Product Information

Transforming Growth Factor-β1 Human

Recombinant, Expressed in CHO Cells Suitable for Cell Culture

T7039

Storage Temperature −20 °C
Synonym: hTGF-β1, TGF-β1, Differentiation inhibiting factor, Cartilage-inducing factor

Product Description

Transforming Growth Factor-β1 is a dimer 12.8/25.6 kDa (112/224 aa) multi-functional 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-b1 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.[2-6] TGF-β1 interacts with Epidermal Growth Factor, Platelet Derived Growth Factor, Fibroblast Growth Factor, and T Cell Growth Factor 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]

The product is lyophilized from a 0.2 µm filtered solution containing 0.1 % trifluoroacetic acid (TFA) and Trehalose in a 20:1 Trehalose to protein ratio.

The biological activity of TGF-β1 is measured in culture by inhibition of mouse IL-4 dependent proliferation of mouse HT-2 cells. The ED_{50} is defined as the effective concentration of growth factor that elicits a 50% inhibition in cell growth in a cell-based bioassay.

Purity: ≥ 95% (SDS-PAGE)

Endotoxin: ≤ 0.1 EU/µg (LAL test)

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

- Prepare stock solution by reconstituting the contents of the vial using 0.2 µm filtered distilled water or citric acid solution to a concentration of 50 µg/mL.
- Working solutions may be prepared by further diluting the stock solution immediately before use with phosphate buffered saline containing 2 mg/mL bovine serum albumin.

Storage/Stability

Store lyophilized product at −20 °C.

Store stock solution at −20 °C in working aliquots. Prolonged storage of product or repeated freezing and thawing is not recommended.

References

1. Sporn, M.B., et al., Science, 233, 532 (1986).
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3. Hayashi, I., and Carr, B., J. Cell Physiology, 125, 82 (1985).
4. Kehrl, J.H., et al., J. Exp. Med., 163, 1037 (1986).
5. Shipley G.D., et al., Cancer Res., 46, 2068 (1986).
6. Childs, C.B, et al., Proc. Natl. Acad. Sci. USA, 79, 5312 (1982).
7. Cheifetz, S., et al., Cell, 48, 409 (1987).

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