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Human Recombinant TGF-beta 1, ACF

Transforming growth factor beta 1

Catalog #100-1798 100 µg

Product Description

Transforming growth factor beta 1 (TGF-β1) is a member of the TGF-β superfamily and regulates diverse cellular phenotypes. TGF-β1 binds to serine-threonine kinase type I and II receptors and activates signal transduction through SMAD2/3 proteins, thus regulating a variety of functions, including cell proliferation, differentiation, wound healing, apoptosis, and metabolism (Massagué; McDowell et al.). During human embryogenesis, TGF-β1 is expressed by endothelial and hematopoietic tissues and acts as an endogenous autocrine growth regulator in those cells (Gatherer et al.). Together with basic fibroblast growth factor (bFGF), TGF-β1 supports the culture of undifferentiated human embryonic stem cells and induced pluripotent stem cells (Amit et al.). TGF-β1 is produced in latent form by many blood cells and is present in high amounts in platelets and bones. Once activated, TGF-β1 helps to maintain immune homeostasis by modulating B cell response and mediating immunosuppressive effects on T cells and neutrophils (Letterio & Roberts). This cytokine can be used in human, bovine, and porcine workflows. This product is animal component-free (ACF).

Product Information

Alternative Names: Cartilage-inducing factor, Differentiation inhibiting factor, LAP, Latency-associated peptide, TGFB1, TGF-beta-1, Transforming growth factor β 1

Accession Number: P01137

Predicted Molecular Mass: 24 kDa (dimer)

Species: Human, Other

Product Formulation: Lyophilized from a solution containing acetonitrile and trifluoroacetic acid.

Source: E. coli

Purity: ≥ 98% by SDS-PAGE

Specifications

Activity: The EC50 is approximately 0.04 ng/mL (~1.54 pM), as determined by a quantitative luciferase reporter assay in transiently transfected HEK293T cells.

Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.1 EU/µg protein.

Preparation and Storage

Stability and Storage: Store at -20 to -80°C. Stable as supplied for 12 months from date of receipt.

Preparation: Centrifuge vial before opening. Reconstitute the product in 10 mM hydrochloric acid to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex.

OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1 - 1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at -20 to -80°C for more than 12 months. Avoid repeated freeze-thaw cycles.

Data

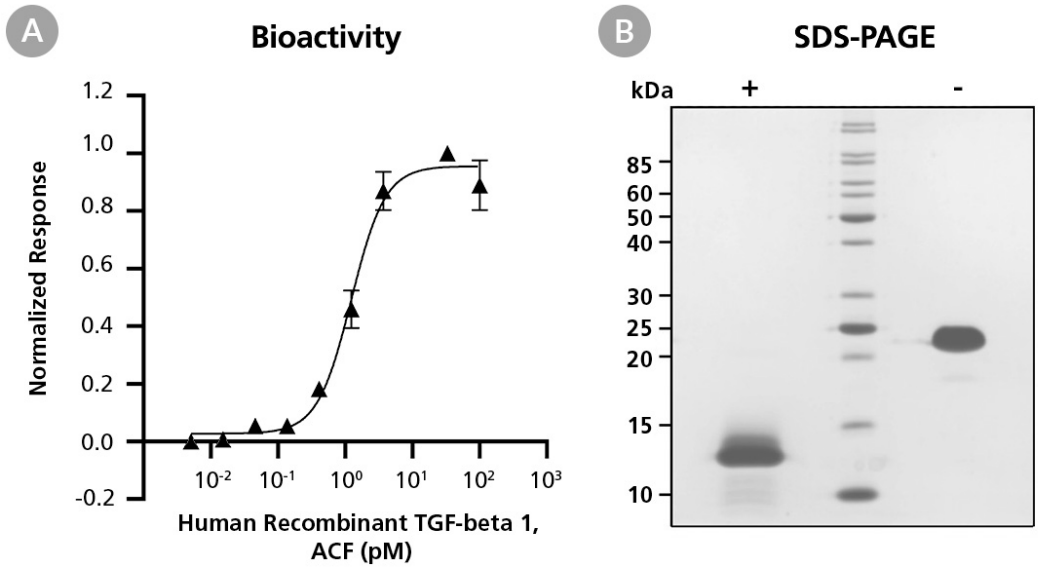

Figure 1. Biological Activity and Molecular Mass of Human Recombinant TGF-beta 1, ACF

(A) The biological activity of Human Recombinant TGF-beta 1, ACF was tested using a luciferase reporter assay in transiently transfected HEK293T cells. Firefly luciferase activity was normalized to control Renilla luciferase activity. The EC50 is defined as the effective concentration of the growth factor at which TGF beta 1 response is at 50% of maximum. The EC50 in the above example is 1.54 pM (~0.04 ng/mL). (B) 7 µg of Human Recombinant TGF-beta 1, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant TGF-beta 1, ACF has a predicted molecular mass of 24 kDa (dimer).

Related Products

For a complete list of cytokines or peptide pools, as well as related products available from STEMCELL Technologies, visit www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

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