

# Human TNF-alpha Protein, His Tag, active trimer (MALS verified)

Catalog # TNA-H5228



BIOSYSTEMS  
**Acro**  
Surprise Inside!

## Synonym

DIF, TNF-alpha, TNFA, TNFSF2, cachexin, cachectin, TNF $\alpha$

## Source

Human TNF-alpha Protein, His Tag(TNA-H5228) is expressed from human 293 cells (HEK293). It contains AA Val 77 - Leu 233 (Accession # [NP\\_000585.2](#)).

Predicted N-terminus: Val 77

## Molecular Characterization

TNF-alpha(Val 77 - Leu 233)  
NP\_000585.2 Poly-his

This protein carries a polyhistidine tag at the C-terminus.

The protein has a calculated MW of 18.3 kDa. The protein migrates as 17-19 kDa when calibrated against [Star Ribbon Pre-stained Protein Marker](#) under reducing (R) condition (SDS-PAGE) due to glycosylation.

## Endotoxin

Less than 1.0 EU per  $\mu$ g by the LAL method.

## Purity

>95% as determined by SDS-PAGE.

>95% as determined by SEC-MALS.

## Formulation

Lyophilized from 0.22  $\mu$ m filtered solution in PBS, pH7.4 with trehalose as protectant.

Contact us for customized product form or formulation.

## Reconstitution

Please see Certificate of Analysis for specific instructions.

*For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.*

## Storage

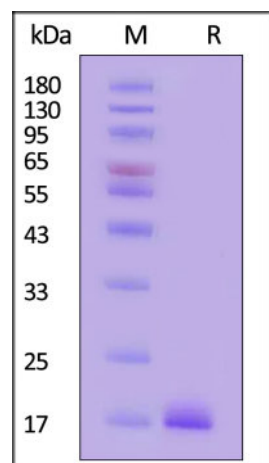
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

*Please avoid repeated freeze-thaw cycles.*

This product is stable after storage at:

- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

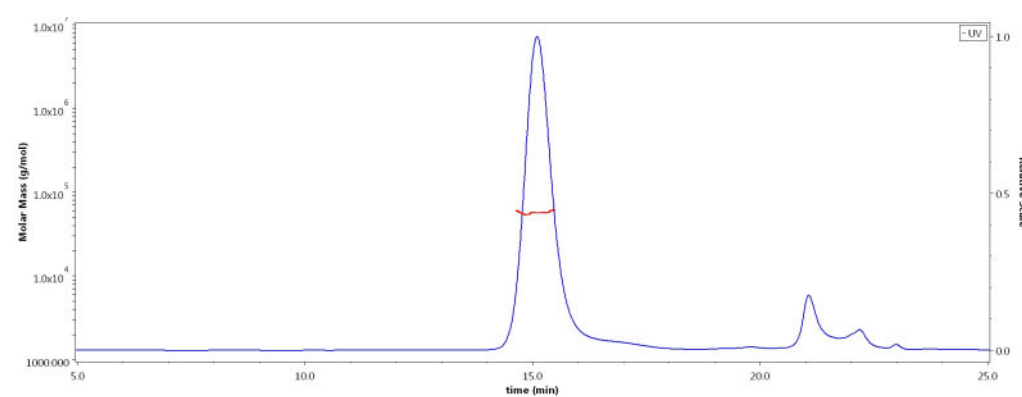
## SDS-PAGE



Human TNF-alpha Protein, His Tag on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95% (With [Star Ribbon Pre-stained Protein Marker](#)).

## Bioactivity-ELISA

## SEC-MALS



The purity of Human TNF-alpha Protein, His Tag (Cat. No. TNA-H5228) is more than 95% and the molecular weight of this protein is around 55-70 kDa verified by SEC-MALS.

