

## GMP Grade, Recombinant Human TNF- $\alpha$

**Cat#:** C-BETA014

**Size:** 100 $\mu$ g, 1mg

**Source:** *Escherichia coli*.

### Product Information

**Molecular Weight:** Approximately 17.48 kDa, a single non-glycosylated polypeptide chain containing 158 amino acids.

**Description :** Accession # P01375, E. coli-derived human TNF-alpha protein Val77-Leu233 with an N-terminal Met.

**SDS-PAGE:** 17.48 kDa, reducing conditions

**Purity:** > 95 %, as determined by SDS-PAGE, under reducing non-reducing conditions, visualized by coomassie staining.

**Endotoxin:** Less than 0.01 EU/ $\mu$ g of TNF- $\alpha$  as determined by kinetic Limulus Amoebocyte Lysate (LAL) assay.

**Biological Activity:** Recombinant human TNF- $\alpha$  bioactivity is measured in a cytotoxicity assay using L-929 mouse fibroblast cells, the EC50 for this effect is 0.1168-0.1562 ng/mL.

**Physical Appearance:** Sterile Filtered White lyophilized (freeze-dried) powder.

**Formulation:** Lyophilized from a 0.2  $\mu$ m filtered solution in PBS.

**Reconstitution:** We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute to a concentration of 0.1-1.0 mg/mL in **sterile distilled H<sub>2</sub>O**. Stock solutions should be apportioned into working aliquots and stored at -20 °C to -70 °C. Further dilutions should be made in appropriate buffered solutions. **Do not reconstitute in cell culture media directly.**

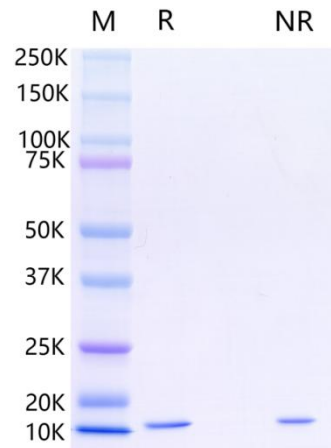
**Shipping:** 2 °C to 8 °C. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage:** Use a manual defrost freezer and avoid repeated freeze-thaw cycles. A minimum of 12 months from date of shipping when stored at -20 °C to -70 °C as supplied. 4 weeks at 2 °C to 8 °C under sterile conditions after reconstitution. 4 months at -20 °C to -70 °C under sterile conditions after reconstitution

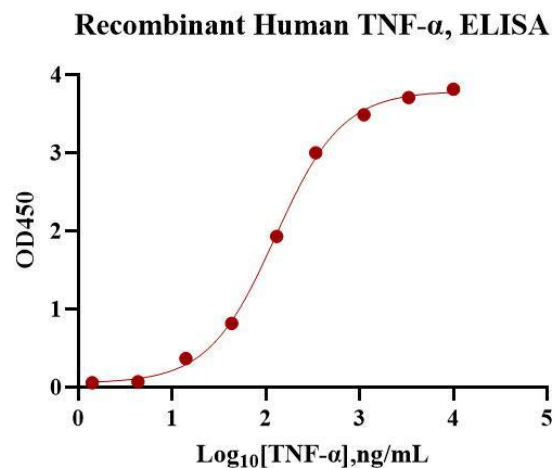
**Usage:** Biogradetech TNF- $\alpha$  product can be used for a variety of ex vivo cell culture applications such as research or further manufacturing.

**Quality statement:** No animal- or human-derived materials were used for the manufacture of this product, unless otherwise stated in the respective Certificate of Origin.

