Product Description
Activin A is a member of the transforming growth factor beta (TGF-β) family of proteins, and is produced by many cell types throughout development (Gurdon et al.). It is a disulfide-linked homodimer (two beta-A chains) that binds to heteromeric complexes of a type I (Act RI-A and Act RI-B) and a type II (Act RII-A and Act RII-B) serine-threonine kinase receptor (Attisano et al.). Activins primarily signal through SMAD2/3 proteins to regulate a variety of functions, including cell proliferation, differentiation, wound healing, apoptosis, and metabolism (McDowell et al.). Activin A maintains the undifferentiated state of human embryonic stem cells (James et al.; Xiao et al.) and also facilitates differentiation of human embryonic stem cells into definitive endoderm (D’Amour et al.).

Product Information
Accession Number: P08476
Amino Acid Sequence: MGLECDGKVN ICCKQFFVS FKDIGWNDWI IAPSGYHANY CEGECPSHIA GTSGSSLSFH STVINHYMR GHSPFANLKS CCVPTKLRPM SMLYYDDQNI IIKKDIONMI VEECGCS
Predicted Molecular Mass: 13.1 kDa monomer; 26.2 kDa dimer
Species: Human, Mouse
Formulation: Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid.
Source: E. coli

Specifications
Activity: The EC50 is ≤ 10 ng/mL as determined by a cell proliferation assay using MPC-11 cells. The specific activity is approximately 1.2 IU/µg as calibrated against the human recombinant Activin A WHO International Standard (NIBSC code: 91/626).
Purity: ≥ 95%
Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage
Storage: Store at -20°C to -80°C.
Stability: Stable as supplied for 12 months from date of receipt.
Preparation: Centrifuge vial before opening. Reconstitute the product in sterile water 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%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -20°C to -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.
The biological activity of Human/Mouse Recombinant Activin A was tested by its ability to induce cytotoxicity of MPC-11 cells. Cytotoxicity was measured after 48 hours of culture. The EC50 is defined as the effective concentration of the growth factor at which cell death is at 50% of maximum. The EC50 in the above example is 1.9 - 2.9 ng/mL.

1 µg of Human/Mouse Recombinant Activin A was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions visualized by Coomassie Blue staining. Human/Mouse Recombinant Activin A is a homodimer with a predicted molecular mass of 26.2 kDa (13.1 kDa per monomer).

Related Products

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References