Recombinant Human Activin A protein Active

Human recombinant protein expressed in *Nicotiana benthamiana*

RF0010
Alternative Names: Inhibin beta A chain; Activin beta-A chain; Erythroid differentiation protein
Molecular Formula:C600H911N173O174S13

UniProtKB: P08476

p.I: 7.27

Available sizes: 1 µg, 5 µg, 10 µg, 100 µgof active protein

Ext. Coeff. Abs (280nm) 0.1% (=1g/l) =1.27

Purity >97% by SDS-PAGE gel

Serological identification by WB with specific antibody

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

Molecular Weight:
Recombinant human Activin A is a 27.4 kDa protein composed of two identical 116 amino acid polypeptide chains linked by a single disulfide bond.

Sequence:
HHHHHHGLECDGKVNICCKKQFFVSFKDIGWNDWIIAPSGYHA
NYCEGECPSHIAGTSGSSLSFHSTVINHYRMRGHSPFANLKSCC
VPTKLRPMSMLYYDDGQNIIKKDIQNMIVEECGCS

Formulation:
Lyophilized from a Tris HCl 0.05M buffer at pH 7.4

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. 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:
Human recombinant protein expressed in Nicotiana benthamiana. It is produced by transient expression in non-transgenic plants and is purified by standard protein purification methods. This product contains no animal–derived components or impurities. Animal Free product.

Reconstitution Recommendation:
Lyophilized protein should be reconstituted in water following instructions of batch Quality Control sheet. At higher concentrations the solubility may be reduced and multimers generated. Optimal concentration should be determined for specific application.

Storage and Stability:
This lyophilized preparation is stable at 2-8º C for short term, long storage it should be kept at -20ºC. Reconstituted protein should be stored in working aliquots at –20°C. Repeated freezing and thawing is not recommended.

References:
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-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., Rülicke 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.
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-Phillips D. J., Brauman J. N., Mason A. J., Kretser D.M and Hedger M. P.(1999). A sensitive and specific in vitro bioassay for activin using a mouse plasmacytoma cell line, MPC-11. J. of Endocrinology, 162: 111-116.

Applications:
Cell culture, Western Blot.
For R+D purposes only. Purchaser must determine the suitability of the product for their particular use.
Upon this protein has not been tested in a particular technique this not necessarily excludes its use in such procedures.

Bioassay:
The biological activity of Activin A is measured by its ability to inhibit mouse plasmacytoma cell line (MPC-11) cells proliferation. Cell proliferation was measured by MTT method.
ED50 ≤ 5ng/ml.

For R+D purposes only. Purchaser must determine the suitability of the product(s) for their particular use.
Product(s) expressed through a transient plant system are intrinsically Animal-free

C/Santiago Grisolia 2, D132
PCM 28760 Tres Cantos
Madrid. Spain

info@agrenvec.es
Tel.: + 34 91 633 13 40
Fax.: +34 91 633 21 97