Store at -20°C

Human TGF-α Recombinant Protein

#44909

25 µg

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Entrez-Gene ID #7039
UniProt ID #P01135

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Background: Transforming growth factor alpha (TGF-alpha) is a member of the epidermal growth factor (EGF) family, sharing the same receptor, EGFR, and regulating cell proliferation, survival, and differentiation (1). Members of the family share an EGF-like domain of 45-60 amino acids characterized by the conservation of six regularly spaced cysteines, forming three disulfide bonds that function as their receptor binding domain. TGF-alpha was initially discovered in the media of retrovirally transformed fibroblasts, and its name comes from its ability to induce transformation in cultured fibroblasts (2). This transforming activity was later shown to require TGF-beta, which potentiates the activity of TGF-alpha through a separate receptor (3). Soluble TGF-alpha is released from its membrane-bound precursor, pro-TGF-alpha, following protolytic cleavage, but the membrane bound precursor is still able to bind and activate EGFR (4). Binding of soluble or membrane bound TGF-alpha to EGFR leads to receptor dimerization, tyrosine autophosphorylation, and activation of downstream signaling components. TGF-alpha and related peptides play an important role in the progression of cancer as well as in neuropathological processes (5,6).

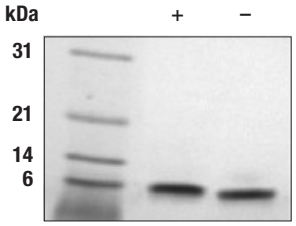
Molecular Weight: 5.6 kDa

Endotoxin: Endotoxin levels are ≤ 1 EU / 1 µg hTGF-α.

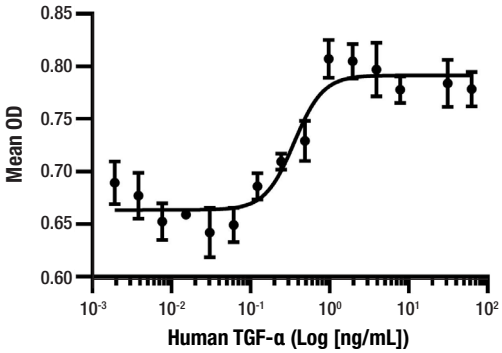
Purity: ≥ 95% purity was determined by SDS-PAGE.

Source/Purification: Recombinant human TGF-α was expressed in Balb/c-3T3 cells and is supplied in a lyophilized form.

Bioactivity: The bioactivity of recombinant hTGF-α was determined in a Balb/c-3T3 cell proliferation assay. The ED_{50} of each lot is ≤ 2 ng/ml.



The purity of Human TGF-α Recombinant Protein was determined by SDS-PAGE of 1 µg reduced (+) and non-reduced (-) recombinant hTGF-α and staining with Coomassie Blue.



Serial dilutions of Human TGF-α Recombinant Protein were added to Balb/c-3T3 cells. Cell proliferation was measured and the linear portion of the curve was used to calculate the ED_{50}.

Storage: Human TGF-α Recombinant Protein is supplied as lyophilized material that is very stable at -20°C. It is recommended to reconstitute with sterile 10 mM HCl at a concentration of 0.1 mg/ml which can be further diluted in aqueous solutions as needed. Addition of a carrier protein (0.1% HSA or BSA) is recommended for long-term storage.

Background References:

(1) Derynck, R. (1986) *J Cell Biochem* 32, 293-304.

(2) de Larco, J.E. and Todaro, G.J. (1978) *Proc Natl Acad Sci U S A* 75, 4001-5.

(3) Roberts, A.B. et al. (1981) *Proc Natl Acad Sci U S A* 78, 5339-43.

(4) Wong, S.T. et al. (1989) *Cell* 56, 495-506.

(5) Rusch, V. et al. (1996) *Cytokine Growth Factor Rev* 7, 133-41.

(6) Junier, M.P. (2000) *Prog Neurobiol* 62, 443-73.

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Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.