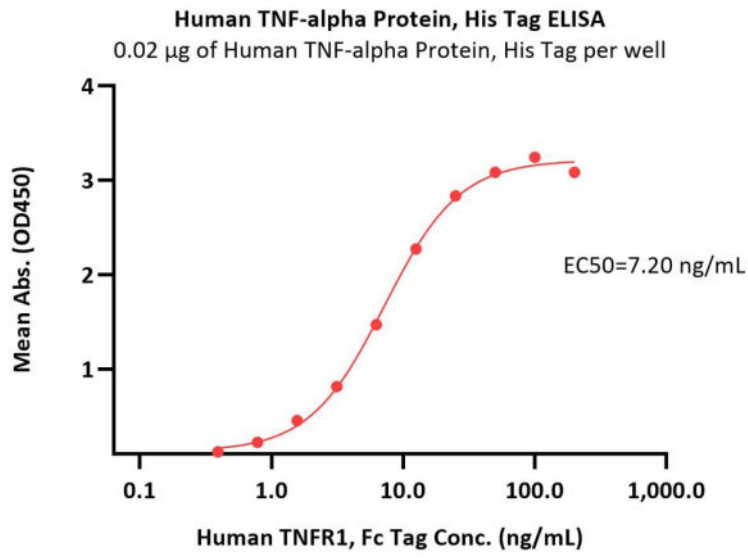
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and more!



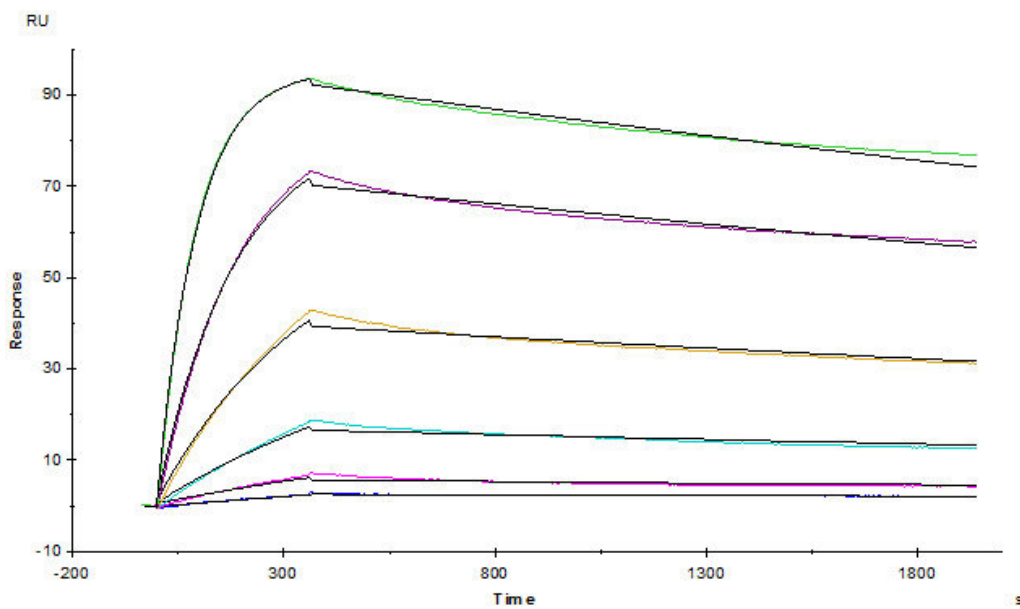
[www.acrobiosystems.com](http://www.acrobiosystems.com)

