Technical Bulletin

Transforming Growth Factor-β1 human,

TGF-β1, Xeno-free, recombinant expressed in HEK 293 cells, suitable for cell culture

H8541

Product Description

Recombinant human Transforming Growth Factor-β1 (TGF-β1) is expressed in human 293 cells as a mature, disulfide linked, non- glycosylated, homodimer with a predicted molecular mass of 25 kDa.

This protein is manufactured in human cells, with no serum. The human cells expression system allows human-like glycosylation and folding, and often supports higher specific activity of the protein. The protein is produced with no artificial tags and no carrier proteins.

TGF-β1 belongs to the TGF beta superfamily. TGF-β1 is crucial in cell growth, differentiation, and survival. TGF-β1 is important for immune homeostasis by balancing lymphocyte proliferation, apoptosis, hematopoiesis, and embryogenesis. TGF-β1 is a strong growth inhibitor for normal and transformed epithelial, lymphoid, fibroblast, and keratinocyte cells. TGF-β1 is a tumor suppressor in the early stages of carcinogenesis, but in the later stages acts as a tumor promoter by inducing epithelial-mesenchymal transition and stimulating angiogenesis. In addition, elevated levels of TGF-β1 block T cell differentiation toward Th1 effector cells. Moreover, TGF-β1 promotes T cells differentiation toward the Treg cells and suppresses antigen-presenting functions of dendritic cells.

This product is lyophilized from a solution of 50 mM sodium acetate, pH 4.5.

ED_{50}: ≤ 0.5 ng/mL.

The specific activity was determined by the dose dependent inhibition of IL-4 induced proliferation of mouse HT-2 cells (BALB/c spleen activated by sheep erythrocytes in the presence of IL-2).

Purity: ≥ 95% (SDS-PAGE).

Endotoxin level: ≤ 1 EU/µg.

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

Briefly centrifuge the vial before opening. It is recommended to reconstitute the protein in sterile 4 mM HCl.

Storage/Stability

Store the product at –20 °C. The lyophilized product remains active for two years at –20 °C. Upon reconstitution, the cytokine can be stored at 2–8 °C for short term only, or at –20 °C to –80 °C in aliquots for long term. Avoid repeated freeze-thaw cycles.

References

1. Sporn, M.B., et al., Cytokine Growth Factor Rev., 17, 3-7 (2006).
2. Tsang, M., et al., Cytokine, 7, 389 (1995).
3. Batlle, E. and Massague, J., Immunity Rev., 50, 924-940 (2019).

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