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Product Information

Anti-Transforming Growth Factor-β1
produced in chicken, affinity isolated antibody

Catalog Number **T0688**

Synonym: Anti-TGF-β1

Product Description

Anti-Transforming Growth Factor-β1 is produced in chicken using recombinant human TGF-β1 expressed in CHO cells as immunogen. The antibody is purified using human TGF-β1 affinity chromatography.

Anti-Transforming Growth Factor-β1 will recognize recombinant human TGF-β1 and pTGF-β1.2 by various immunochemical techniques including neutralization and immunoblotting.

Transforming Growth Factor-β1 is a multifunctional peptide capable of influencing cell proliferation, differentiation, and other functions in a wide range of cell types. Transformed, as well as non-neoplastic, tissues release transforming growth factors; and essentially all cells possess a specific TGF-1 receptor.[1] The multi-modal nature of TGF-β1 is seen in its ability to stimulate or inhibit cellular proliferation. In general, cells of mesenchymal origin appear to be stimulated by TGF-β1 whereas hepatocytes, T and B lymphocytes, keratinocytes and many epithelial cells are inhibited by the peptide.[2, 3, 4, 5, 6]

TGF-β1 interacts with Epidermal Growth Factor (EGF), Platelet Derived Growth Factor (PDGF), Fibroblast Growth Factor (FGF), and Interleukin-2 (IL-2) either by enhancing or antagonizing their characteristic actions.[1] TGF-β1 plays a fundamental role in tissue growth and differentiation by involvement in adipogenesis, myogenesis, chondrogenesis, osteogenesis, epithelial cell differentiation and immune cell function.[7]

Reagents

Supplied as a lyophilized powder from a 0.2 μm filtered solution of phosphate buffered saline (PBS) with 5% trehalose.

Preparation Instructions

To one vial of lyophilized powder, add 0.5 mL of 0.2 μm-filtered PBS to produce a 0.2 mg/mL stock solution of Anti-TGF-β1.

Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted product may be stored at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at –20 °C. Avoid repeated freezing and thawing.

Product Profile

Neutralization: Anti-TGF-β1 neutralizes the bioactivity of recombinant human TGF-β1 by inhibiting cell proliferation using the IL-4 dependent murine HT-2 cell line.[8] In this bioassay, recombinant human TGF-β1 (0.25 ng/mL) is preincubated with various cencentrations of the antibody (0.1 to 1000 ng/mL) for 1 hour at room temperature in a 96-well microtiter plate. Following this pre-incubation, HT-2 cells are added to each well. The total volume of 100 μL, containing antibody at various concentrations, recombinant mouse IL-4 at 7.5 ng/mL, recombinant human TGF-β1 at 1 ng/ml, and HT-2 cells at 1 x 10^5 cells/ml, is incubated for 48 hours at 37 °C in a 5 % CO_2 humidified incubator. ^{3}H-thymidine is added during the final four hours. Cells are harvested onto glass filters and the ^{3}H-thymidine incorporated into DNA is measured.

The Neutralization $Dose_{50}$ (ND_{50}) is typically 5-30 ng/mL.

The ND_{50} of this antibody is defined as the conentration of antibody resulting in a one-half maximal inhibition of bioactivity of recombinant human TGF-β1 that is present at a concentration just high enough to elicit a maximum response.

The exact concentration of antibody required to neutralize recombinant human TGF-β1 activity is dependent on the cytokine concentration, cell type, growth conditions, and the type of activity studied.

Immunoblotting: a working antibody concentration of 0.1-0.2 μg/mL antibody is recommended. The detection limit for recombinant human TGF-β1 is ~5 ng/lane under non-reducing and reducing conditions.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

Endotoxin level is < 0.1 EU/μg antibody as determined by the LAL (Limulus amebocyte lysate) method.

References

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