



Product Information

ANTI-TRANSFORMING GROWTH FACTOR- β 5 (TGF- β 5)

Developed in Goat, IgG Fraction of Antiserum

Product Number T 4817

Product Description

Anti-Transforming Growth Factor- β 5 is developed in goat using purified recombinant amphibian TGF- β 5 expressed in *Sf* 21 insect cells as immunogen. The antibody is purified using Protein G chromatography.

Anti-Transforming Growth Factor- β 5 (TGF- β 5) will recognize amphibian TGF- β 5 by various immunochemical techniques including neutralization, immunoblotting, and ELISA. By immunoblotting and ELISA, the antibody shows less than 1 % cross-reactivity with the other TGF- β variants. This antibody will neutralize the biological activity of recombinant amphibian TGF- β 5, but not TGF- β 1, porcine TGF- β 2, TGF- β 2, or TGF- β 3.

Transforming Growth Factor- β 5 (TGF- β 5) is a member of the TGF- β family of growth factors. The TGF- β polypeptides are multifunctional; 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 mammalian cells possess a specific TGF receptor.¹ The multi-modal nature of TGF- β is seen in its ability to stimulate or inhibit cellular proliferation. In general, cells of mesenchymal origin appear to be stimulated by TGF- β whereas cells of epithelial or neuroectodermal origin are inhibited by the peptide.^{2,3}

Transforming Growth Factor- β 5 (TGF- β 5) mRNA is expressed in frog embryos beyond the neurula stage and in *Xenopus* tadpole (XTC) cells. The presence of TGF- β 5 in *Xenopus* embryos, tadpole cells, and in adult *Xenopus* tissues suggests a role in the mediation of differentiation and development. TGF- β 5 mRNA has not been detected in mammals.

Reagent

Anti-Transforming Growth Factor- β 5 (TGF- β 5) is supplied as 1 mg of antiserum lyophilized from a 0.2 μ m filtered solution of phosphate buffered saline.

Preparation Instructions

To one vial of lyophilized powder, add 1 ml of 0.2 μ m-filtered phosphate buffered saline (PBS) to produce a 1 mg/ml stock solution of anti-TGF- β 5.

Storage/Stability

Prior to reconstitution, store at -20°C . Reconstituted product may be stored at 2 to 8 $^{\circ}\text{C}$ for up to one month. For prolonged storage, freeze in working aliquots at -20°C . Avoid repeated freezing and thawing. Do not store in a frost-free freezer.

Product Profile

Anti-TGF- β 5 neutralizes the bioactivity of recombinant amphibian TGF- β 5 by inhibiting cell proliferation using the IL-4 dependent murine HT-2 cell line.⁴ In this bioassay, recombinant amphibian TGF- β 5 (0.1 ng/ml) is preincubated with various concentrations of the antibody (0.001 to 100 ng/ml) for 1 hour at room temperature in a 96-well microtiter plate. Following this preincubation, HT-2 cells are added to each well. The total volume of 100 μ l, containing antibody at various concentrations, recombinant amphibian TGF- β 5 at 0.1 ng/ml, recombinant mouse IL-4 at 7.5 ng/ml, and HT-2 cells at 1×10^5 cells/ml, is incubated for 48 hours at 37 $^{\circ}\text{C}$ in a 5 % CO_2 humidified incubator. ^3H -thymidine is added during the final four hours. Cells are harvested onto glass filters and the ^3H -thymidine incorporated into DNA is measured.

The Neutralization Dose₅₀ (ND₅₀) for anti-TGF- β 5 is approximately 0.03 to 0.08 μ g/ml in the presence of 0.1 ng/ml of recombinant amphibian TGF- β 5, using the murine HT-2 cell line.

The ND₅₀ of this antibody is defined as the concentration of antibody resulting in a one-half maximal inhibition of bioactivity of TGF- β 5 that is present at a concentration just high enough to elicit a maximum response.

The exact concentration of antibody required to neutralize TGF- β 5 activity is dependent on the cytokine concentration, cell type, growth conditions, and the type of activity studied.

For immunoblotting, a working concentration of 1 μ g/ml antibody is recommended. The detection limit for TGF- β 5 is approximately 0.5 ng/lane.

For ELISAs, a working concentration of 1 µg/ml antibody is recommended. The detection limit for TGF-β5 is at least 1 ng/well.

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

Endotoxin level is < 10 ng/mg antibody as determined by the LAL (Limulus amoebocyte lysate) method.

References

1. Sporn, M., et al., *Science*, **233**, 532 (1986).
2. Moses, H., et al., *Cancer Cells*, Vol. 3, Feramisco, J., et al., (eds.), Cold Spring Harbor, New York (1985).
3. Hayashi, I., and Carr, B., *J. Cell Physiology*, **125**, 82 (1985).
4. Tsang, M., et al., *Lymphokine Res.*, **9**, 607 (1990).

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