

# PRODUCT INFORMATION



## GITR Extracellular Domain (human, recombinant)

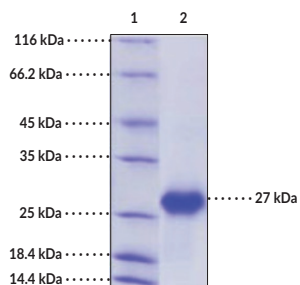
Item No. 32017

### Overview and Properties

<b>Synonyms:</b>	CD357, GITR-D, Glucocorticoid-induced TNFR-related Protein, TNF Receptor Superfamily Member 18, TNFRS18, Tumor Necrosis Factor Receptor Superfamily Member 18
<b>Source:</b>	Active recombinant human C-terminal His-tagged GITR expressed in HEK293 cells
<b>Amino Acids:</b>	26-161
<b>Molecular Weight:</b>	16 kDa
<b>Storage:</b>	-80°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Purity:</b>	≥95% estimated by SDS-PAGE
<b>Supplied in:</b>	Lyophilized from sterile PBS, pH 7.4
<b>Endotoxin Testing:</b>	<1.0 EU/μg, determined by the LAL endotoxin assay
<b>Bioactivity:</b>	See figures for details

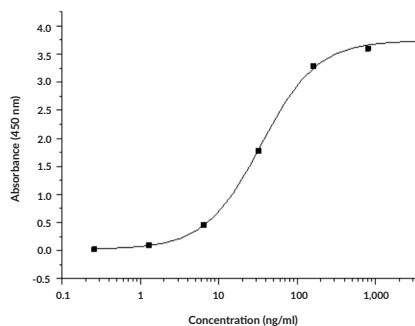
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Images



Lane 1: MW Markers  
Lane 2: GITR Extracellular Domain

**SDS-PAGE Analysis of GITR Extracellular Domain.** This protein has a calculated molecular weight of 16 kDa. It has an apparent molecular weight of approximately 27 kDa by SDS-PAGE under reducing conditions due to apparent post-translational modifications.



**GITR Extracellular Domain Binding in a Functional ELISA.** Immobilized GITR Extracellular Domain (human, recombinant) (Item No. 32017) at 10 μg/ml (100 μl/well) can bind GITRL Extracellular Domain (human, recombinant) (Item No. 32018). The EC<sub>50</sub> value of GITRL Extracellular Domain (human, recombinant) (Item No. 32018) is 20-60 ng/ml.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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## Description

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Glucocorticoid-induced TNFR-related protein (GITR), also known as TNF receptor superfamily member 18 (TNFRS18), is a type I transmembrane glycoprotein and member of the tumor necrosis factor receptor superfamily with roles in acquired and innate immunity.<sup>1</sup> It is composed of an extracellular domain that contains a ligand binding site, a transmembrane domain, and a cytoplasmic domain that facilitates the induction of NF- $\kappa$ B signaling.<sup>1,2</sup> GITR is primarily expressed in immature and mature T cells and natural killer (NK) cells but is also expressed at low levels in mast cells, eosinophils, B cells, macrophages, as well as non-lymphoid tissues, osteoclast precursor cells, keratinocytes, and retinal epithelial cells. Upon binding of its ligand GITRL (Item No. 32018), GITR binds various TNF receptor-associated factors (TRAFs) and induces signaling in a cell type-specific manner.<sup>3</sup> GITR protein levels are increased in macrophages and dendritic cells in a mouse model of *T. gondii* infection, and administration of an agonistic anti-GITR antibody increases pro-inflammatory cytokine production in peritoneal fluid and reduces chronic phase parasite burden in the same model.<sup>4</sup> Protein levels of GITR are also increased on CD4<sup>+</sup>CD25<sup>+</sup>, CD4<sup>+</sup>CD25<sup>high</sup>, and CD4<sup>+</sup>CD25<sup>+</sup>CD127<sup>low/-</sup> regulatory T cells isolated from patients with systemic lupus erythematosus (SLE) compared with healthy controls.<sup>5</sup> Intratumor, but not peripheral, administration of an agonistic anti-GITR antibody increases overall survival in a GL261 murine glioma model.<sup>6</sup> Cayman's GITR Extracellular Domain (human, recombinant) protein can be used for ELISA. This protein consists of 147 amino acids, has a calculated molecular weight of 16 kDa, and a predicted N-terminus of Gln26 after signal peptide cleavage. By SDS-PAGE, under reducing conditions, the molecular mass of the protein is approximately 27 kDa due to apparent post-translational modifications.

## References

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2. Krausz, L.T., Bianchini, R., Ronchetti, S., et al. GITR-GITRL system, a novel player in shock and inflammation. *ScientificWorldJournal* 7, 533-566 (2007).
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4. Costa, F.R.C., Mota, C.M., Santiago, F.M., et al. GITR activation positively regulates immune responses against *Toxoplasma gondii*. *PLoS One* **11(3)**, e0152622 (2016).
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6. Miska, J., Rashidi, A., Chang, A.L., et al. Anti-GITR therapy promotes immunity against malignant glioma in a murine model. *Cancer Immunol. Immunother.* **65(12)**, 1555-1567 (2016).

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