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Product Information

Monoclonal Anti-Transforming Growth Factor-β1
Clone 9016.2
produced in mouse, purified immunoglobulin

Catalog Number **T0438**

Product Description

Monoclonal Anti-Human TGF-β1 (IgG1 isotype) is purified from a mouse hybridoma resulting from the fusion of a mouse myeloma with B cells obtained from a mouse immunized with purified recombinant human TGF-β1 (rhTGF-β1) and latent TGF-β1 as the immunogen and expressed in CHO cells. The IgG fraction of ascites fluid was purified by Protein G affinity chromatography.

Monoclonal Anti-TGF-β1 will neutralize the biological activity of TGF-β1 and TGF-β1.2. The antibody may also be used in immunoblotting, immunohistochemistry, and capture ELISA. The antibody recognizes human, mouse, and rat TGF-β1.

Transforming Growth Factor-Beta 1 (TGF-β1) is a multifunctional peptide capable of influencing cell proliferation, differentiation, and other functions in a wide range of cell types. Transformed tissues, as well as non-neoplastic tissues, release transforming growth factors. Essentially all cells possess a specific TGF-β1 receptor.[1] The multimodal 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.[2-6] TGF-β1 interacts with Epidermal Growth Factor, Platelet Derived Growth Factor, Fibroblast Growth Factor, and 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]

Reagent

Lyophilized from 0.2 μm-filtered solution in phosphate buffered saline containing carbohydrates.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

To one vial of lyophilized powder, add 1 ml of 0.2 μm-filtered PBS to produce a 0.5 mg/ml stock solution of Anti-Human TGF-β1. If aseptic technique is used, no further filtration should be needed for use in cell culture environments.

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.

Procedure

Anti-Human TGF-β1 is tested for its ability to neutralize the biological activity of rhTGF-β1 on the HT2 cell line.[8] The ND_{50} of the antibody is defined as the concentration of antibody resulting in a one-half maximal inhibition of bioactivity of rhTGF-β1 which is present at a concentration just high enough to elicit a maximum response. In this bioassay, rhTGF-β1 is incubated with various dilutions of the antibody for 1 hour at room temperature in a 96 well plate. After the incubation, HT2 cells are added to the antigen-antibody mixture. The assay mixture, which contained a total volume of 0.1 ml with rhTGF-β1 at 0.25 ng/ml and rmIL-4 at 7.5 ng/ml, is incubated at 37 °C for 48 hours in a humidified CO_2 incubator and pulsed for the final 4 hours with ^{3}H-thymidine. Cells are harvested onto glass filters and the ^{3}H-thymidine incorporation into DNA is measured.

Product Profile

This antibody may be used as a capture antibody in a TGF-β1 ELISA in combination with biotinylated, TGF-β1 affinity purified polyclonal detection antibody. Using plates coated with 100 µl/well of the capture antibody at 1 µg/ml, in combination with 100 µl/well of the detection antibody, an ELISA for sample volumes of 10 µl can be obtained. To arrive at the optimal dose range, set up a two-fold dilution series of the protein standard starting with 2 ng/ml.

Immunoblotting: a working antibody concentration of 1-2 µg/ml is recommended. The detection limit for recombinant human rhTGF-β1 is ~5 ng/lane under non-reducing conditions and using a chemiluminescence detection system.

Immunohistochemistry: a working antibody concentration of 8-25 µg/ml is recommended to detect TGF-β1 in fixed cells or tissue sections using the appropriate secondary reagents. TGF-β1 in fixed cells or tissue sections using the appropriate secondary reagents.

Note: In order to obtain the best results in various techniques and preparations, determination of optimal working dilutions by titration test is recommended.

References

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