

Product Information

GITR Ligand/TNFSF18

Human, Recombinant
Expressed in Sf21 insect cells

Product Number **G 1792**

Synonyms: GITRL, Glucocorticoid-induced tumor necrosis factor ligand

Product Description

Recombinant human GITR Ligand (GITRL) is generated from construct of amino acid residues 1-16 encoding the signal peptide of human CD33 linked to the extracellular domain (aa 52-177)¹ of human GITRL via a 6-histidine linker. It is expressed in Sf21 cells using a baculovirus expression system. Removal of the CD33 signal peptide results in a 132 amino acid polypeptide with a calculated molecular mass of 15 kDa and a 6-histidine tag at the N-terminus. As a result of glycosylation, the final product migrates as a triplet of 14 to 16 kDa in SDS-PAGE under reducing and non-reducing conditions.

The GITR ligand (GITRL) is a 177 amino acid type II membrane protein belonging to the TNF superfamily (TNFSF18).¹ The C-terminal extracellular domain displays a 21% sequence identity to TNF/TNFSF2, a 21% sequence identity to Fas ligand/TNFSF6, an 18% sequence identity to TRAIL/TNFSF10 and an 18% sequence homology to lymphotoxin α /TNFSF1. The GITR ligand is constitutively expressed in HUVECs (human umbilical vein endothelial cells), but is not expressed in resting or stimulated B and T cells or peripheral blood mononuclear cells (PBMC).

The receptor for GITR Ligand is GITR (glucocorticoid-induced TNF receptor superfamily-related protein). GITRL and GITR may modulate T lymphocyte functions in peripheral tissues and appears to be involved in interactions between activated T lymphocytes and endothelial cells and in the regulation of T cell receptor (TCR)-mediated cell death.^{1,2} Evidence suggests that GITR is an inhibitor of apoptosis. It mediates NF- κ B activation via the TRAF2/NIK pathway, protecting T cells from TCR activation-induced cell death.³

Reagent

Recombinant Human GITR Ligand is supplied as approximately 25 μ g of protein lyophilized from a 0.2 μ m filtered solution in phosphate buffered saline (PBS) containing 1.25 mg bovine serum albumin.

Storage/Stability

Store lyophilized samples at -20 °C. Upon reconstitution, the product may be stored at 2-8 °C for up to one month. For extended storage, store in working aliquots at -20 °C. Repeated freeze-thaw cycles should be avoided. Do not store in a frost-free freezer.

Preparation Instructions

Reconstitute the vial contents with a 0.2 μ m filtered solution of phosphate buffered saline containing at least 0.1% human or bovine serum albumin. Stock solutions should be at least 100 μ g/ml.

Product Profile

GITR ligand activity is measured by its ability to bind human GITR in a functional ELISA assay. Immobilized recombinant human GITR/Fc (2 μ g/ml, 100 μ l/well) binds recombinant human GITR ligand with a linear range of 0.3-20 ng/ml. Optimal concentrations should be determined by each laboratory for each application.

Endotoxin level: < 0.1 ng/ μ g of protein as determined by the LAL (Limulus amebocyte lysate) method.

References

1. Gurney, A.L., et al., Identification of a new member of the tumor necrosis factor family and its receptor, a human ortholog of mouse GITR, *Curr. Biol.*, **9**, 215-218 (1999).

2. Nocentini, G., A new member of the tumor necrosis factor/nerve growth factor receptor family inhibits T cell receptor-induced apoptosis. *Proc. Natl. Acad. Sci. USA*, **94**, 6216-6221 (1997).
3. Riccardi, C., et al., Glucocorticoid hormone-induced modulation of gene expression and regulation of T cell death: role of GITR and GILZ, two dexamethosone-induced genes. *Cell Death Differ.*, **6**, 1182-1189 (1999).

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