

## DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse TNF RI/TNFRSF1A in ELISAs and Western blots. In sandwich immunoassays, less than 0.05% cross-reactivity with recombinant human (rh) TNF- $\alpha$ , recombinant rat TNF- $\alpha$ , recombinant porcine TNF- $\alpha$ , rhTNF- $\beta$ , recombinant mouse TNF sRII, rhTNF sRI, and rhTNF sRI is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant mouse TNF RI/TNFRSF1A lle22-Ala212 Accession # P25118
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with BSA as a carrier protein. 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
<b>Western Blot</b>	0.1 $\mu$ g/mL	Recombinant Mouse TNF RI/TNFRSF1A (Catalog # 425-R1)
<b>Mouse TNF RI/TNFRSF1A Sandwich Immunoassay</b>		<b>Reagent</b>
<b>ELISA Capture</b>	2-8 $\mu$ g/mL	Mouse/Rat TNF RI/TNFRSF1A Antibody (Catalog # MAB425)
<b>ELISA Detection Standard</b>	0.1-0.4 $\mu$ g/mL	Mouse TNF RI/TNFRSF1A Biotinylated Antibody (Catalog # BAF425) Recombinant Mouse TNF RI/TNFRSF1A (Catalog # 425-R1)

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

TNF receptor 1 (TNF RI; also called TNF R-p55/p60, TNFRSF1A and CD120a) is a type I transmembrane protein that belongs to the TNF receptor superfamily (1, 2). TNF RI is widely expressed and is present on the cell surface as a trimer of 55 kDa subunits. It serves as a receptor for both TNF- $\alpha$  and TNF- $\beta$ /lymphotoxin. Each subunit contains four TNF- $\alpha$  trimer-binding cysteine-rich domains (CRD) in its extracellular domain (ECD) (1-6). TNF- $\alpha$  binding to TNF R1 induces the sequestration of TNFRI in lipid rafts, where it activates NF $\kappa$ B and is cleaved by ADAM-17/TACE (7, 8). Release of the 28-34 kDa TNF RI ECD occurs constitutively, and in response to products of pathogens such as LPS, CpG DNA or *S. aureus* protein A (1, 7-12). Full-length TNF RI may also be released in exosome-like vesicles (12). Such release helps to resolve inflammatory reactions as it down-regulates cell surface TNF RI and provides soluble TNF RI to bind TNF- $\alpha$  (6, 13, 14). Exclusion from lipid rafts causes endocytosis of TNF RI complexes and induces apoptosis (7, 15). Although there is a second receptor for TNF- $\alpha$  (TNF R2), TNF RI is thought to mediate most of the cellular effects of TNF- $\alpha$  (3). TNF R1 is essential for proper development of lymph node germinal centers and Peyer's patches, and for combating intracellular pathogens such as *Listeria monocytogenes* (1-3). Mouse TNF RI is a 454 amino acid (aa) protein that contains a 21 aa signal sequence and a 191 aa ECD with a PLAD domain (6). This mediates constitutive trimer formation. The PLAD domain is followed by four CRDs, a 23 aa transmembrane domain, and a 219 aa cytoplasmic sequence that contains a neutral sphingomyelinase activation domain and a death domain (16). 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; and it shows 23% aa identity with the ECD of TNF RII.

## References:

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