Cytokines

**Human Recombinant Activin A, ACF**

Activin A, animal component-free

<table>
<thead>
<tr>
<th>Catalog #</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>78132</td>
<td>10 μg</td>
</tr>
<tr>
<td>78132.1</td>
<td>100 μg</td>
</tr>
<tr>
<td>78132.2</td>
<td>1000 μg</td>
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</tbody>
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**Product Description**

Activin A is a member of the transforming growth factor beta (TGF-β) family of proteins produced by many cell types throughout development (Gurdon et al.). It is a disulfide-linked homodimer (two beta-A chains) that binds to heteromeric complexes of a type I (ActRI-A and ActRI-B) and a type II (ActRII-A and ActRII-B) serine-threonine kinase receptor (Attisano et al.). Activins primarily signal through SMAD2/3 proteins to regulate a variety of functions, including cell proliferation, differentiation, wound healing, apoptosis, and metabolism (McDowell et al.). Activin A maintains the undifferentiated state of human embryonic stem cells (James et al.; Xiao et al.) and also facilitates differentiation of human embryonic stem cells into definitive endoderm (D’Amour et al.). This product is animal component-free.

**Product Information**

**Alternative Names:** Activin beta-A chain, EDF, Erythroid differentiation protein, FRP, FSH-releasing protein, INHBA, Inhibin betaA chain, Inhibin beta-1

**Accession Number:** P08476

**Amino Acid Sequence:** MGLEDGKVN ICCKQFFVS FKDIGWNDWI IAPSGYHANY CEGECPSHIA GTSGSSLSFH STVINHYRMRGHSPFANLKS CCVPTKLRPM SMLYYDDGQN IIKKDIQNMI VEECGCS

**Predicted Molecular Mass:** 13.1 kDa monomer; 26.2 kDa dimer

**Species:** Human

**Cross Reactivity:** Mouse, Rat

**Formulation:** Lyophilized from a sterile-filtered aqueous solution containing 0.1% trifluoroacetic acid

**Source:** E. coli

**Specifications**

**Activity:** The specific activity is ≥ 1.0 x 10^5 units/mg (EC50 ≤ 10 ng/mL) as determined by a cytotoxicity assay using MPC-11 cells.

**Purity:** ≥ 95%

**Endotoxin Level:** Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/μg protein.

**Preparation and Storage**

**Storage:** Store at -20°C to -80°C.

**Stability:** Stable as supplied for 12 months from date of receipt.

**Preparation:** Centrifuge vial before opening. Resuspend the product in sterile water containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 month or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles.

**NOTE:** If reconstituted product will be used immediately, BSA is not required.
(A) The biological activity of Human Recombinant Activin A, ACF was tested by its ability to inhibit proliferation of MPC-11 cells. Inhibition of cell proliferation was measured after 66 hours of culture using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation inhibition is at 50% of maximum. The EC50 in the example above is 0.436 ng/mL.

(B) 1 μg of Human Recombinant Activin A, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining.

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References