Technical Data Sheet

Recombinant mouse/rat activin A protein

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Lot Specific Information

Lot Number: **Lot Specific***

Total Protein: **Lot Specific***

*This information will be noted on the certificate of analysis that ships with this product.

Shelf Life

This product has a guaranteed shelf-life of one year from the date of customer receipt when stored as recommended.

Product Information

Catalog Number:	**RP038**
Protein Identity:	Confirmed identity with expected mass, determined by mass spectrometry
Reported Applications:	Expansion of induced pluripotent, embryonic and mesenchymal stem cells Induced pluripotent stem cell culture and maintenance iPSC-derived mesoderm differentiation Differentiation of iPSC into endoderm Expansion and differentiation of mouse pluripotent stem cells
Formulation:	Lyophilized, white powder
Endotoxin:	≤0.5 EU/mg, LAL assay
Purity:	≥95%; SDS-PAGE
Reconstitution:	Resuspend in 10 mM HCl (Reconstitution Buffer A) at >50 µg/ml. Once reconstituted, store in single-use aliquots to avoid freeze-thaw cycles. Store reconstituted protein at -20 °C to -80 °C for a maximum of 12 months or until the expiry date if sooner.
Sterility:	Sterile
Production:	Microbial. Expressed in E. coli
Molecular Weight:	26 kDa (dimer)
Bioactivity Assay:	No significant difference between EC50 of reference and test lots
Mycoplasma:	Negative

Description

Recombinant mouse/rat activin A protein is a disulfide-linked homodimer of inhibin βA chains and a member of the transforming growth factor beta (TGF-β) superfamily, first identified for its ability to stimulate follicle-stimulating hormone (FSH) release from the pituitary and synthesized as a precursor with a signal peptide, a 250–350-residue pro-domain and a highly conserved mature domain. Activin A binds type I (ALK4 or ALK7) and type II (ActRIIA or ActRIIB) receptors to drive SMAD-dependent transcription, and its activity is tightly regulated by follistatin and inhibins in a feedback loop. It regulates embryonic development, organ patterning, immune responses and wound healing, and impaired signaling is associated with cancer, inflammation and fibrosis. In culture, activin A is used with FGF-2 to maintain pluripotency of iPSCs and ESCs, directs differentiation into definitive endoderm for pancreatic and liver lineages, promotes neural precursors and astrocytic differentiation with CNTF and GDNF, supports mesodermal differentiation into muscle, bone and blood cells, and is widely used in organoid culture, and because mouse activin A shares 100% homology with rat, human, porcine and bovine proteins, it is a versatile reagent for stem cell and organoid research across species. This protein is optimized for in vivo and functional applications: low-endotoxin, tag-free, and carrier-free, supporting reproducible performance in demanding preclinical and bioactivity studies. Species reactivity: mouse, rat. Species similarity: human - 100%, bovine - 100%, porcine - 100%.

Storage

Store at the stock concentration at 4°C . **Do not freeze.**

It is not uncommon for a floccule or precipitate to appear during storage. The floccule is typically buffer salts precipitating out of solution or a small bit of protein aggregation. For information on how to remove floccules or precipitates see our FAQ's at https://bioxcell.com/faqs.

Store lyophilized protein between -20 °C and -80 °C until the date of expiry. Avoid freeze-thaw cycles

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