

## Recombinant Human TNF-alpha/TNFA Protein (aa 57-233, His Tag)

Catalog Number: PKSH033165

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

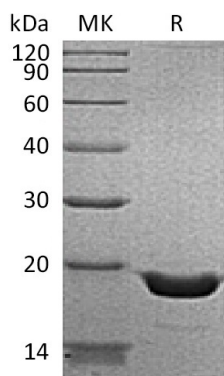
### Description

|                      |  |
|----------------------|--|
| <b>Species</b>       | Human  |
| <b>Source</b>        | E.coli-derived Human TNF-alpha/TNFA protein Gly57-Leu233, with an N-terminal His   |
| <b>Calculated MW</b> | 21.8 kDa   |
| <b>Observed MW</b>   | 18 kDa   |
| <b>Accession</b>     | P01375   |
| <b>Bio-activity</b>  | Measured in a cytotoxicity assay using L- 929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. The ED <sub>50</sub> for this effect is 30-150 pg/ml. |

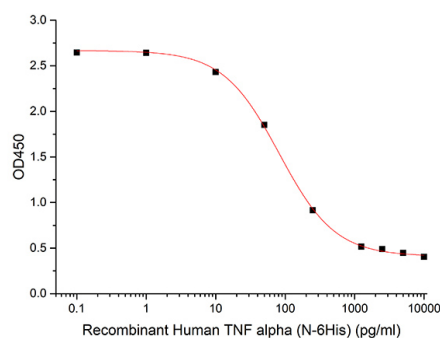
### Properties

|                       |   |
|-----------------------|---|
| <b>Purity</b>         | > 95 % as determined by reducing SDS-PAGE.  |
| <b>Endotoxin</b>      | < 1.0 EU per µg of the protein as determined by the LAL method.   |
| <b>Storage</b>        | Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.                         |
| <b>Shipping</b>       | This product is provided as lyophilized powder which is shipped with ice packs.   |
| <b>Formulation</b>    | Lyophilized from a 0.2 µm filtered solution of 20mM PB, 100mM NaCl, pH 8.0. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.<br>Please refer to the specific buffer information in the printed manual. |
| <b>Reconstitution</b> | Please refer to the printed manual for detailed information.  |

### Data



> 95 % as determined by reducing SDS-PAGE.



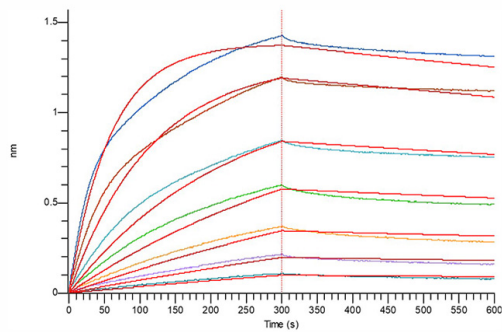
Measured in a cytotoxicity assay using L- 929 mouse fibroblast cells in the presence of the metabolic inhibitor actinomycin D. The ED<sub>50</sub> for this effect is 30-150 pg/ml.

### For Research Use Only

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Loaded Human TNF alpha-His(PKSH033165) on HIS1K Biosensor, can bind Human TNF RII-mFc(PKSH033484) with an affinity constant of 1.83 nM as determined in BLI assay.

## 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 activities on tumor 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.

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