



Recombinant Canine TNF RI

Catalog Number: GR104217

Background

TNF receptor 1 (TNF RI; also termed TNF Rp55/p60 and TNFRSF1A) is a 55 kDa type I transmembrane protein member of the TNF receptor superfamily, designated TNFRSF1A (1, 2). Canine TNF RI is a 455 amino acid (aa) protein that contains a 21 aa signal sequence and 190 aa ECD with a PLAD (preligand assembly domain) that mediates constitutive dimer/trimer formation, followed by four CRD (cysteine-rich domains), a 23 aa transmembrane domain, and a 221 aa cytoplasmic sequence that contains a neutral sphingomyelinase activation domain and a death domain (3, 4). The ECD of canine TNF RI shows 23% aa identity with the ECD of TNF RII. 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 proinflammatory stimuli (7). TNF α stabilizes TNF RI and induces its sequestering in lipid rafts, where it activates NF κ B and is cleaved by ADAM17/TACE (8, 9, 16). Release of the 2834 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, and 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:

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Description

Sources: expressed in *E. coli*.

Molecular weight: 21 kDa (aa 22-211).

Accession # A0A8C0TE64

Activity: Measured by its ability to inhibit TNF- α mediated cytotoxicity in the L-929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. Matthews N and Neale ML (1987) in Lymphokines and Interferons, A practical Approach. Clemens MJ et al. (eds): IRL Press. 221. The ED50 for this effect is 0.05-0.1 μ g/ml in the presence of 0.25 ng/ml of rcTNF- α .

Endotoxin level: <0.01 EU per 1 μ g of the protein by the LAL method.

Purity: > 98%, by SDS-PAGE under reducing conditions and visualized by silver staining.

Formulation: Lyophilized from a 0.2 μ m filtered solution in PBS with BSA as a carrier protein.

Reconstitution: reconstitute at 50 μ g/ml in sterile PBS and store at -20°C ~ -70°C for up to 3 months.

Shipping and storage: The product is shipped at ambient temperature or with ice pad. Upon receipt, store it immediately at -20°C to avoid loss of activity and use it in 3 months.

Related products

1. GR238016 50 ml Reagent Reservoir, 100/case, 5 packs/case (pack of 20)
2. GR238004 Tissue Culture 96-well Microplate, individually packed, Case of 50
3. GR238019 1.5 ml Microcentrifuge tube with screw cap and free-standing, pack of 500
4. GR238007 125 ml leak-resistant HDPE bottle, colorless, pack of 24
5. GR238002 Microplate 12x8-Well Strip High Binding, Case of 50
6. GR238003 Microplate 12x8-Well Strip Medium Binding, Case of 50
7. GR238032 42592 Costar Stripwell Microplate 1 x 8 Flat Bottom, High Binding, Case of 100
8. GR238001 468667 Thermo Microplate 12x8-Well Strip Nunc Maxisorp F8, Case of 60
9. GR238031 96-well microplate sealer plastic, pack of 100

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

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NOT FOR USE IN HUMANS AND ANIMALS**