

#### DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human TGF- $\alpha$ in ELISAs and Western blots. In sandwich immunoassays, less than 0.05% cross-reactivity with recombinant human (rh) TGF- $\beta$ 1, rhAmphiregulin, rhBetacellulin, rhEGF, rhHRG- $\alpha$ , and rhSMDF is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human TGF- $\alpha$ Val40-Ala89 Accession # P01135
<b>Endotoxin Level</b>	<0.10 EU per 1 $\mu$ g of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

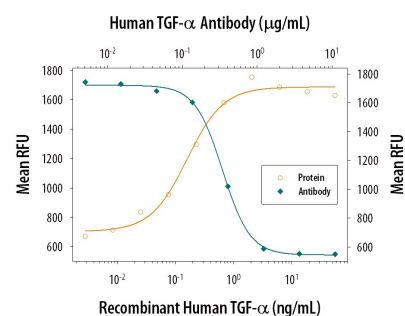
#### APPLICATIONS

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
<b>Western Blot</b>	0.1 $\mu$ g/mL	Recombinant Human TGF- $\alpha$ (Catalog # 239-A)
<b>Immunohistochemistry</b>	5-15 $\mu$ g/mL	See Below
<b>Human TGF-<math>\alpha</math> Sandwich Immunoassay</b>		<b>Reagent</b>
<b>ELISA Capture</b>	0.2-0.8 $\mu$ g/mL	Human TGF- $\alpha$ Antibody (Catalog # AF-239-NA)
<b>ELISA Detection</b>	0.1-0.4 $\mu$ g/mL	Human TGF- $\alpha$ Biotinylated Antibody (Catalog # BAF239)
<b>Standard</b>		Recombinant Human TGF- $\alpha$ (Catalog # 239-A)
<b>Neutralization</b>	Measured by its ability to neutralize TGF- $\alpha$ -induced proliferation in the Balb/3T3 mouse embryonic fibroblast cell line. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.15-0.75 $\mu$ g/mL in the presence of 3 ng/mL Recombinant Human TGF- $\alpha$ .	

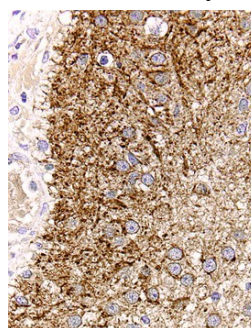
#### DATA

##### Neutralization



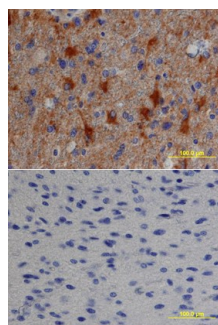
**Cell Proliferation Induced by TGF- $\alpha$  and Neutralization by Human TGF- $\alpha$  Antibody.** Recombinant Human TGF- $\alpha$  (Catalog # 239-A) stimulates proliferation in the Balb/3T3 mouse embryonic fibroblast cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human TGF- $\alpha$  (3 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human TGF- $\alpha$  Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-239-NA). The ND<sub>50</sub> is typically 0.15-0.75  $\mu$ g/mL.

##### Immunohistochemistry



**TGF- $\alpha$  in Human Astrocytoma.** TGF- $\alpha$  was detected in immersion fixed paraffin-embedded sections of human astrocytoma using 15  $\mu$ g/mL Goat Anti-Human TGF- $\alpha$  Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-239-NA) overnight at 4 °C. Before incubation with the primary antibody tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained with the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

##### Immunohistochemistry



**TGF- $\alpha$  in Human Astrocytoma.** TGF- $\alpha$  was detected in immersion fixed paraffin-embedded sections of human astrocytoma using Goat Anti-Human TGF- $\alpha$  Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-239-NA) at 15  $\mu$ g/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Lower panel shows a lack of labeling if primary antibodies are omitted and tissue is stained only with secondary antibody followed by incubation with detection reagents. View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. 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>● 12 months from date of receipt, -20 to -70 °C as supplied.</li><li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li><li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li></ul>

## 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.