

## Product Information

### Transforming Growth Factor- $\beta$ 1 from human platelets

Catalog Number **T1654**  
Storage Temperature  $-20\text{ }^{\circ}\text{C}$

Synonym: TGF- $\beta$ 1

#### Product Description

Transforming Growth Factor- $\beta$ 1 (TGF- $\beta$ 1) is a 25 kDa multifunctional peptide capable of influencing cell proliferation, differentiation, and other cellular functions in a wide range of cell types. Transformed and non-neoplastic tissues release transforming growth factors and almost all cells possess a specific TGF- $\beta$ 1 receptor.<sup>1</sup>

The multimodal nature of TGF- $\beta$ 1 is exhibited by its ability to stimulate and inhibit cellular proliferation. In general, cells of mesenchymal origin appear to be stimulated by TGF- $\beta$ 1; whereas, hepatocytes, T and B lymphocytes, keratinocytes, and many epithelial cells are inhibited by the peptide.<sup>2-6</sup> TGF- $\beta$ 1 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.<sup>1</sup> TGF- $\beta$ 1 plays a fundamental role in tissue growth and differentiation by being involved in adipogenesis, myogenesis, chondrogenesis, osteogenesis, epithelial cell differentiation, and immune cell function.<sup>7</sup>

TGF- $\beta$ 1 is prepared from fresh human platelets. It is lyophilized from a 0.2  $\mu\text{m}$  filtered solution of 35% acetonitrile and 0.1% TFA containing 50  $\mu\text{g}$  of BSA per 1  $\mu\text{g}$  cytokine.

Purity:  $\geq 97\%$  (SDS-PAGE)

Endotoxin:  $\leq 1$  EU/ $\mu\text{g}$  of protein  
(limulus amoebocyte lysate [LAL] method)

The biological activity of TGF- $\beta$ 1 was tested in culture by measuring HT-2 cell growth.<sup>7</sup> The  $\text{EC}_{50}$  is defined as the effective concentration of growth factor that elicits 50% inhibition of cell growth in a cell based bioassay.

#### Precautions and Disclaimer

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

#### Preparation Instructions

Reconstitute the contents of the vial using 0.2  $\mu\text{m}$  filtered 4 mM HCl containing 1 mg/ml of BSA to make a TGF- $\beta$ 1 stock solution of  $\geq 1$   $\mu\text{g}/\text{ml}$ .

#### Storage/Stability

Store the product at  $-20\text{ }^{\circ}\text{C}$ .

Upon reconstitution, this cytokine may be stored at  $2-8\text{ }^{\circ}\text{C}$  for no more than 3 months. For long term storage, aliquot and freeze at  $-70\text{ }^{\circ}\text{C}$  or  $-20\text{ }^{\circ}\text{C}$ . Avoid repeated freeze-thaw cycles.

#### References

1. Sporn, M.B. et al., *Science*, **233**, 532 (1986).
2. Moses, H. et al., in **Cancer Cells**, Vol. 3, Feramisco et al., eds., (Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York, NY: 1985).
3. Hayashi, I., and Carr, B.I., *J. Cell Physiol.*, **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. Tsang, M. et al., *Lymphokine Research*, **9**, 607 (1990).

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