

Product Information

Transforming Growth Factor- β Receptor II/Fc Chimera

Mouse, Recombinant
Expressed in mouse NSO cells

Product Number **T3698**

Product Description

Transforming Growth Factor- β Receptor II/Fc Chimera (TGF- β RII) is produced from a DNA sequence encoding the signal peptide from human CD33 joined to the extracellular domain of mouse TGF- β RII (amino acid residues 24-184)¹ fused to the carboxy-terminal Fc region of human IgG1 by a polypeptide linker. Based on N-terminal sequencing, the mature protein starts at Ile 24 and has a calculated molecular mass of 4.6 kDa. As a result of glycosylation, the recombinant protein migrates as a 60-65 kDa protein in SDS-PAGE.

The transforming growth factor- β (TGF- β) family of cytokines are multifunctional peptides; capable of influencing cell proliferation, growth, differentiation, and other functions in a wide range of cell types.² Most mammalian cells express three abundant high affinity TGF receptors, which can bind and be cross-linked to TGF- β .³ The receptors for TGF- β are designated as Type I (53 kDa), Type II (70-85 kDa), and Type III (250-350 kDa). The type I and type II receptors are membrane-bound serine/threonine kinases. Both receptors are essential for signal transduction. The TGF- β type III receptor, or betaglycan, is a transmembrane proteoglycan with a large extracellular domain and a short cytoplasmic domain that has no apparent signaling motif.⁴

Recombinant soluble TGF- β Receptor II binds TGF- β 1, TGF- β 3, and TGF- β 5 with high affinity and TGF- β 2 with much lower affinity. The type I receptor apparently requires the presence of the type II receptor for TGF- β binding and signal generation.³ For ligands (e.g., TGF- β 2) that have low affinity for the type II receptor, accessory receptors such as betaglycan (type III receptor) may first recruit the ligand and then present it to the signaling complex.⁵

Reagent

Recombinant Mouse Transforming Growth Factor- β Receptor II/Fc Chimera is supplied as approximately 50 μ g of protein lyophilized from a 0.2 μ m filtered solution in phosphate buffered saline.

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 10 μ g/ml.

Storage/Stability

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

Product Profile

Recombinant Mouse Transforming Growth Factor- β Receptor II/Fc Chimera is measured by its ability to inhibit the biological activity of TGF- β 1 on a mouse T cell line, HT2.⁶

The ED₅₀ for this effect is typically 0.3-1.5 ng/ml in the presence of 0.1 ng/ml recombinant human TGF- β 1.

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: >95% as determined by SDS-PAGE, visualized by silver stain.

Endotoxin level is < 0.1 ng/ μ g cytokine as determined by the LAL (Limulus amoebocyte lysate) method.

References

1. Suzuki, A., et al., FEBS Lett., **355**,19 (1994).
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4. Lopez-Casillas, F., et al., J. Cell Biol., **124**, 557 (1994).
5. Lopez-Casillas, F., et al., Cell, **73**, 1435 (1993).
6. Tsang, M., et al., Cytokine, **7**, 389 (1995).

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