

Recombinant Human Activin A protein

Human recombinant protein expressed in *Nicotiana benthamiana*

RF009

Mol. Formula: C600H911N173O174S13
Extinction coeff: E0.1% = 1.27 (A 280 nm)
Mol. Weight: 27.4 kDa disulfide-linked homodimers of two β A chains, each containing 116 amino residues.

p.I: 7.27
Purity: > 97% by SDS-PAGE gel

Animal Free product*

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

Sequence:

HHHHHGLECDGKVNICKKQFFVSFKDIGWNDWIIAPSGYHANYC
 EGECPSHIAGTSGSSLSFHSTVINHYMRGHSPFANKKSCCVPTKLR
 PMSMLYDDGQNIKKDIQNMIVEECGCS

Description:

Activins are homodimers or heterodimers of the various β subunit isoforms, belonging to the TGF β family. Mature Activin A has two 116 amino acids residues β A subunits (β A- β A). Activin exhibits a wide range of biological activities, including mesoderm induction, neural cell differentiation, bone remodelling, haematopoiesis, and reproductive physiology. Activins 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 0.05M buffer at pH 7.4.

Reconstitution Recommendation:

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

Storage and 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°. Repeated freezing and thawing is not recommended.

Purity Confirmation:

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

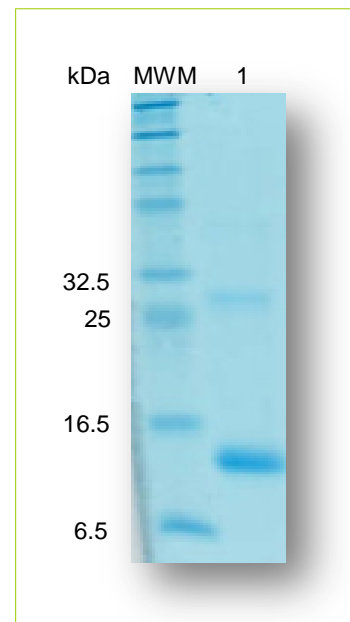


Figure 1. SDS-PAGE analysis of recombinant Activin A. Samples were loaded in 15% SDS-polyacrylamide gel and stained with Coomassie blue. Lane MWM: Molecular weight marker (kDa); Lane 1: contains 200ng of recombinant Activin A.

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.

Recombinant Human Activin A protein

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.

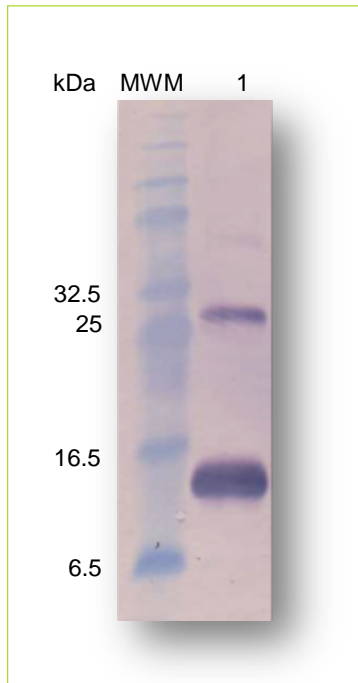


Figure 2. Western Blot analysis of recombinant Activin A. Lane MWM: Molecular weight marker (kDa). Lane 1: 200ng of Activin A.

References

-Vale W., Hseuh A., Rivier C. and Yu J. (1990). The inhibin/Activin family of hormones and growth factors. In *Peptide Growth Factors and their Receptors: Handbook of Experimental Physiology*, 95: 211–248. Eds M Sporn & A Roberts. Berlin: Springer-Verlag.

-Sulyok S., Wankell M., Alzheimer C. and Werner S. (2004). Activin: an important regulator of wound repair, fibrosis, and neuroprotection. *Mol. Cell. Endocrinology*, 225 (1-2): 127–32.

-Bamberger C., Schärer A., Antsiferova M., Tychsen B., Pankow S., Müller M., Rüllicke T., Paus R. and Werner S. (2005). Activin controls skin morphogenesis and wound repair predominantly via stromal cells and in a concentration-dependent manner via keratinocytes. *Am. J. Pathol.*, 167 (3): 733–47.

-Chen Y. G., Wang Q., Lin S. L., Chang C. D., Chuang J., Chung J. and Ying S. Y. (2006). Activin signalling and its role in regulation of cell proliferation, apoptosis, and carcinogenesis. *Exp. Biol. Med.* (Maywood), 231 (5): 534–44.

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.

*Agrenvec products are expressed in a plant system and intrinsically have extremely low endotoxin levels and are Animal-free