{[1][2]}.

Human TRAIL consists of cytoplasmic domain (M1-V17), helical domain (L18-F38), and extracellular domain (T39-G281). Human TRAIL Protein shares < 70% common aa identity with mouse and rat. Mouse TRAIL Protein shares 86.94% common aa identity with rat.

TRAIL Protein mainly interacts with two agonistic TRAIL receptors (TRAIL-R1 and TRAIL-R2) and induces apoptosis in tumor or infected cells. TRAIL Protein also binds with DR4, DR5, and OPG. When binding to DR4 or DR5, TRAIL Protein can recruit FADD and further recruit and activates caspase-8. Besides, TRAIL may also trigger nonapoptotic signaling through activating pro-inflammatory pathways, such as NF-κB, PI3K/Akt, and MAPK pathway^{[1][2]}.

TRAIL induces apoptosis of tumor cells in a p53 independent manner. TRAIL-based therapies has high anti-tumor potential [3].

REFERENCES

- [1]. Cardoso Alves L, et al. The multifaceted role of TRAIL signaling in cancer and immunity. FEBS J. 2021 Oct;288(19):5530-5554.
- [2]. Zhong HH, et al. TRAIL-based gene delivery and therapeutic strategies. Acta Pharmacol Sin. 2019 Nov;40(11):1373-1385.
- [3]. Snajdauf M, et al. The TRAIL in the Treatment of Human Cancer: An Update on Clinical Trials. Front Mol Biosci. 2021 Mar 10;8:628332.
- [4]. Ganten TM, et al. Preclinical differentiation between apparently safe and potentially hepatotoxic applications of TRAIL either alone or in combination with chemotherapeutic drugs. Clin Cancer Res. 2006 Apr 15;12(8):2640-6.
- [5]. Weckmann M, et al. Critical link between TRAIL and CCL20 for the activation of TH2 cells and the expression of allergic airway disease. Nat Med. 2007 Nov;13(11):1308-15.
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