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Recombinant human activin A protein (Qk001)



Type: Stem cells

Available for purchase: unit size (µg): 25, 50, 100, 500, 1000

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Product Information

Activin A is a TGF-β family growth factor regulating embryonic development, cell proliferation, differentiation, and immune responses. Activin A is frequently used to maintain pluripotency in induced pluripotent and embryonic stem cell cultures. It is also used in many stem cell differentiation protocols, including endoderm lineage differentiation and further maturation into hepatocyte and pancreatic cells.

Recombinant human activin A protein is a high-purity mature bioactive dimer of 26 kDa. It is animal origin-free (AOF), carrier protein-free, and tag-free to ensure its purity with exceptional lot-to-lot consistency. This protein has been rigorously benchmarked against other commercial sources and extensively validated for highly reproducible stem cell culture. Qkine founder Marko Hyvönen developed the protocol for making high-purity activin A, and this protein is used at the Cambridge Stem Cell Institute.

High purity mature bioactive dimer rigorously benchmarked against other commercial sources.

Qkine activin A is also available as cell therapy grade with extended quality testing and documentation - Qk001-CTG

Alternative protein names

ActA, Activin beta-A chain, Erythroid differentiation protein (EDP), Follicle-Stimulating Hormone (FSH) releasing protein (FRP), INHBA, Inhibin beta A, Inhibin beta 1, Qk1, Qk01

Molecular weight

26 kDa (dimer)

Protein Uniprot number

Bioactive mature domain of recombinant human activin A protein, residues 311-426 (Uniprot: P08476)

Species reactivity

- human
- species similarity:
- mouse - 100%
- rat - 100%
- bovine - 100%
- porcine - 100%

Product Information

- >98%, by SDS-PAGE quantitative densitometry
- Expressed in *E. coli*
- Animal origin-free (AOF) and carrier protein-free
- Manufactured in our Cambridge, UK laboratories
- Lyophilized from acetonitrile, TFA

Reconstitution instructions

- Resuspend in 10 mM HCl (Reconstitution solution A) at >50 µg/ml

Featured applications

- Induced pluripotent and embryonic stem cell differentiation and maintenance
- iPSC-derived mesoderm differentiation
- Differentiation of iPSC into endoderm
- Chemically defined media for organoid culture

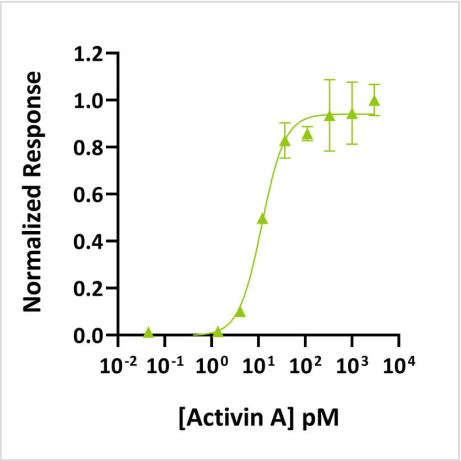
Further quality assays

- Mass spectrometry: single species with expected mass
- Recovery from stock vial: >95%
- Endotoxin: <0.05 EU/µg protein

Scientific Information

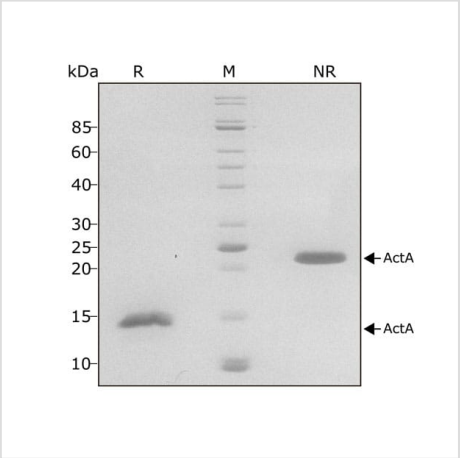
Bioactivity

Activin A activity was determined using the activin-responsive firefly luciferase reporter assay in transiently transfected HEK293T cells. Cells were treated in triplicate with a serial dilution of activin A. Firefly luciferase activity was measured and normalized. EC50 = 11.9 pM (309.4 pg/ml). Data from Qk001 lot #104276.



Purity

Activin A migrates as a single band at 24 kDa in non-reducing (NR) and 13 kDa as a single monomeric species upon reduction (R). No contaminating protein bands are visible. Purified recombinant protein (7 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptothanol, R) and non-reduced conditions (NR) and stained with Coomassie Brilliant Blue R250. Data from Qk001 lot #011.



Original product page: https://qkine.com/product/recombinant-human-activin-a-protein/

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