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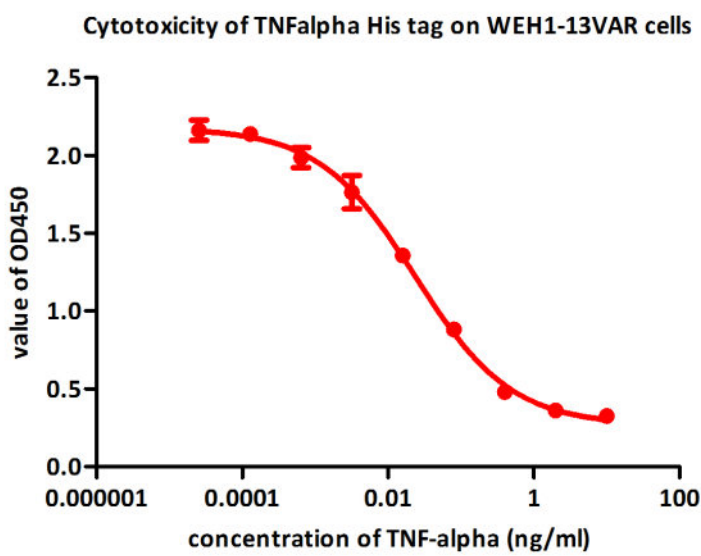
Immobilized Human TNF-alpha Protein, His Tag (Cat. No. TNA-H5228) at 0.2 µg/mL (100 µL/well) can bind Human TNFR1, Fc Tag (Cat. No. TN1-H5251) with a linear range of 0.4-13 ng/mL (QC tested).

**Bioactivity-SPR**

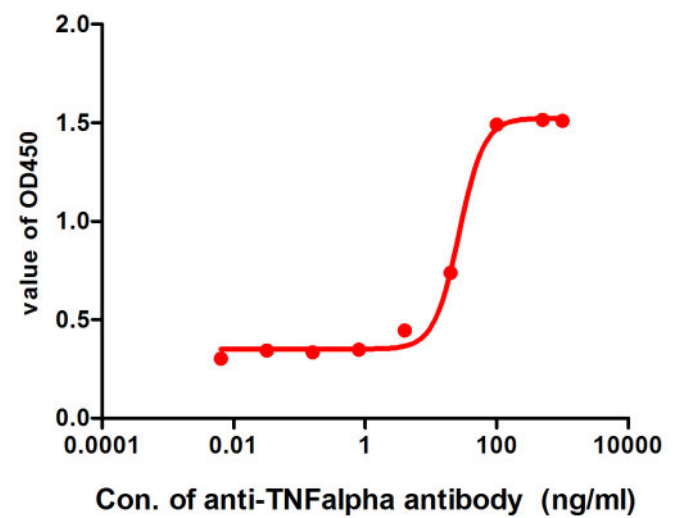


Humira (Adalimumab) captured on CM5 chip via anti-human IgG Fc antibodies surface, can bind Human TNF-alpha Protein, His Tag (Cat. No. TNA-H5228) with an affinity constant of 0.244 nM as determined in a SPR assay (Biacore T200) (Routinely tested).

**Bioactivity-Bioactivity CELL BASE**



**Inhibiting effect of Adalimumab in TNF-alpha cytotoxicity assay**



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**Human TNF-alpha Protein, His Tag (Cat. No. TNA-H5228) induces cytotoxicity effect on the WEH1-13VAR cells in the presence of the metabolic inhibitor actinomycin D. The EC50 for this effect is 0.013-0.074 ng/mL (Routinely tested).**

Neutralization assay shows that the cytotoxicity effect of Human TNF-alpha Protein, His Tag (Cat. No. TNA-H5228) was inhibited by increasing concentration of Adalimumab. The concentration of TNF-alpha used is 1 ng/mL. The IC50 is 26.8 ng/mL (Routinely tested).

### Background

Tumor necrosis factor alpha (TNF $\alpha$ ) is a cytokine produced primarily by monocytes and macrophages. It is found in synovial cells and macrophages in the tissues. The primary role of TNF $\alpha$  is in the regulation of immune cells. TNF $\alpha$  is able to induce apoptotic cell death, to induce inflammation, and to inhibit tumorigenesis and viral replication. Dysregulation of TNF $\alpha$  production has been implicated in a variety of human diseases, including major depression, Alzheimers disease and cancer. Recombinant TNF $\alpha$  is used as an immunostimulant under the INN tasonermin. TNF $\alpha$  can be produced ectopically in the setting of malignancy and parallels parathyroid hormone both in causing secondary hypercalcemia and in the cancers with which excessive production is associated.

### Clinical and Translational Updates

Please contact us via [TechSupport@acrobiosystems.com](mailto:TechSupport@acrobiosystems.com) if you have any question on this product.

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