

DESCRIPTION

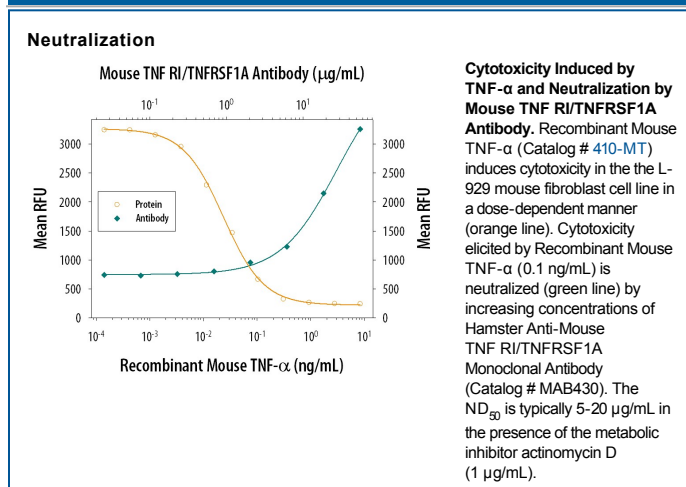
Species Reactivity	Mouse
Specificity	Detects mouse TNF RI/TNFRSF1A in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human (rh) 4-1BB, rhCD27, rhCD30, recombinant mouse (rm) CD27, rmCD30, rhCD40, rmCD40, rhDR3, rhDR6, rmEDAR, rhFas, rmFas, rhEDAR, rhGITR, rmGITR, rhHVEM, rhLTβR, rmLTβR, rhNGF R, rhOPG, rmOPG, rhRANK, rmRANK, rhTAJ, rhTNF RI, rhTNF RII or rmTNF RII is observed.
Source	Monoclonal Hamster IgG Clone # 55R170
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Recombinant mouse TNF RI/TNFRSF1A Extracellular domain
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

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
Western Blot	1 µg/mL	Recombinant Mouse TNF RI/TNFRSF1A (Catalog # 425-R1) under non-reducing conditions only
Neutralization		Measured by its ability to neutralize TNF-α-induced cytotoxicity in the L-929 mouse fibroblast cell line. Matthews, N. and M. L. Neale (1987) in <i>Lymphokines and Interferons, A Practical Approach</i> . Clemens, M. J. <i>et al.</i> (eds): IRL Press. 221. The Neutralization Dose (ND ₅₀) is typically 5-20 µg/mL in the presence of 0.1 ng/mL Recombinant Mouse TNF-α and 1 µg/mL actinomycin D.
Immunoprecipitation		Sheehan, K. <i>et al.</i> (1995) <i>J. Exp. Med.</i> 181:607.

DATA



PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	<p>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</p> <ul style="list-style-type: none"> ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

TNF receptor 1 (TNF RI; also called TNF R-p55/p60 and TNFRSF1A) is a type I transmembrane protein member of the TNF receptor superfamily, designated TNFRSF1A (1, 2). Both TNF RI and TNF RII (TNFRSF1B) are widely expressed and contain four TNF- α trimer-binding cysteine-rich domains (CRD) in their extracellular domains (ECD). However, TNF RI is thought to mediate most of the cellular effects of TNF- α (3). It is essential for proper development of lymph node germinal centers and Peyer's patches, and for combating intracellular pathogens such as *Listeria* (1-3). TNF RI is also a receptor for TNF- β /TNFSF1B (lymphotoxin- α) (4). TNF RI is present on the cell surface as a trimer of 55 kDa subunits (4, 5). TNF- α induces sequestering of TNF RI in lipid rafts, where it activates NF κ B and is cleaved by ADAM-17/TACE (9, 10). Release of the 28 - 34 kDa TNF RI ECD also occurs constitutively and in response to products of pathogens such as LPS, CpG DNA or *S. aureus* protein A (1, 6-8). Full-length TNF RI may also be released in exosome-like vesicles (11). Release helps to resolve inflammatory reactions, since it down-regulates cell surface TNF RI and provides soluble TNF RI to bind TNF- α (6, 12, 13). Exclusion from lipid rafts causes endocytosis of TNF RI complexes and induces apoptosis (1). Mouse TNF RI is a 454 amino acid (aa) protein that contains a 21 aa signal sequence, a 191 aa ECD with a PLAD domain (5) that mediates constitutive trimer formation, followed by the four CRD, a 23 aa transmembrane domain, and a 219 aa cytoplasmic sequence that contains a neutral sphingomyelinase activation domain and a death domain (15). The ECD of mouse TNF RI shows 67%, 70%, 64%, 70% and 88% aa identity with canine, feline, porcine, human, and rat TNF RI, respectively; it shows 23% aa identity with the ECD of TNF RII.

References:

1. Pfeffer, K. (2003) Cytokine Growth Factor Rev. **14**:185.
2. Hehlgans, T. and K. Pfeffer (2005) Immunology **115**:1.
3. Peschon, J.J. *et al.* (1998) J. Immunol. **160**:943.
4. Banner, D.W. *et al.* (1993) Cell **73**: 431.
5. Chan, F.K. *et al.* (2000) Science **288**:2351.
6. Xanthoulea, S. *et al.* (2004) J. Exp. Med. **200**:367.
7. Jin, L. *et al.* (2000) J. Immunol. **165**:5153.
8. Gomez, M.I. *et al.* (2006) J. Biol. Chem. **281**:20190.
9. Legler, D.F. *et al.* (2003) Immunity **18**:655.
10. Tellier, E. *et al.* (2006) Exp. Cell Res. **312**:3969.
11. Islam, A. *et al.* (2006) J. Biol. Chem. **281**:6860.
12. Garton, K.J. *et al.* (2006) J. Leukoc. Biol. **79**:1105.
13. McDermott, M.F. *et al.* (1999) Cell **97**:133.
14. Schneider-Brachert, W. *et al.* (2004) Immunity **21**:415.
15. Lewis, M. *et al.* (1991) Proc. Natl. Acad. Sci. USA **88**:2830.