

Recombinant Human TNF protein, low endotoxin (HPLC-verified)

Cat. No. TNF-511H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Recombinant Human TNF protein (Val77-Leu233)(low endotoxin, HPLC-verified) carries no tag and was expressed in human 293 cells (HEK293).
Species	Human
Source	HEK293
ProteinLength	157
Description	Tumor necrosis factor alpha (TNFα) is a cytokine produced primarily by monocytes and macrophages. It is found in synovial cells and macrophages in the tissues. The primary role of TNFα is in the regulation of immune cells. TNFα is able to induce apoptotic cell death, to induce inflammation, and to inhibit tumorigenesis and viral replication. Dysregulation of TNFα production has been implicated in a variety of human diseases, including major depression, Alzheimer's disease and cancer. Recombinant TNFα is used as an immunostimulant under the INN tasonermin. TNFα 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.
Form	Lyophilized from 0.22 um filtered solution in PBS, pH7.4, 10% trehalose.
Molecular Mass	The protein has a calculated MW of 17.4 kDa. The protein migrates as 17 kDa and 18

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	kDa under reducing (R) condition (SDS-PAGE).
Endotoxin	Less than 0.1 EU per ug by the LAL method.
Purity	>95% as determined by SDS-PAGE.
Storage	For long term storage, the product should be stored at lyophilized state at -20 centigrade or lower. Please avoid repeated freeze-thaw cycles. This product is stable after storage at: -20 centigrade to -70 centigrade for 12 months in lyophilized state; -70 centigrade for 3 months under sterile conditions after reconstitution.
Reconstitution	It is recommended that sterile water be added to the vial to prepare a stock solution of 0.2 ug/ul. Centrifuge the vial at 4°C before opening to recover the entire contents.

GENE INFORMATION

Gene Name	TNF
Official Symbol	TNF
Synonyms	TNF; tumor necrosis factor; TNFA, tumor necrosis factor (TNF superfamily, member 2); DIF; TNF superfamily; member 2; TNF alpha; TNFSF2; TNF-α; cachectin; APC1 protein; TNF, monocyte-derived; TNF, macrophage-derived; TNF superfamily, member 2; tumor necrosis factor alpha; tumor necrosis factor-alpha; tumor necrosis factor ligand superfamily member 2; TNFA; TNF-alpha
Gene ID	7124
mRNA Refseq	NM_000594

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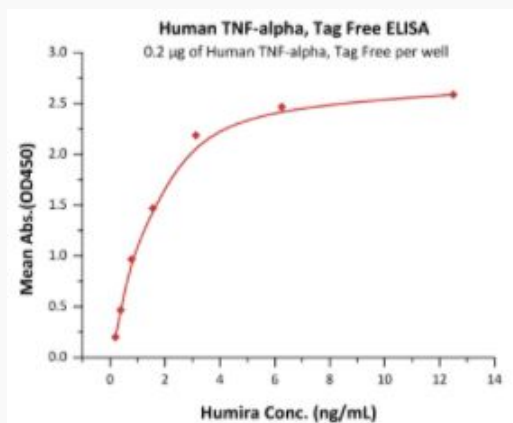
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Protein Refseq NP_000585

MIM 191160

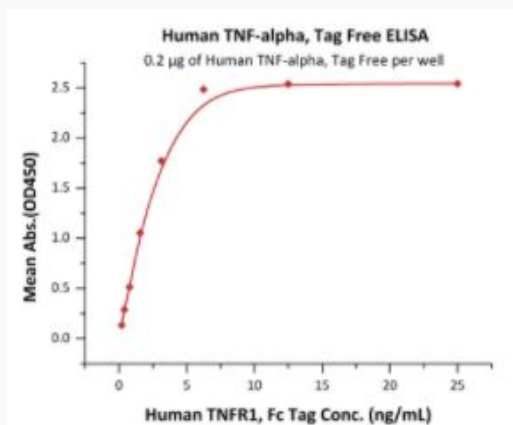
UniProt ID P01375

**Bioactivity-ELISA of
TNF-511H**



Immobilized Human TNF-alpha, Tag Free, low endotoxin (HPLC-verified) at 2 µg/mL (100 µL/well) can bind Humira with a linear range of 0.2-2 ng/mL (QC tested).

