

DESCRIPTION

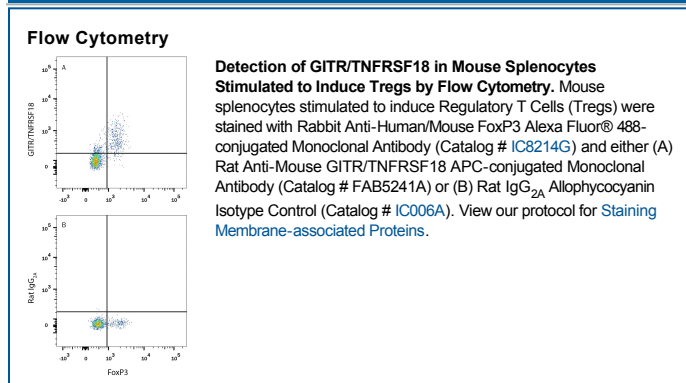
Species Reactivity	Mouse
Specificity	Detects mouse GITR/TNFRSF18 in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human (rh) 4-1BB, recombinant mouse (rm) CD27, rmCD30, rmEDAR, rmFas, rhGITR, rhHVEM, rmRANK, rhTROY, and rmTNF R1 is observed.
Source	Monoclonal Rat IgG _{2A} Clone # 108619
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse GITR/TNFRSF18 Met1-His153 Accession # O35714
Conjugate	Allophycocyanin Excitation Wavelength: 620-650 nm Emission Wavelength: 660-670 nm
Formulation	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Flow Cytometry	10 μ L/10 ⁶ cells	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> ● 12 months from date of receipt, 2 to 8 °C as supplied.

BACKGROUND

GITR (Glucocorticoid-induced Tumor Necrosis Factor Receptor), also known as AITR and CD357, is a 39-40 kDa member of the co-stimulatory subset of the TNF receptor superfamily (1, 2). In mouse, the GITR gene is composed of five exons and encodes multiple length isoforms that arise from alternative splicing. The "standard", or first reported isoform is a type I transmembrane protein, 228 amino acids (aa) in length that contains a 19 aa signal sequence, a 134 aa extracellular region, a 21 aa transmembrane segment, and a 54 aa cytoplasmic domain. The extracellular region contains four potential N-linked glycosylation sites plus three cysteine-rich pseudorepeats of about 40 aa each (3, 4). The cytoplasmic domain has a P-x-Q/E-E motif that is known to associate with TRAF2. This is a common characteristic of TNFRSF members with co-stimulatory functions (1). There is a naturally-occurring soluble form. Given its membership in the TNFRSF, it likely functions as a trimer on the cell surface (2). However, its ligand GITRL appears to act as a dimer, and this may affect stoichiometry of a functional GITR complex (5). In mouse, GITR is expressed by multiple cell types. These include keratinocytes, neutrophils, eosinophils, NK cells, NKT cells, macrophages, and CD138⁺ plasma cells (6-8). It has been studied most extensively on T cells, where it appears on multiple subsets of T cells, including $\gamma\delta$ CD25⁺ Tregs, and CD4⁺ GITR⁺ CD45RB^{lo} effector cells, thymus-derived Tregs (CD4⁺ CD25⁺ CD83⁺ and CD4⁺ CD25⁺ CD103⁺), Tr1 (IL-10⁺ FoxP3⁻) cells, CD8⁺ CD25⁺ FoxP3⁺ IL-10⁺ Tregs, and CD4⁺ CD8⁻ FoxP3⁻ PD-1⁺⁺ DN Tregs (9). GITR would appear to have both stimulatory and inhibitory activity, depending on the context (1). Notably, seemingly analogous interactions between the human and rodent systems can produce nonequivalent outcomes. For example, the GITR:GITRL interaction between NK cells and tumor cells results in decreased IFN- γ secretion and cytotoxicity by human NK cells, but the opposite effect in mouse NK cells (7). Over aa 21-153, mouse GITR shares 84% and 53% aa sequence identity with rat and human GITR, respectively.

References:

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4. Nocentini, G. et al. (2000) *Cell Death Differ.* **7**:408.
5. Zhou, Z. et al. (2008) *Proc. Natl. Acad. Sci. USA* **105**:641.
6. Wang, J. et al. (2005) *J. Biol. Chem.* **280**:37725.
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