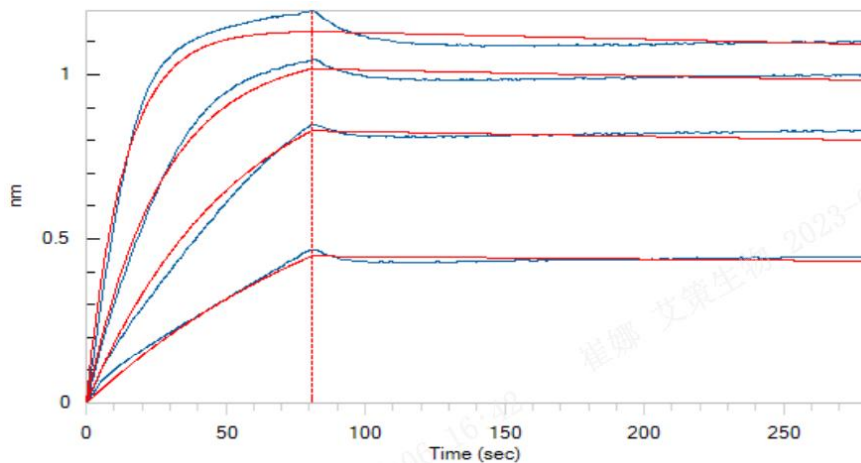
## DATA



**SDS-PAGE:** Recombinant Human TNF- $\alpha$  Protein SDS-PAGE 1  $\mu$ g/lane of Recombinant Human TNF- $\alpha$  (Catalog# C-BETA014) was resolved with SDS- PAGE under reducing (R) and non-reducing (NR) conditions visualized by coomassie staining showing a single band at 17 kDa.

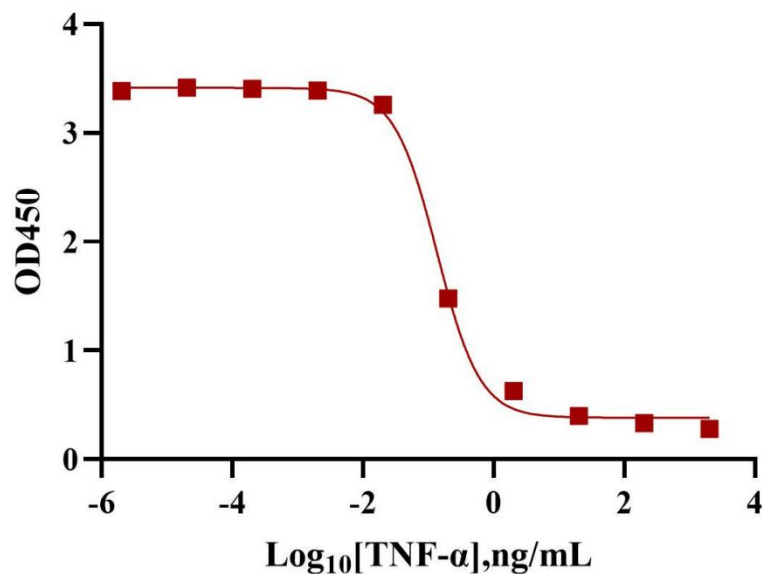


**Bioactivity-ELISA:** Immobilized Recombinant human TNF-  $\alpha$  (Catalog#C-BETA014) at 0.2  $\mu$ g/well can bind human TNF-  $\alpha$  R1 with a linear range of 109.8 to 143.8 ng/mL.



**Bioactivity-BLI:** Loaded Human TNF- $\alpha$  R1, can bind Recombinant Human TNF- $\alpha$  (Catalog# C-BETA014) with an affinity constant of 0.119 nM as determined in BLI assay (Octet®R8).

### Cytotoxicity of TNF- $\alpha$ on L-929 cells



**Bioactivity-Cell based assay:** Recombinant human TNF- $\alpha$  (Catalog# C-BETA014) bioactivity is measured in a cytotoxicity assay using L-929 mouse fibroblast cells, the EC<sub>50</sub> for this effect is 0.1168 to 0.1562 ng/mL.

## References

1. Horiuchi T, Mitoma H, Harashima S, Tsukamoto H, Shimoda T. Transmembrane TNF-alpha: structure, function and interaction with anti-TNF agents. *Rheumatology (Oxford)*. 2010 Jul;49(7):1215-28.
2. Aggarwal, B. B. (2003). Signalling pathways of the TNF superfamily: a double-edged sword. *Nature reviews immunology*, 3(9), 745-756.
3. Jang DI, Lee AH, Shin HY, Song HR, Park JH, Kang TB, Lee SR, Yang SH. The Role of Tumor Necrosis Factor Alpha (TNF- $\alpha$ ) in Autoimmune Disease and Current TNF- $\alpha$  Inhibitors in Therapeutics. *Int J Mol Sci*. 2021 Mar 8;22(5):2719.

### Note:

The product listed herein is for research use only and is not intended for use in human or clinical diagnosis.