

AITRL/TNFSF18 Trimer Protein, Human (Biotinylated, HEK293, His-Flag)

Cat. No.:	HY-P78133
Synonyms:	TNFSF18; AITRL; TL6; GITRL; GTR Ligand
Species:	Human
Source:	HEK293
Accession:	Q9UNG2 (Q50-S177)
Gene ID:	8995
Molecular Weight:	50-70 kDa

PROPERTIES

AA Sequence	<p>Q L E T A K E P C M A K F G P L P S K W Q M A S S E P P C V N K V S D W K L E I</p> <p>L Q N G L Y L I Y G Q V A P N A N Y N D V A P F E V R L Y K N K D M I Q T L T N</p> <p>K S K I Q N V G G T Y E L H V G D T I D L I F N S E H Q V L K N N T Y W G I I L</p> <p>L A N P Q F I S</p>
Biological Activity	<p>1. Immobilized Human GTR His at 1 µg/mL (100 µL/Well). Dose response curve for Biotinylated Human GTR Ligand Trimer His with the EC₅₀ of 0.2 µg/mL determined by ELISA.</p> <p>2. Immobilized Human GTR His at 5 µg/mL (100 µL/Well). Dose response curve for Biotinylated Human GTR Ligand Trimer His with the EC₅₀ of 1.69 µg/mL determined by ELISA.</p>
Appearance	Lyophilized powder.
Formulation	Lyophilized a 0.22 µm filtered solution of PBS, pH 7.4. Normally 8% trehalose is added as protectant before lyophilization.
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	GITRL (AITRL), a type II transmembrane protein, is a ligand for glucocorticoid-induced TNFR-related protein (GTR). GTR, a member of the TNFR superfamily, is expressed in T cells, natural killer cells and some myeloid cells. And GITRL is mainly expressed on antigen presenting cells (B cells, dendritic cells), macrophages and endothelial cells (ECs) ^[1] .
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When GITRL binds to GITR, GITR can produce costimulatory signals that regulate T-cell proliferation and effector functions. The interaction stimulates proliferation and cytokine production of both CD4⁺ Teff and Treg cells, and drives antitumor activity of CD8⁺ T cells^[3]. Besides, GITRL plays a role in EC-activation and promotes adhesion in both mice and humans, which increases STAT-1 phosphorylation and the augmented expression of adhesion molecules such as VCAM-1 and ICAM-1 [2].

Human GITRL shares < 55% common aa identity with mouse. Human GITRL consists of cytoplasmic domain (M1-W27), helical domain (L28-F48), and extracellular domain (L49-S177). Human GITRL is a trimer, but can also be a monomer or assemble in other multimeric structures^[4].

GITR/GITRL interaction plays a role in the pathogenesis of tumor, inflammation, as well as autoimmune diseases^[1].

REFERENCES

- [1]. Tian J, et al. The Role of GITR/GITRL Interaction in Autoimmune Diseases. *Front Immunol.* 2020 Oct 9;11:588682.
- [2]. Lecal PM, et al. Glucocorticoid-induced tumor necrosis factor receptor family-related ligand triggering upregulates vascular cell adhesion molecule-1 and intercellular adhesion molecule-1 and promotes leukocyte adhesion. *J Pharmacol Exp Ther.* 2013 Oct;347(1):164-72.
- [3]. Wang F, et al. Structures of mouse and human GITR-GITRL complexes reveal unique TNF superfamily interactions. *Nat Commun.* 2021 Mar 2;12(1):1378.
- [4]. Placke T, et al. Glucocorticoid-induced TNFR-related (GITR) protein and its ligand in antitumor immunity: functional role and therapeutic modulation. *Clin Dev Immunol.* 2010;2010:239083.
- [5]. Tian J, et al. Increased GITRL Impairs the Function of Myeloid-Derived Suppressor Cells and Exacerbates Primary Sjögren Syndrome. *J Immunol.* 2019 Mar 15;202(6):1693-1703.
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