



## Tumor Necrosis Factor Receptor Type 2, human recombinant (rhuTNFBR)

**Catalog No:** 99932  
**Lot No:** XXXXX  
**Source:** *E. coli*  
**Synonyms:** Tumor necrosis factor receptor superfamily member 1B, Tumor necrosis factor receptor 2, TNF-R2, Tumor necrosis factor receptor type II, TNF-RII, TNFR-II, p75, p80 TNF-alpha receptor, TNFRSF1B, TNFBR, TNFR2

### Background

TNFR2 belongs to the TNF-receptor superfamily. TNFR2 is a receptor with a high affinity for TNFSF2/TNF- $\alpha$  and approximately five-fold lower affinity for homotrimeric TNFSF1/lymphotoxin-alpha. TNFR2 mediates the majority of the metabolic effects of TNF- $\alpha$ . In addition, knockout studies in mice propose that TNFR2 protects neurons from apoptosis by stimulating antioxidative pathways. TNFR2 expression might have a significant role in the angiogenesis, tumor cell proliferation and metastasis of invasive micropapillary carcinoma of the breast. There are two types of soluble TNF receptors, sTNFR-I and sTNFR-II, which act to neutralize the biological activities of TNF- $\alpha$  and TNF- $\beta$ . The levels of these soluble receptors seem to increase as a result of shedding of the extracellular domains of the membrane bound receptors. High levels of soluble TNF receptors are found in the amniotic fluid of pregnant women. TNFR2 and TNFR1 form a heterocomplex, that mediates the recruitment of two anti-apoptotic proteins, c-IAP1 and c-IAP2, which possess E3 ubiquitin ligase activity. IAPs' function in TNF-receptor signaling is unknown. Nevertheless, c-IAP1 is believed to potentiate TNF-induced apoptosis by the ubiquitination and degradation of TNF-receptor-associated factor 2, which mediates anti-apoptotic signals. Oxidative stress promotes TNFR1 and TNFR2 self-interaction, in addition to ligand-independent and enhanced ligand-dependent TNF signaling. TNF- $\alpha$ , TNFR1 and TNFR2 have roles in cellular differentiation. TNFR1 and TNFR2 function in cell type-specific renal injury.

### Description

TNFR2 Human, produced in *E. coli*, is a single, non-glycosylated polypeptide chain containing 184 amino acids and has a molecular mass of 20 kDa. The TNFR2 is purified by proprietary chromatographic techniques.

### Physical Appearance

Sterile filtered, white, lyophilized (freeze-dried) powder.

### Formulation

TNFR2 was lyophilized from a 0.2  $\mu$ m filtered concentrated solution in PBS (pH 7.4).

### Solubility

It is recommended to reconstitute the lyophilized TNFR2 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 TNFR2, although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution TNFR2 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.

### Amino Acid Sequence

MPAQVAFTPY APEPGSTCRL REYYDQTAQM CCSKCSPGQH AKVFCTKTS D TVCDSCEDST YTQLWNWVPE CLSCGSRCSS  
DQVETQACTR EQNRICTCRP GWYCALSKQE GCRLCAPLRK CRPGFGVARP GTETS DVVCK PCAPGTFSNT TSSTDICRPH  
QICNVVAIPG NASMDAVCTS TSPT

## CONTACT US TODAY

BIOMOL GmbH • Kieler Straße 303a • 22525 Hamburg • Germany • info@biomol.de • www.biomol.de

Fon: +49 (0)40-853 260 0 • TOLL FREE IN GERMANY: Fon: 0800-246 66 51



### Activity

The ED50, as determined by its ability to inhibit the TNF- $\alpha$  mediated cytotoxicity in the L-929 cells, is less than 0.2  $\mu\text{g/ml}$ , corresponding to a specific activity of > 5000 IU/mg in the presence of 0.25 ng/mL of rHuTNF- $\alpha$ .

### Usage

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