Human TGF-α Antibody

Antigen Affinity-purified Polyclonal Goat IgG

Catalog Number: AF-239-NA

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human TGF-α in ELISAs and Western blots. In sandwich immunoassays, less than 0.05% cross-reactivity with recombinant human (rh) TGF-β1, rhAmphiregulin, rhBetacellulin, rhEGF, rhHRG-α, and rhSMDF is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant human TGF-α Val40-Ala89 Accession # P01135
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.

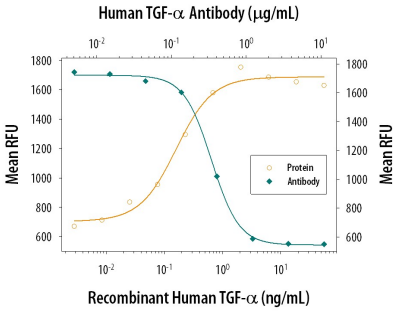
APPLICATIONS

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
Western Blot	0.1 µg/mL	Recombinant Human TGF-α (Catalog # 239-A)
Immunohistochemistry	5-15 µg/mL	See Below
Human TGF-α Sandwich Immunoassay		**Reagent**
ELISA Capture	0.2-0.8 µg/mL	Human TGF-α Antibody (Catalog # AF-239-NA)
ELISA Detection	0.1-0.4 µg/mL	Human TGF-α Biotinylated Antibody (Catalog # BAF239)
Standard		Recombinant Human TGF-α (Catalog # 239-A)
Neutralization	Measured by its ability to neutralize TGF-α-induced proliferation in the Balb/3T3 mouse embryonic fibroblast cell line. The Neutralization Dose (ND_{50}) is typically 0.15-0.75 µg/mL in the presence of 3 ng/mL Recombinant Human TGF-α.	

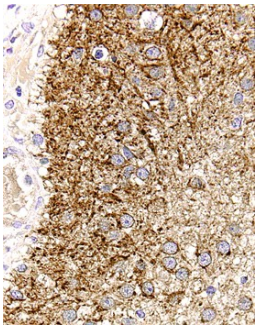
DATA

Neutralization



Cell Proliferation Induced by TGF-α and Neutralization by Human TGF-α Antibody. Recombinant Human TGF-α (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-α (3 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human TGF-α Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-239-NA). The ND_{50} is typically 0.15-0.75 µg/mL.

Immunohistochemistry



TGF-α in Human Astrocytoma. TGF-α was detected in immersion fixed paraffin-embedded sections of human astrocytoma using 15 µg/mL Goat Anti-Human TGF-α 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.

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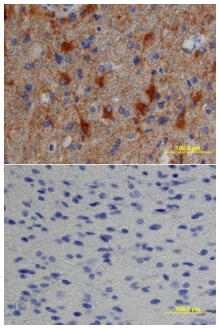
Immunohistochemistry



TGF-α in Human Astrocytoma. TGF-α was detected in immersion fixed paraffin-embedded sections of human astrocytoma using Goat Anti-Human TGF-α Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-239-NA) at 15 µg/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

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
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. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

TGF-α was originally isolated from the conditioned media of oncogenically transformed cells as an EGF-like bioactivity. TGF-α 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-α 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-α is widespread in tumors and transformed cells. TGF-α is also expressed in normal tissues during embryogenesis and in adult tissues, including pituitary, brain, keratinocytes and macrophages. Mature TGF-α shows approximately 93% amino acid sequence identity with mouse or rat TGF-α and is not species specific in its biological effects.

TGF-α binds to the EGF receptor and activates the receptor tyrosine kinase. Accordingly, TGF-α shows a similar potency to EGF as a mitogen for fibroblasts and as an inducer of epithelial development *in vivo*. TGF-α 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.

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