

DESCRIPTION

Source *Spodoptera frugiperda*, Sf 21 (baculovirus)-derived human TGF-beta 1.2 protein

Human TGF-β1 (Ala279-Ser390) Accession # P01137

Human TGF-β2 (Ala303-Ser414) Accession # P61812

N-terminus

C-terminus

N-terminal Sequence Analysis Ala279 (TGF-β1) & Ala303 (TGF-β2)

Structure / Form Disulfide-linked heterodimer

Predicted Molecular Mass 12.8 kDa (TGF-β1) & 12.7 kDa (TGF-β2)

SPECIFICATIONS

Activity Measured by its ability to inhibit the IL-4-dependent proliferation of HT-2 mouse T cells. Tsang, M. *et al.* (1995) Cytokine 7:389. The ED₅₀ for this effect is 0.04-0.08 ng/mL.

Endotoxin Level <0.01 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in Acetonitrile and TFA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 10 µg/mL in sterile 4 mM HCl containing at least 0.1% human or bovine serum albumin.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Transforming Growth Factor Beta (TGF-β) is a stable, multifunctional polypeptide growth factor. While specific receptors for this protein have been found on almost all mammalian cell types thus far examined, the effect of the molecule varies depending on the cell type and growth conditions. Generally, TGF-β is stimulatory for cells of mesenchymal origin and inhibitory for cells of epithelial or neuroectodermal origin. It is now known that the originally described form of TGF-β, now described as TGF-β1, is only one of a family of regulatory proteins consisting of a number of proteins distantly related to TGF-β1 (30 - 40% sequence homology) and a number of more closely related proteins (70 - 80% sequence homology) designated TGF-β2, TGF-β1.2, TGF-β3, TGF-β4, and TGF-β5. TGF-β1 has been found in the highest concentration in human platelets and mammalian bone, but is produced by many cell types in smaller amounts. TGF-β2 has been found in the highest concentration in porcine platelets and mammalian bone, but again is also produced by many types of cells. The heterodimer, TGF-β1.2, has so far been found only in small amounts in porcine platelets. TGF-β3 has been detected in human, porcine, and avian sources, mainly in cells of mesenchymal origin, suggesting a different role for this protein than for TGF-β1 or -β2. TGF-β4 has been detected in chick embryo chondrocytes, and its distribution in other types of cells is still being investigated. TGF-β5 has been detected only in *Xenopus* embryos. TGF-β1, TGF-β2, and TGF-β1.2 appear to be largely equivalent in biological activity, although there appear to be differences in binding to certain types of receptors, and there are a few reports of differential responses to TGF-β1 and TGF-β2.