

# Anti-GITR pure – functional grade mouse

1 mg in 0.5 mL  
0.1 mg in 1.0 mL

Order no. 130-092-656  
Order no. 130-092-655

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## 1. Description

<b>Clone</b>	DTA-1 (isotype: rat IgG2b).
<b>Product format</b>	<b>1 mg in 0.5 mL Anti-GITR pure – functional grade, mouse</b> (# 130-092-656) or <b>0.1 mg in 1.0 mL Anti-GITR pure – functional grade, mouse</b> (# 130-092-655)
	The antibody is supplied in phosphate-buffered saline (PBS), pH 7.2. Endotoxin levels have been tested and do not exceed 0.01 ng/μg of protein.
<b>Product size</b>	1 mg or 0.1 mg.
<b>Storage</b>	Store protected from light at 2–8 °C. Do not freeze. The expiration date is indicated on the vial label.

*This product contains no preservative and is sterile filtered; always handle under aseptic conditions.*

### 1.1 Background information

Glucocorticoid-induced tumor necrosis factor receptor (GITR) is an inducible Type I transmembrane protein and member of the tumor necrosis factor receptor (TNFR) superfamily.<sup>1</sup> GITR is also known as TNFRSF18. Human and mouse orthologs share about 60% homology.<sup>2</sup>

GITR is expressed at low levels on resting T cells, B cells, macrophages and at high levels on CD4<sup>+</sup>CD25<sup>+</sup> regulatory T cells (Tregs). Upon activation, expression on CD4<sup>+</sup> and CD8<sup>+</sup> T cells is upregulated. Stimulation of T cells through GITR induces NFκB activation via the TRAF2–NIK signaling pathway<sup>3</sup> and abrogates the inhibitory function of Tregs. It is hypothesized that GITR has a role in the maintenance of immunological self tolerance, and mouse models of autoimmune disease suggest that GITR activation may break self-tolerance and induce autoimmunity.<sup>4</sup> DTA-1 is a non-depleting, agonistic antibody reported to abrogate regulatory T cell function *in vivo* and *in vitro*.<sup>4–10</sup>

### 1.2 Applications

- *In vitro* costimulation of T cells by Anti-GITR (DTA-1).
- *In vivo* GITR stimulation by Anti-GITR (DTA-1).

## 2. References

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4. Shimizu, J. *et al.* (2002) Stimulation of CD25<sup>+</sup>CD4<sup>+</sup> regulatory T cells through GITR breaks immunological self-tolerance. *Nat. Immunol.* 3: 135–142.
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6. Ko, K. *et al.* (2005) Treatment of advanced tumors with agonistic anti-GITR mAb and its effects on tumor-infiltrating Foxp3<sup>+</sup>CD25<sup>+</sup>CD4<sup>+</sup> regulatory T cells. *J. Exp. Med.* 202: 885–891.
7. Valzasina, B. *et al.* (2005) Triggering of OX40 (CD134) on CD4<sup>+</sup>CD25<sup>+</sup> T cells blocks their inhibitory activity: a novel regulatory role for OX40 and its comparison with GITR. *Blood* 105: 2845–2851.
8. Lee, K. *et al.* (2005) Endogenous CD4<sup>+</sup>CD25<sup>+</sup> regulatory T cells play no apparent role in the acute humoral response to intact *Streptococcus pneumoniae*. *Infect. Immun.* 73: 4427–4431.
9. Kanamaru, F. *et al.* (2004) Costimulation via Glucocorticoid-Induced TNF Receptor in Both Conventional and CD25<sup>+</sup> Regulatory CD4<sup>+</sup> T Cells. *J. Immunol.* 172: 7306–7314.
10. Kim, J. *et al.* (2006) Prevention of chronic graft-versus-host disease by stimulation with glucocorticoid-induced TNF receptor. *Exp. Mol. Med.* 38(1): 94–99.

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