Mouse GITR/TNFRSF18 Alexa Fluor® 405-conjugated Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF524V
100 µg

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse GITR/TNFRSF18 in direct ELISAs and Western blots. In direct ELISAs, approximately 20% cross-reactivity with recombinant human (rh) GITR is observed, less than 2% cross-reactivity with recombinant mouse (rm) 4-1BB, rmCD27,
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse GITR/TNFRSF18 Ser22-His153 Accession # Q8C4K3
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *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.*

Western Blot	Optimal dilution of this antibody should be experimentally determined.

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

BACKGROUND

GITR (glucocorticoid-induced tumor necrosis factor receptor; also named 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).

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