

## Product Datasheet

### Human TNF protein (orb594841)

<b>Catalog Number</b>	orb594841
<b>Category</b>	Proteins
<b>Description</b>	This Human TNF protein spans the amino acid sequence from region 77-233aa. Purity: Greater than 95% as determined by SDS-PAGE.
<b>Tag</b>	C-terminal 6xHis-tagged
<b>Form/Appearance</b>	Lyophilized powder
<b>Buffer/Preservatives</b>	Lyophilized from a 0.2 µm filtered 20 mM PB, 150 mM NaCl, pH 7.4
<b>Purity</b>	Greater than 95% as determined by SDS-PAGE.
<b>Protein Sequence</b>	VRSSSRTPSDKPVAVHVVANPQAEGQLQWLNRRANALLANGVELRDNQLVVPSEGLYLIYS QVLFKGGQCPSTHVLLTHTISRIVSYQTKVNLLSAIKSPCQRETPEGAEAKPWYEPIYLGGV FQLEKGDRLSAEINRPDYLDFAESGQVYFGIIAL
<b>Protein Length</b>	Partial
<b>UniProt ID</b>	<b>P01375</b>
<b>MW</b>	18.5 kDa
<b>Application notes</b>	Partial
<b>Endotoxins</b>	Less than 1.0 EU/µg as determined by LAL method.
<b>Source</b>	E.coli
<b>Biological Origin</b>	Homo sapiens (Human)
<b>Biological Activity</b>	The ED50 as determined in a cytotoxicity assay using L-929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D is 10-40 pg/ml.

**Biorbyt Ltd.**

7 Signet Court, Swann Road  
Cambridge  
CB5 8LA  
United Kingdom

Email: [info@biorbyt.com](mailto:info@biorbyt.com), [support@biorbyt.com](mailto:support@biorbyt.com)

Phone: [+44 \(0\)1223 859353](tel:+44(0)1223859353) | Fax: [+1 \(415\) 651-8558](tel:+1(415)651-8558)

**Biorbyt LLC**

68 TW Alexander Drive  
Research Triangle Park  
Durham  
NC 27713  
United States

Email: [info@biorbyt.com](mailto:info@biorbyt.com), [support@biorbyt.com](mailto:support@biorbyt.com)

Phone: [+1 \(415\) 906-5211](tel:+1(415)906-5211) | Fax: [+1 \(415\) 651-8558](tel:+1(415)651-8558)

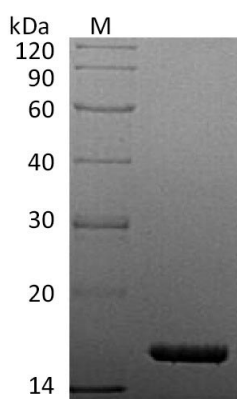
**Expression Region** 77-233aa

**Storage** The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.

**Background** Tumor Necrosis Factor- $\alpha$  (TNF- $\alpha$ ) is secreted by macrophages, monocytes, neutrophils, T-cells, and NK-cells following stimulation by bacterial LPS. Cells expressing CD4 secrete TNF- $\alpha$  while cells that express CD8 secrete little or no TNF- $\alpha$ . Synthesis of TNF- $\alpha$  can be induced by many different stimuli including interferons, IL2, and GM-CSF. The clinical use of the potent anti-tumor activity of TNF- $\alpha$  has been limited by the proinflammatory side effects such as fever, dose-limiting hypotension, hepatotoxicity, intravascular thrombosis, and hemorrhage. Designing clinically applicable TNF- $\alpha$  mutants with low systemic toxicity has been of intense pharmacological interest. Human TNF- $\alpha$  that binds to murine TNF-R55 but not murine TNF-R7, exhibits retained anti-tumor activity and reduced systemic toxicity in mice compared with murine TNF- $\alpha$ , which binds to both murine TNF receptors. Based on these results, many TNF- $\alpha$  mutants that selectively bind to TNF-R55 have been designed. These mutants displayed cytotoxic actitumor cell lines in vitro and have exhibited lower systemic toxicity in vivo. Recombinant Human TNF- $\alpha$  High Active Mutant differs from the wild-type by amino acid substitution of amino acids 1-7 with Arg8, Lys9, Arg10 and Phe157. This mutant form has been shown to have increased activity with less inflammatory side effects in vivo

**Note** For research use only

**Expiration Date** 6 months from date of receipt.



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

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7 Signet Court, Swann Road  
Cambridge  
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United Kingdom

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Phone: +44 (0)1223 859353 | Fax: +1 (415) 651-8558

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Phone: +1 (415) 906-5211 | Fax: +1 (415) 651-8558