

# Recombinant Human Transforming Growth Factor - alpha (rHuTGF- $\alpha$ )

## PrimeGene Technical DataSheet

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<b>Catalog Number:</b>	105-41G
<b>Source:</b>	<i>Escherichia coli</i>
<b>Molecular Weight:</b>	Approximately 6 kDa, a single non-glycosylated polypeptide chain containing 50 amino acids.
<b>Size:</b>	5 $\mu$ g/100 $\mu$ g/500 $\mu$ g/1 mg
<b>AA Sequence:</b>	MVVSHFNDPCDSHTQFCFHGTCRFLVQEDKPACVCHSGYVGARCEHADLLA
<b>Purity:</b>	>95% by SDS-PAGE analyses.
<b>Biological Activity:</b>	Testing in progress.
<b>Physical Appearance:</b>	Sterile Filtered White lyophilized (freeze-dried) powder.
<b>Formulation:</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS, with 0.02% Tween-20, pH 7.0.
<b>Endotoxin:</b>	Less than 0.1 EU/ $\mu$ g of rHuTGF- $\alpha$ as determined by LAL method.
<b>Reconstitution:</b>	Prior to opening, it is recommended to centrifuge the vial briefly to bring the contents down the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1% BSA to a concentration of 0.1-1.0 mg/mL. If animal-origin-free condition is expected in your product, then sterile distilled water is recommended. Stock solutions should be apportioned into working aliquots and stored at $\leq -20$ °C. Further dilutions should be made in appropriate buffered solutions. Do not reconstitute in cell culture media directly.
<b>Shipping:</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage:</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"><li>● A minimum of 12 months from date of receipt, when stored at <math>\leq -20</math> °C as supplied.</li><li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li><li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li></ul>
<b>Usage:</b>	This material is offered by Shanghai PrimeGene Bio-Tech for research, laboratory or further evaluation purposes. <b>NOT FOR HUMAN USE.</b>

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### ***Human Transforming Growth Factor - alpha***

TGF-alpha was originally isolated from the conditioned media of oncogenically transformed cells as an EGF-like bioactivity. TGF-alpha is a member of the EGF family of cytokines that are synthesized as transmembrane precursors and are characterized by the presence of one or several EGF structural units in their extracellular domain. The soluble forms of these cytokines are released from the transmembrane protein by proteolytic cleavage. Membrane-bound proTGF-alpha is biologically active and seems to play a role in mediation of cell-cell adhesion and in juxtacrine stimulation of adjacent cells. Expression of TGF-alpha is widespread in tumors and transformed cells. TGF-alpha is also expressed in normal tissues during embryogenesis and in adult tissues, including pituitary, brain, keratinocytes and macrophages. Mature TGF-alpha shows approximately 93% amino acid sequence identity with mouse or rat TGF-alpha and is not species specific in its biological effects.

TGF-alpha binds to the EGF receptor and activates the receptor tyrosine kinase. Accordingly, TGF-alpha shows a similar potency to EGF as a mitogen for fibroblasts and as an inducer of epithelial development in vivo. TGF-alpha is reportedly more potent than EGF as an angiogenic factor in vivo and as a stimulator for keratinocyte migration. The EGF receptor gene represents the cellular homologue of the avian v-erb-B oncogene.