**Bioactivity-ELISA of
TNF-511H**



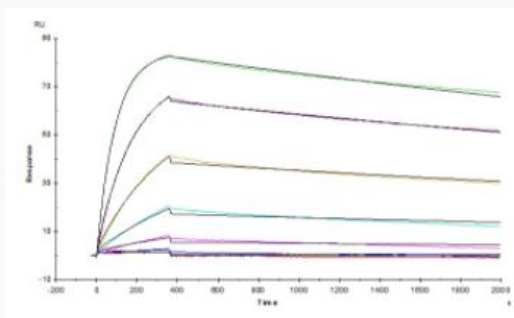
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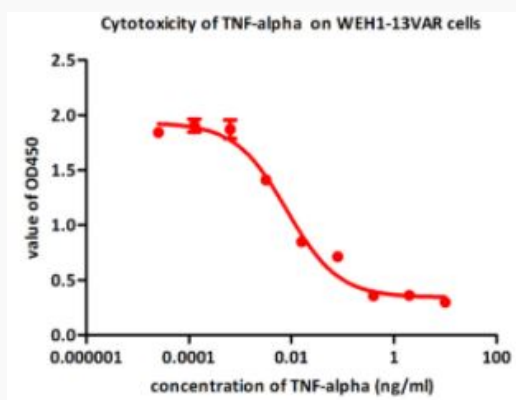
Immobilized Human TNF-alpha, Tag Free, low endotoxin (HPLC-verified) at 2 µg/mL (100 µL/well) can bind Human TNFR1, Fc Tag with a linear range of 0.2-3 ng/mL (Routinely tested).

Bioactivity-SPR of TNF-511H



Humira (Adalimumab) captured on CM5 chip via anti-human IgG Fc antibodies surface, can bind ActiveMax® Human TNF-alpha, Tag Free, low endotoxin (HPLC-verified) with an affinity constant of 0.255 nM as determined in a SPR assay (Routinely tested).

Bioactivity-Cell based assay of TNF-511H



Human TNF-alpha, Tag Free, low endotoxin (HPLC-verified) induces cytotoxicity

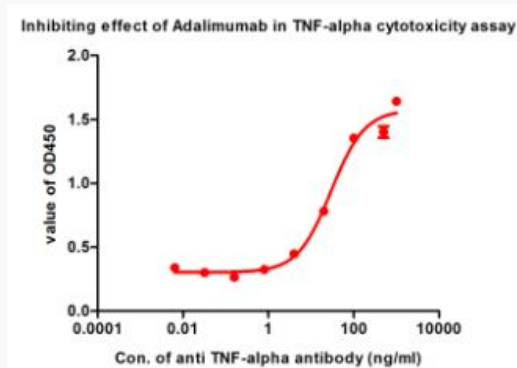
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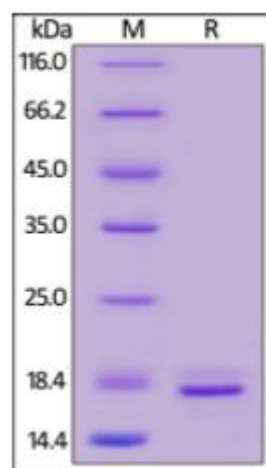
effect on the WEH1-13VAR cells in the presence of the metabolic inhibitor actinomycin D. The EC₅₀ for this effect is 0.007-0.014 ng/ml (Routinely tested).

Bioactivity-Cell based assay of TNF- 511H



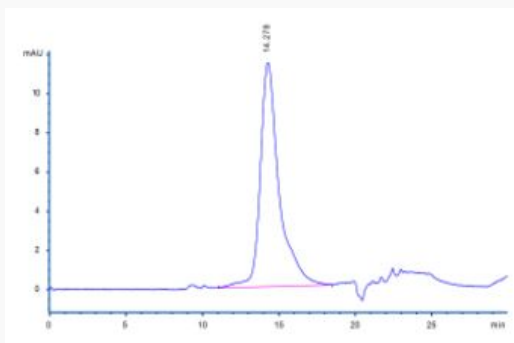
Neutralization assay shows that the cytotoxicity effect of Human TNF-alpha, Tag Free, low endotoxin (HPLC-verified) was inhibited by increasing concentration of Adalimumab. The concentration of TNF-alpha used is 1 ng/mL. The IC₅₀ is 29 ng/mL (Routinely tested).

SDS-PAGE of TNF- 511H



Human TNF-alpha, Tag Free, low endotoxin (HPLC-verified) on SDS-PAGE under reducing (R) condition. The gel was stained overnight with Coomassie Blue. The purity of the protein is greater than 95%.

SEC-HPLC of TNF-511H



A SEC-HPLC analysis showing over 95% of Human TNF-alpha, Tag Free, low endotoxin (HPLC-verified) present as active trimers with a molecular mass of 54 kDa.

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