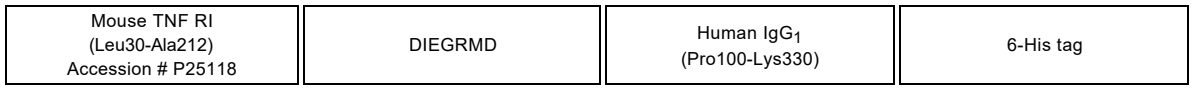
Recombinant Mouse TNF RI/TNFRSF1A Fc Chimera

Catalog Number: 430-RI/CF

DESCRIPTION

Source

Mouse myeloma cell line, NS0-derived mouse TNF RI/TNFRSF1A protein



N-terminal Sequence Analysis	Leu30
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	48.6 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	70 kDa, reducing conditions
Activity	Measured by its ability to inhibit the TNF-α mediated cytotoxicity in the L-929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. Matthews, N. and M.L. Neale (1987) in Lymphokines and Interferons, A Practical Approach. Clemens, M.J. *et al.* (eds): IRL Press. 221. The ED_{50} for this effect is 0.75-4.5 ng/mL in the presence of 0.1 ng/mL recombinant mouse TNF-α.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

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BACKGROUND

TNF receptor 1 (TNF RI; also called TNF R-p55/p60 and TNFRSF1A) is a 55 kDa type I transmembrane protein member of the TNF receptor superfamily, designated TNFRSF1A (1, 2). Mouse TNF RI is a 454 amino acid (aa) protein that contains a 21 aa signal sequence, a 191 aa extracellular domain (ECD) with a PLAD (pre-ligand assembly domain) that mediates constitutive dimer/trimer formation, followed by four CRD (cysteine-rich domains), a 23 aa transmembrane domain, and a 219 aa cytoplasmic sequence that contains a neutral sphingomyelinase activation domain and a death domain (3, 4). The ECD of mouse TNF RI shares 70%, 88%, 67%, 70% and 64% aa sequence identity with human, rat, canine, feline and porcine TNF RI, respectively. Both TNF RI and TNF RII (TNFRSF1B) are widely expressed and contain four TNF-α trimer-binding CRD in their 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, 2, 5). TNF RI is also a receptor for TNF-β/TNFSF1B (lymphotoxin-α) (6). TNF RI is stored in the Golgi and translocates to the cell surface following pro-inflammatory stimuli (7). TNF-α stabilizes TNF RI and induces its sequestering in lipid rafts, where it activates NFκB and is cleaved by ADAM-17/TACE (8, 9, 16). 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, 10-12). Full-length TNF RI may also be released in exosome-like vesicles (13). Release helps to resolve inflammatory reactions, since it down-regulates cell surface TNF RI and provides soluble TNF RI to bind TNF-α (10, 14, 15). Exclusion from lipid rafts causes endocytosis of TNF RI complexes and induces apoptosis (1). Mutations of human TNF R1 can result in inflammatory episodes known as TRAPS (TNFR-associated periodic syndrome) (7).

References:

1. Pfeffer, K. (2003) Cytokine Growth Factor Rev. **14**:185.
2. Hehlgans, T. and K. Pfeffer (2005) Immunology **115**:1.
3. Chan, F.K. *et al.* (2000) Science **288**:2351.
4. Lewis, M. *et al.* (1991) Proc. Natl. Acad. Sci. USA **88**:2830.
5. Peschon, J.J. *et al.* (1998) J. Immunol. **160**:943.
6. Banner, D.W *et al.* (1993) Cell **73**: 431.
7. Turner, M.D. *et al.* (2012) Biosci. Rep. **32**:105.
8. Legler, D.F. *et al.* (2003) Immunity **18**:655.
9. Tellier, E. *et al.* (2006) Exp. Cell Res. **312**:3969.
10. Xanthoulea, S. *et al.* (2004) J. Exp. Med. **200**:367.
11. Jin, L. *et al.* (2000) J. Immunol. **165**:5153.
12. Gomez, M.I. *et al.* (2006) J. Biol. Chem. **281**:20190.
13. Islam, A. *et al.* (2006) J. Biol. Chem. **281**:6860.
14. Garton, K.J. *et al.* (2006) J. Leukoc. Biol. **79**:1105.
15. McDermott, M.F. *et al.* (1999) Cell **97**:133.

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