Mouse GITR/TNFRSF18 Fluorescein-conjugated Antibody

Monoclonal Rat IgG_{2A} Clone # 108619

Catalog Number: FAB5241F

100 Tests

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/TNFRSF18, 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	Fluorescein Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm (FITC)
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.

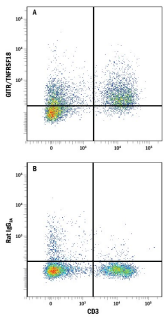
APPLICATIONS

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 µL/10^6 cells	See Below

DATA

Flow Cytometry



Detection of GITR/TNFRSF18 in Mouse Splenocytes by Flow Cytometry. Mouse splenocytes were stained with Rat Anti-Mouse CD3 APC-conjugated Monoclonal Antibody (Catalog # FAB4841A) and either (A) Rat Anti-Mouse GITR/TNFRSF18 Fluorescein-conjugated Monoclonal Antibody (Catalog # FAB5241F) or (B) Rat IgG_{2A} Fluorescein Isotype Control (Catalog # IC006F). View our protocol for Staining Membrane-associated Proteins.

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.** ● 12 months from date of receipt, 2 to 8 °C as supplied.

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BACKGROUND

GITR (Glucocorticoid-Induced Tumor Necrosis Factor Receptor), also known as AITR, is a 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 alternate 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 extracellular regions of mouse and human are 57% aa identical. 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 (4). Three other mouse GITR isoforms (B, C and D) have been reported (5). All share the same N-terminal 101 of 134 aa in the extracellular region (including pseudorepeats #1, #2 and one-half of #3). Isoform D diverges at aa #101 and continues for another 12 aa for a total length of 113 aa. This is a naturally-occurring soluble form. Isoforms B and C show splicing in their cytoplasmic tails that creates cytoplasmic domains of 118 aa and 46 aa, respectively. In both the B and C isoforms, the TRAF2 binding site is spliced out, with a $p56^{lck}$ binding site inserted in isoform B (4). Given its membership in the TNFRSF, it likely functions as a trimer on the cell surface (2). GITR is predominantly expressed on $CD4^+CD25^+$ regulatory T cells (Treg) and naïve $CD8^+$ and $CD4^+$ $CD25^-$ T cells, where its expression is up-regulated after antigen-driven activation. GITR activation provides co-stimulatory signals for activated $CD4^+$ CD25- T cells to enhance cell proliferation and augment cytokine production (IL-2, IL-4, IFN-γ). On $CD4^+$ $CD25^+$ Treg cells, GITR activation provides co-stimulatory signals to induce proliferation, setting Treg cells in an active/hyperproliferactive state (6-8).

References:

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8. Stephens, G.L. *et al.* (2004) **173**:5008.

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