

Recombinant Human Activin A Protein (GMP Grade)

Please read the manual carefully before use.

Cat. No. PM112

Version No. Version 1.0

Storage: at -18°C or below for two years.

Description

Activin A is a homodimer composed of two inhibin β subunits linked by disulfide bonds. It activates intracellular signaling pathways through specific receptors and plays a critical role in various biological processes, including cell growth, differentiation, apoptosis, and tissue repair [1]. By binding to type I and type II activin receptors, Activin A activates the SMAD-dependent signaling pathway, thereby regulating the expression of target genes. This signaling process is essential for a wide range of cellular functions and developmental events [2-3]. Activin A is involved in the pathogenesis of various diseases, including the progression of certain cancers, autoimmune disorders, and tissue fibrosis. Due to its regulatory functions, Activin A has emerged as a potential therapeutic target, particularly in promoting wound healing, enhancing immune function, and cancer therapy [4-6].

Product Information

Expressed system: CHO

Predicted molecular weight: 12.9 kDa

Purity: > 95% by SDS-PAGE analysis

Endotoxin: < 10 EU/mg

Biological activity: Measured in a cell proliferation inhibition assay using the mouse MPC-11 cells. The ED50 for this effect is less than 2 ng/ml.

Form: Sterile lyophilized powder

Kit Content

Component	PM112-01	PM112-02	PM112-03
Recombinant Human Activin A Protein (GMP Grade)	10 μ g	50 μ g	1 mg

Instructions for Use

The lyophilized powder can be stored at -20°C for 2 years.

Reconstitution: Dissolve it in 4 mM hydrochloric acid to a concentration of no less than 100 μ g/ml. After reconstitution, aliquot into small portions and store at -20°C for up to 6 months, or at -80°C for up to 12 months. For short-term use, store at 2-8°C for up to 1 week. Avoid repeated freeze-thaw cycles.

References

- [1] Massague J, Blain SW, Lo RS. TGF β signaling in growth control, cancer, and heritable disorders. *Cell*. 2000 Apr 21;103(4):295-309.
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- [3] Harrison C A, Gray P C, Vale W W, et al. Antagonists of activin signaling: mechanisms and potential biological applications. *Trends in Endocrinology & Metabolism*, 2005, 16(2): 73-78.
- [4] Ghorbani-Dalini S, Azarpira N, Sangtarash M H, et al. Optimization of activin-A: a breakthrough in differentiation of human induced pluripotent stem cell into definitive endoderm. *3 Biotech*, 2020, 10(5): 215.
- [5] Mennen R H, Oldenburger M M, Piersma A H. Endoderm and mesoderm derivatives in embryonic stem cell differentiation and their use in developmental toxicity testing. *Reproductive Toxicology*, 2022, 107: 44-59.
- [6] Ries A, Schelch K, Falch D, et al. Activin A: an emerging target for improving cancer treatment?. *Expert Opinion on Therapeutic Targets*, 2020, 24(10): 985-996.

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