Animal-Free TL1A/TNFSF15 Protein, Human (His)

Cat. No.:	HY-P700153AF
Synonyms:	TNFSF15; VEGI
Species:	Human
Source:	E. coli
Accession:	O95150 (Q58-L251)
Gene ID:	9966
Molecular Weight:	Approximately 22.95 kDa

PROPERTIES

AA Sequence	M Q L R A Q G E A C V Q F Q A L K G Q E F A P S H Q Q V Y A P L R A D G D K P R A H L T V V R Q T P T Q H F K N Q F P A L H W E H E L G L A F T K N R M N Y T N K F L L I P E S G D Y F I Y S Q V T F R G M T S E C S E I R Q A G R P N K P D S I T V V I T K V T D S Y P E P T Q L L M G T K S V C E V G S N W F Q P I Y L G A M F S L Q E G D K 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 L
Biological Activity	Measure by its ability to induce TF-1 cells proliferation. The ED_{50} for this effect is < 0.2 ng/mL.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a solution containing 1X PBS, pH 8.0.
Endotoxin Level	<0.1 EU per 1 μg of the protein by the LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
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	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, 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]. Human 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 human is much different from mouse and rat with similarities of 68.42% 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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