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## Tumor Necrosis Factor Receptor Fusion Protein, human recombinant (rHuTNFR-CHO)

<b>Catalog No:</b>	94971
<b>Lot No:</b>	XXXXX
<b>Source:</b>	CHO cells
<b>Synonyms:</b>	Tumor necrosis factor receptor superfamily member 1B, Tumor necrosis factor receptor 2, TNF-R2, Tumor necrosis factor receptor type II, p75, p80 TNF-alpha receptor, CD120b antigen, Etanercept, TBPII, TNFBR, TNFR80, TNF-R75, p75TNFR, TNF-R-II

### Background

TNFR binds specifically to tumor necrosis factor (TNF) and blocks its interaction with cell surface TNF receptors. TNF is a naturally occurring cytokine that is involved in normal inflammatory and immune responses. It plays an important role in the inflammatory processes of rheumatoid arthritis (RA), polyarticular-course juvenile rheumatoid arthritis (JRA), and ankylosing spondylitis and the resulting joint pathology. In addition, TNF plays a role in the inflammatory process of plaque psoriasis. Elevated levels of TNF are found in involved tissues and fluids of patients with RA, psoriatic arthritis, ankylosing spondylitis (AS), and plaque psoriasis. Two distinct receptors for TNF (TNFRs), a 55 kilodalton protein (p55) and a 75 kilodalton protein (p75), exist naturally as monomeric molecules on cell surfaces and in soluble forms. Biological activity of TNF is dependent upon binding to either cell surface TNFR. Recombinant Human TNFR is a dimeric soluble form of the p75 TNF receptor that can bind to two TNF molecules. It inhibits the activity of TNF in vitro and has been shown to affect several animal models of inflammation, including murine collagen-induced arthritis. TNFR inhibits binding of both TNF $\alpha$  and TNF $\beta$  (lymphotoxin alpha [LT $\alpha$ ]) to cell surface TNFRs, rendering TNF biologically inactive. Cells expressing transmembrane TNF that bind to TNFR are not lysed in vitro in the presence or absence of complement. TNFR can also modulate biological responses that are induced or regulated by TNF, including expression of adhesion molecules responsible for leukocyte migration (i.e., E-selectin and to a lesser extent intercellular adhesion molecule-1 [ICAM-1]), serum levels of cytokines (e.g., IL-6), and serum levels of matrix metalloproteinase-3 (MMP-3 or stromelysin).

### Description

Tumor Necrosis Factor Receptor human recombinant produced in CHO cells is a dimeric, glycosylated, polypeptide chain consisting of the extracellular ligand-binding portion of the human 75 kilo Dalton (p75) tumor necrosis factor receptor (TNFR) linked to the Fc portion of human IgG1. The Fc component of TNFR contains the CH2 domain, the CH3 domain and hinge region, but not the CH1 domain of IgG1. It consists of 934 amino acids and has an apparent molecular weight of approximately 150 kilo Daltons. TNFR is purified by standard chromatographic techniques.

### Physical Appearance

Sterile filtered white lyophilized (freeze-dried) powder.

### Formulation

Each mg contains 1.6 mg mannitol, 0.4 mg sucrose and 48  $\mu$ g tromethamine.

### Solubility

It is recommended to reconstitute the lyophilized TNFR in sterile 18 M $\Omega$ -cm H<sub>2</sub>O not less than 100  $\mu$ g/ml, which can then be further diluted to other aqueous solutions.

### Stability

Lyophilized Tumor Necrosis Factor, although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution TNFR should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.



**Purity**

Greater than 98.0% as determined by (a) Analysis by RP-HPLC, (b) Analysis by SDS-PAGE.

**Activity**

Potency is determined by its ability to neutralize TNF-alpha mediated growth inhibition of A375 cells, corresponding to a specific activity of 17,000,000 IU/mg.

**Usage**

**This product is offered by Biomol for research purposes only. Not for diagnostic purposes or human use. It may not be resold or used to manufacture commercial products without written approval of Biomol GmbH.**