

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TNF RI/TNFRSF1A in direct ELISAs and Western blots. In direct ELISAs, less than 1% cross-reactivity with recombinant human (rh) TNF RII, rhTNF- α , recombinant mouse TNF- α , recombinant rat TNF- α , and rhTNF- β is observed. Because this antibody preparation is a total IgG fraction, complete monospecificity cannot be assumed.
Source	Polyclonal Goat IgG
Purification	Protein A or G purified
Immunogen	<i>E. coli</i> -derived recombinant human sTNF RI/TNFRSF1A
Endotoxin Level	<0.10 EU per 1 μ g of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

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 μ g/mL	Recombinant Human TNF RI/TNFRSF1A (Catalog # 636-R1)
Agonist Activity	Measured in a cytotoxicity assay using either L-929 mouse fibrosarcoma cells or A549 human lung carcinoma cells in the presence of the metabolic inhibitor actinomycin D. The ED ₅₀ for this effect is typically 10-15 μ g/mL for L-929 cells or 5-10 μ g/mL for A549 cells.	

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 1 mg/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. <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 member, 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). Human TNF RI is a 455 amino acid (aa) protein that contains a 21 aa signal sequence, a 190 aa ECD with a PLAD domain(5) that mediates constitutive trimer formation, followed by the four CRD, a 23 aa transmembrane domain, and a 221 aa cytoplasmic sequence that contains a neutral sphingomyelinase activation domain and a death domain (15). The ECD of human TNF RI shows 80%, 80%, 73%, 69% and 70% aa identity with dog, cat, pig, rat and mouse TNF RI, respectively; it shows 23% aa identity with the ECD of TNF RII.

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