

TL1A/TNFSF15 Protein, Rat (HEK293, Fc)

Cat. No.:	HY-P74508
Synonyms:	Tumor Necrosis Factor Ligand Superfamily Member 15; TNFSF15; TL1; VEGI
Species:	Rat
Source:	HEK293
Accession:	Q8K3Y7 (D94-I252)
Gene ID:	252878
Molecular Weight:	Approximately 55 kDa

PROPERTIES

AA Sequence	<p> D K P K A H L T I M R Q T P V P H L K N E L A A L H W E N N L G M A F T K N R M N Y T N K F L V I P E S G D Y F I Y S Q I T F R G T T S E C G D I S R V R R P K K P D S I T V V I T K V A D S Y P E P A H L L T G T K S V C E I S S N W F Q P I Y L G A M F S L E E G D R L M V N V S D I S L V D Y T K E D K T F F G A F L I </p>
Biological Activity	Measured by its ability to induce apoptosis of TF-1 human erythroleukemic cells. The ED ₅₀ for this effect is 34.65ng/ml, corresponding to a specific activity is 2.886×10 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.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH ₂ O. 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	<p> TL1A (Tumor necrosis factor-like cytokine 1A), also known as TNF ligand-related molecule 1 and vascular endothelial cell growth inhibitor (VEGI), is the receptor for TNFRSF25 and TNFRSF6B, acts as a regulator of mucosal immunity and participates in immunological pathways involved in the inflammatory bowel diseases (IBD) pathogenesis^[1]. TL1A belongs to the tumor necrosis factor family, derived from endothelial cell. It is a ligand for DR3 and decoy receptor TR6/DcR3, the interaction with DR3 promotes T cell expansion during an immune response, whereas TR6 has an opposing effect. Moreover, </p>
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DR3 is the death domain-containing receptor, that is upregulated during T cell activation. TL1A shows an inducible expression by TNF and IL-1alpha, and induces NF-kappaB activation and apoptosis in DR3-expressing cell lines. Meanwhile, TL1A acts as a costimulator that increases IL-2 responsiveness and secretion of proinflammatory cytokines^[2]. In addition, TL1A activates c-Jun N-terminal kinase. TL1A also activates caspase-3 leading to PARP cleavage, and inhibits the proliferation of breast carcinoma, epithelial, and myeloid tumor cells. TL1A promotes proliferation of normal human fibroblast cells. These results suggest that VEGI, a new member of the TNF family, has a signaling pathway similar to TNF and is most likely a multifunctional cytokine^[3]. Rat TL1A protein has two glycosylated domains and one transmembrane domain (36-56 a.a.), and can be cleaved into membrane-type peptide fragments and soluble peptide fragments. The protein sequence of rat is much different from mouse and human with similarities of 85.32% and 70.45%, respectively.

REFERENCES

- [1]. Furfaro F, et al. TL1A: A New Potential Target in the Treatment of Inflammatory Bowel Disease. *Curr Drug Targets*. 2021;22(7):760-769.
- [2]. Migone TS, et al. TL1A is a TNF-like ligand for DR3 and TR6/DcR3 and functions as a T cell costimulator. *Immunity*. 2002 Mar;16(3):479-92.
- [3]. Haridas V, et al. VEGI, a new member of the TNF family activates nuclear factor-kappa B and c-Jun N-terminal kinase and modulates cell growth. *Oncogene*. 1999 Nov 11;18(47):6496-504.
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Caution: Product has not been fully validated for medical applications. For research use only.

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