

## Recombinant Human Activin-A active (rh Activin-A)

**Synonyms:** Erythroid differentiation protein, EDF, Inhibin-Beta A chain.

**Introduction:** Activins are homodimers or heterodimers of the various  $\beta$  subunit isoforms, belonging to the TGF $\beta$ -family. Mature Activin A has two 116 amino acids residues  $\beta$ A subunits ( $\beta$ A- $\beta$ A). Activin exhibits a wide range of biological activities, including mesoderm induction, neural cell differentiation, bone remodelling, haematopoiesis and reproductive physiology. Activins play 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 I receptors, ACVR1, ACVR1B, ACVR1C and Activin type II receptors, ACVR2A, ACVR2B. The biological activity of Activin A can be neutralized by inhibins and by the diffusible TGF- $\beta$  antagonist, Follistatin.

**Description:** Human recombinant active form Activin-A produced in plant is a single homodimeric, glycosylated, polypeptide chain containing 2 x 116 amino acids and having a molecular weight of 27.4 kDa. The Active form Activin-A is fused to a 6-His tag at N-terminus and purified by standard chromatographic techniques.

**Source:** *Nicotiana benthamiana*

**Physical Appearance:** Sterile filtered white lyophilized (freeze-dried) powder.

**Formulation:** Lyophilized from a concentrated solution containing 50mM Tris-HCl pH-7.4

**Solubility:** Activin-A should be reconstituted in distilled water to a concentration of 50  $\mu$ g /ml. Due to the protein nature, dimers and multimers may be observed.

**Stability:** Lyophilized rh Activin-A although stable at room temperature for 3 weeks, should be stored desiccated below  $-18^{\circ}$  C. Upon reconstitution rh Activin-A should be stored at  $4^{\circ}$  C between 2-7 days and for future use below  $-18^{\circ}$  C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

**Purity:** Greater than 97.0% as determined by SDS-PAGE.

### Amino Acid Sequence:

HHHHHHGLECDGKVNICCKKQFFVSFKDIGWNDWIIAPSG  
YHANYCEGECPSHIAGTSGSSLSFHSTVINHYRMRGHSPFA  
NLKSCCVPTKLRPMSMLYDDGQNIKKDIQNMIVEECGCS.

**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).  $ED_{50} < 5$  ng/ml, corresponding to a specific activity of  $2 \times 10^5$  units/mg.

This material is offered for **research use only**. Not for use in human. For in vitro use only. ImmunoTools will not be held responsible for patent infringement or other violations that may occur with the use of our products.

<i>small</i>	1 $\mu$ g	Cat.N°	11344471
<i>medium</i>	5 $\mu$ g	Cat.N°	11344470
<i>large</i>	25 $\mu$ g	Cat.N°	11344474

**ImmunoTools** Excellent Quality - Advantageously priced

Gladiolenweg 2; 26169 Friesoythe; Germany  
phone:+49-(0)4491-400997, fax:+49-(0)4491-400998, [info@immunotools.com](mailto:info@immunotools.com)  
[www.immunotools.com](http://www.immunotools.com)