Recombinant Human Activin A protein Active

Product Information Sheet
# PR-RP0010

Human recombinant protein expressed in *Nicotiana benthamiana*

**Mol. formula:** C600H911N173O174S13

**Extinction coeff:** E0.1% = 1.27 (A280 nm)

**Mol. weight:** 27.4 kDa disulfide-linked homodimers of two βA chains, each containing 116 amino residues.

**p.I.:** 7.27

**Purity:** >97% by SDS-PAGE gel

**Animal Free product**

**Endotoxin Level:** <0.04 EU/µg protein (LAL method)

**Sequence**

HHHHHHGLECDGKVNICCKKQFFVSVKDGWNDWIIAPSGYHANYCEGECPSHIAGTSGSSLFSFHSTVINHRMRGHSPFANLKSCCVPTKLRPMMLYYDDGQNIKEDIQNMIVEECGCS

**Description**

Activins are homodimers or heterodimers of the various β subunit isoforms, belonging to the TGFβ family. Mature Activin A has two 116 amino acids residues βA subunits (βA-βA). Activin exhibits a wide range of biological activities, including mesoderm induction, neural cell differentiation, bone remodelling, haematopoiesis, and reproductive physiology. Activin plays a key role in the production and regulation of hormones such as FSH, LH, GnRH and ACTH. Cells known to express Activin A include fibroblasts, endothelial cells, hepatocytes, vascular smooth muscle cells, macrophages, keratinocytes, osteoclasts, bone marrow monocytes, prostatic epithelium, neurons, chondrocytes, osteoblasts, Leydig cells, Sertoli cells, and ovarian granulosa cells.

As with other members of the super-family, Activins interact with two types of cell surface trans-membrane receptors (Types I and II) which have intrinsic serine/threonine kinase activities in their cytoplasmic domains. Activin type 1 receptors, ACVR1, ACVR1B, ACVR1C and Activin type 2 receptors, ACVR2A, ACVR2B. The biological activity of Activin A can be neutralized by inhibins and by the diffusible TGF-B antagonist, Follistatin.

**Source**

Produced by transient expression of Activin A in non-transgenic plants. Recombinant human Activin A contains a 6-His-tag at the N-terminal end and is purified by sequential chromatography (FPLC). Contains no animal-derived components or impurities.

**Formulation**

Lyophilized from a Tris HCl 0.05 M buffer at pH 7.4.
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Reconstitution Recommendation

Lyophilized protein should be reconstituted in water to a concentration of 50 ng/μl. Due to the protein nature, dimmers and multimers may be observed.

Purity Confirmation

The protein was resolved by SDS polyacrylamide gel electrophoresis and the gel was stained with Coomassie blue.

Figure 1. SDS-PAGE analysis of recombinant Activin A. Samples were loaded in 15% SDS-polyacrylamide gel and stained with Coomassie blue. Lane MWM: Molecular weight marker (kDa); Lane 1: contains 200 ng of recombinant Activin A.

Recombinant Human Activin A protein D

Serological Identification

The protein was electrophoresed under reducing condition on a 15% SDS-polyacrylamide gel, transferred by electroblotting to a NC membrane and visualized by immune-detection with specific antibody Activin A.

Figure 2: Western Blot analysis of recombinant Activin A. Lane MWM: Molecular weight marker (kDa). Lane 1: 200 ng of Activin A.
Biological Activity
The biological activity of Activin A is measured by its ability to inhibit mouse plasmacytoma cell line (MPC-11) cells proliferation ([3H]thymidine incorporation). ED50 ≤ 5 ng/ml.

References
Order Information, Shipping and Storage

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<th>Order#</th>
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<td>PR-RP0010-100</td>
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shipped on blue ice; store at -20 °C

Storage & Stability
This lyophilized preparation is stable at 2 - 8 °C for short term, long storage it should be kept at -20 °C. Reconstituted protein should be stored in working aliquots at -20 °C. It is recommended to add a carrier protein (0.1% HSA or BSA). Repeated freezing and thawing is not recommended.

We recommend for optimal usage follow instructions of batch Quality Control sheet
For R+D purposes only. Purchaser must determine the suitability of the product(s) for their particular use.

Contact and Support
MoBiTec GmbH ● Lotzestrasse 22a ● D-37083 Goettingen ● Germany

Customer Service – General inquiries & orders
phone: +49 (0)551 707 22 0
fax: +49 (0)551 707 22 22
e-mail: order@mobitec.com

Technical Service – Product information
phone: +49 (0)551 707 22 70
fax: +49 (0)551 707 22 77
e-mail: info@mobitec.com

MoBiTec in your area: Find your local distributor at www.mobitec.com