

Product Information

TUMOR NECROSIS FACTOR SOLUBLE RECEPTOR I (TNF sRI)/Fc Chimera Mouse, Recombinant Expressed in *Escherichia coli*

Product Number **T3564**

Product Description

Recombinant mouse Tumor Necrosis Factor soluble Receptor I (TNF sRI) is a member of the TNF family of receptors. A cDNA sequence encoding the extracellular domain of mouse TNF receptor I is expressed in *Escherichia coli*.¹ The non-glycosylated methionyl form of the recombinant mouse soluble TNF RI has a predicted molecular mass of approximately 21 kDa. Recombinant mouse TNF sRI is a 425 amino acid residue transmembrane glycoprotein.¹ The extracellular domain of TNF RI has four cysteine-rich motifs.² Mouse TNF RI shares 64% amino acid sequence identity with human TNF-R1. Mouse TNF RI and mouse TNF RII share 20% identity in their extracellular regions and almost no similarity in their cytoplasmic regions.¹

TNF RI and TNF RII are members of the TNF family of receptors. Soluble TNF RI neutralizes the biological activities of both TNF- α and TNF- β . TNF RI relative to TNF RII seems to be the more physiologically-relevant receptor, whereas TNF-RII appears to play a direct role in only a limited number of TNF responses.³ Soluble TNF RI has been identified in both urine and blood.⁴ Serum levels of sTNF receptors increase dramatically in certain pathological situations. The extracellular domain of TNF sRI is required for binding.² The intracellular portion of TNF sRI contains a "death domain" that is required for the signaling of apoptosis and NF- κ B activation.

Two types of soluble TNF receptors have been identified in human serum and urine. These binding proteins represent truncated forms of the two types of high-affinity cell surface receptors for TNF (TNFR-p60 Type B and TNFR-p80 Type A). Soluble TNF RI corresponds to TNFR-p60 Type B. These soluble forms appear to arise as a result of shedding of the extracellular domains of the membrane-bound receptors. Although the physiological role of these proteins is not known, it is thought that the shedding of soluble

receptors in response to TNF release is a mechanism to find TNF that is not immediately bound and thus localize the inflammatory response. It is also speculated that the pool of TNF bound to soluble receptors could represent a reservoir for the controlled release of TNF.

TNF-sRI is expressed in virtually all nucleated mammalian cells.⁵ Among the numerous cells known to express TNF RI are hepatocytes,⁴ monocytes and neutrophils,⁶ cardiac muscle cells,⁷ endothelial cells,⁸ and CD34⁺ hematopoietic progenitors.⁹

Reagents

Recombinant human TNF sRI is supplied lyophilized from a 0.2 μ m filtered solution in phosphate buffered saline containing 2.5 mg of bovine serum albumin.

Preparation Instructions

Reconstitute the contents of the vial using sterile phosphate-buffered saline (PBS) containing at least 0.1% human serum albumin or bovine serum albumin. Prepare a stock solution of no less than 50 μ g/ml.

Storage/Stability

Store at -20°C. Upon reconstitution, store at 2-8°C for one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended.

Product Profile

Recombinant mouse TNF sRI is measured by its ability to inhibit the recombinant mouse TNF- α mediated cytotoxicity in mouse L-929 cells, in the presence of the metabolic inhibitor actinomycin D.¹⁰ The ED₅₀ for this effect is generally 0.5-1.5 μ g/ml in the presence of 0.1 ng/ml of recombinant TNF- α . The ED₅₀ is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Purity: >97% as determined by SDS-PAGE, visualized by silver stain.

Endotoxin: < 0.1 ng/μg protein as determined by the LAL method.

References

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