

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

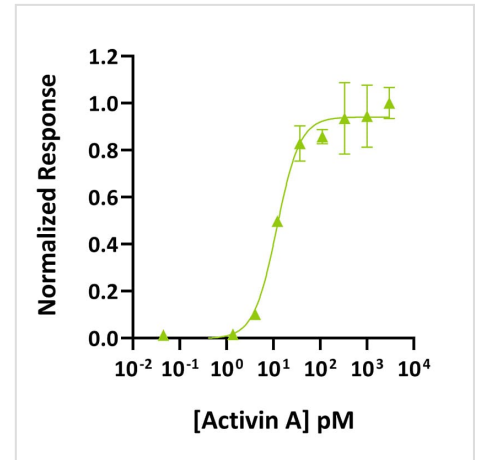
Further quality assays

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

Scientific Information

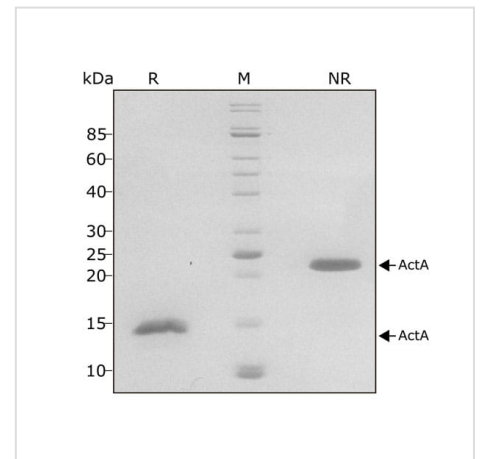
Bioactivity

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-mercaptoethanol, R) and non-reduced conditions (NR) and stained with Coomassie Brilliant Blue R250. Data from Qk001 lot #011.



Original product page: <https://ryan.calliope-alpha.ts.net/product/recombinant-human-activin-a-protein/>

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