

**DESCRIPTION**

**Source** *E. coli*-derived  
Val40-Ala89  
Accession # P01135

**N-terminal Sequence Analysis** Val40

**Predicted Molecular Mass** 6 kDa

**SPECIFICATIONS**

**Activity** Measured in a cell proliferation assay using Balb/3T3 mouse embryonic fibroblast cells. Marquardt, H. *et al.* (1984) *Science* **223**:1079. The ED<sub>50</sub> for this effect is 0.1-0.4 ng/mL.

**Endotoxin Level** <0.01 EU per 1  $\mu$ g of the protein by the LAL method.

**Purity** >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation** Lyophilized from a 0.2  $\mu$ m filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 100  $\mu$ g/mL in sterile 10 mM Acetic Acid.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**BACKGROUND**

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.