TNFRSF1A Protein, Rat (HEK293, His)

Cat. No.:	HY-P74504
Synonyms:	Tumor necrosis factor receptor superfamily member 1A; CD120a; TNF-R1; TNFRSF1A
Species:	Rat
Source:	HEK293
Accession:	P22934/NP_037223.1 (L30-A211)
Gene ID:	25625
Molecular Weight:	Approximately 30-40 kDa due to glycosylation

PROPERTIES

AA Sequence	L V P S L G D R E K R D N L C P Q G K Y A H P K N N S I C C T K C H K G T Y L V S D C P S P G Q E T V C E V C D K G T F T A S Q N H V R Q C L S C K T C R K E M F Q V E I S P C K A D M D T V C G C K K N Q F Q R Y L S E T H F Q C V D C S P C F N G T V T I P C K E K Q N T V C N C H A G F F L S G N E C T P C S H C K K N Q E C M K L C L P P V A N V T N P Q D S G T A
Biological Activity	Measured by its ability to inhibit the TNF-alpha mediated cytotoxicity in the L-929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. The ED_{50} for this effect is 26.87 ng/mL in the presence of 0.1 ng/mL of recombinant human TNF-alpha, corresponding to a specific activity is 3.72×10^4 units/mg.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	TNFRSF1A (TNF RI) protein is a single-pass type I membrane protein belonging to the tumor necrosis factor (TNF) family. TNFRSF1A is the major signaling receptor for TNF-α. TNFRSF1A protein is a multifunctional cytokine, which is synthesized by almost all cells[1][2].

The sequence of amino acids in TNFRSF1A from different species is very different (less than 85% similarity among human, rat and mouse).

TNFRSF1A contains a protein-protein interaction domain, called death domain (DD), can recruit other DD-containing proteins and couples the death receptors to caspase activation and apoptosis. Both soluble and membrane-bound forms of the cytokine can activate TNFRSF1A. TNFRSF1A induces cellular inflammatory damage and apoptosis by participating in mTOR, JNK, IKK, caspase 3, MAPK, and NF-κB pathways[1][3][4].

REFERENCES

[1]. WajantH, et, al. Tumor necrosis factor signaling. Cell Death Differ. 2003Jan;10(1):45-65.

[2]. FuQ, et, al. miR-29a up-regulation in AR42J cells contributes to apoptosis viatargeting TNFRSF1A gene. World J Gastroenterol. 2016 May 28;22(20):4881-90.

[3]. Zhou S, et, al. Bioinformatics AnalysisIdentifies TNFRSF1A as a Biomarker of Liver Injury in Sepsis TNFRSF1A is aBiomarker for Septic Liver Injury. Genet Res (Camb). 2022 Oct 15;2022:1493744.

[4]. EgusquiaguirreSP, et, al. The STAT3 Target Gene TNFRSF1A Modulates the NF-κB Pathway inBreast Cancer Cells. Neoplasia. 2018 May;20(5):489-498.

Caution: Product has not been fully validated for medical applications. For research use only.

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