

Cytokines

Human Recombinant Activin A



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Activin A

Catalog #	78001	10 µg
	78001.1	100 µg
	78001.3	500 µg
	78001.2	1000 µg

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

Alternative Names:	Activin beta-A chain, EDF, Erythroid differentiation protein, FRP, FSH-releasing protein, INHBA, Inhibin beta-A chain, Inhibin beta-1
Accession Number:	P08476
Amino Acid Sequence:	MGLECDGKVN ICCKKQFFVS FKDIGWNDWI IAPSGYHANY CEGECPSHIA GTSGSSLSFH STVINHYRMR GHSPFANLKS CCVPTKL RPM SMLYYDDGQN IIKKDIQNMI VEECGCS
Predicted Molecular Mass:	26.2 kDa
Species:	Human
Cross Reactivity:	Mouse, Rat
Formulation:	Lyophilized from a sterile-filtered solution containing 0.1% trifluoroacetic acid.
Source:	E. coli

Specifications

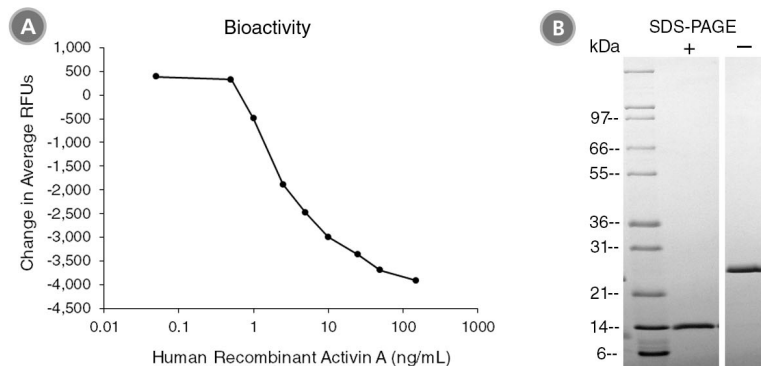
Activity:	The specific activity is $\geq 1 \times 10^5$ units/mg ($EC_{50} \leq 10$ ng/mL) as determined by the ability to induce cytotoxicity using MPC-11 cells.
Purity:	$\geq 95\%$
Endotoxin Level:	Measured by kinetic Limulus amoebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

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.

Data



(A) The biological activity of Human Recombinant Activin A was tested by its ability to induce cytotoxicity of MPC-11 cells. Cytotoxicity was measured after 48 hours of culture using a fluorometric assay method. 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.

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

Related Products

For a complete list of cytokines, 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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