



Product Specification Sheet

Product Name	Stemfactor™ Activin A, Human Recombinant
Description	Stemfactor Activin A is a crystallography-grade preparation providing the highest purity available. Activin A is bi-modal in action having been shown to maintain pluripotency of stem cells and promote differentiation ^{1,2,3,4} . Mature Recombinant human Activin A is a ~25 kDa disulfide-linked homodimer of two 116 amino acid residue βA subunits.
Catalog Number	03-0001
Quantity	5 µg
Source	<i>E. coli</i>
Formulation	Lyophilized from 20% acetonitrile.
Amino Acid Sequence	GLECDGKVN I CCKKQFFV SF KDIGWNDWII APSGYHANYC EGECP SHIAG TSGSSLSFHS TVINHYRMRG HSPFANLKSC CVPTKLRPMS MLYYDDGQNI IKKDIQNMIV EECGCS
Uniprot Accession Number	P08476, residues 311-426.
Purity	Greater than 98% by SDS-PAGE analysis.
Endotoxin Level	Less than 1.0 EU/µg of Activin A as determined by the LAL method.
Biologic Activity	The ED ₅₀ is less than 6 ng/ml as determined by its ability to inhibit the proliferation of mouse MPC-11 cells.
Storage and Stability	Stemfactor Activin A is shipped at room temperature. Lyophilized Activin A is stable for up to 6 months from date of receipt when stored at -20°C to -80°C. Reconstituted Activin A, at concentrations greater than 0.1 mg/ml, is stable for up to 3 months when stored at -20°C and for 1 year when stored at -80°C.
Reconstitution	Centrifuge briefly and reconstitute Activin A in 10 mM HCl before dilution in cell culture medium. Avoid freeze-thaw cycles as it can result in loss of activity.
References	<ol style="list-style-type: none">1. Beattie, G.M., Lopez, A.D., Bucay, N., Hinton, A., Firpo, M.T., King, C.C., and Hayek, A. (2005) Activin A maintains pluripotency of human embryonic stem cells in the absence of feeder layers. <i>Stem Cells</i> 23: 489-495.2. Vallier, L., Alexander, M., and Pedersen, R.A. (2005) Activin/Nodal and FGF pathways cooperate to maintain pluripotency of human embryonic stem cells. <i>J. Cell Sci.</i> 118: 4495-4509.3. Sulzbacher, S., Schroeder, I.S., Truong, T.T., and Wobus, A.M. (2009) Activin A-induced differentiation of embryonic stem cells into endoderm and pancreatic progenitors- the influence of differentiation factors and culture conditions. <i>Stem Cell Rev.</i> 5: 159-173.4. Valdimarsdottir, G., and Mummery, C. (2005) Functions of the TGFβ superfamily in human embryonic cells. <i>APMIS</i> 113: 773-789.

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Stemgent, 10575 Roselle St., San Diego, CA 92121 www.stemgent.com v3.0