

## PRODUCT DESCRIPTION

StemBeads<sup>®</sup> Activin A is a patented growth factor supplement that offers a novel way to grow Activin A-dependent cell cultures more efficiently, with fewer media changes. StemBeads<sup>®</sup> Activin A are microparticles composed of a FDA approved, biodegradable polymer that is loaded with recombinant human Activin A. Under the microscope, the StemBeads<sup>®</sup> Activin A will appear as dark circles that do not harm the cells, and with time, break down to release the encapsulated protein at a controlled rate. The stable level of Activin A in culture allows for more homogeneous cell cultures, while saving researchers valuable time with fewer media changes.

## ORDERING INFORMATION

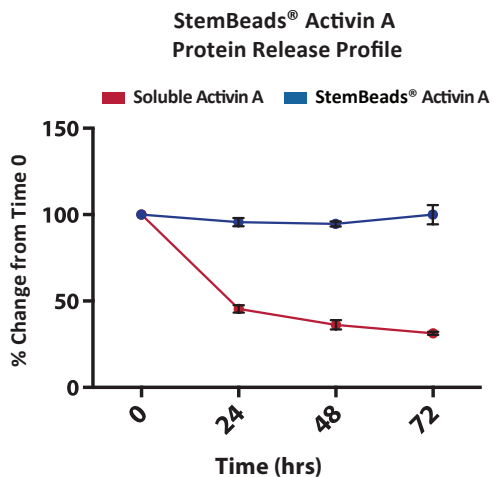
CATALOG #	PRODUCT NAME	SIZE	RELEASE
SBAC1	StemBeads <sup>®</sup> Activin A	1 mL	10 µL/mL = 10 ng/mL
SBAC5	StemBeads <sup>®</sup> Activin A	5 mL	10 µL/mL = 10 ng/mL



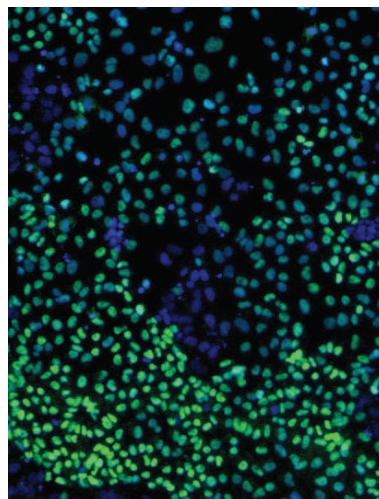
## PRODUCT SPECIFICATIONS

- Reconstitution & Use:** StemBeads<sup>®</sup> Activin A are provided as a ready-to-use 5 mL solution in DMEM/F12.
- Storage & Stability:** Upon arrival store at 4°C. StemBeads<sup>®</sup> Activin A are stable for up to 6 months when stored at 4°C.
- Release Profile:** 10 µL/mL StemBeads<sup>®</sup> Activin = 10 ng/mL release of soluble Activin A.
- Physical Characteristics:** StemBeads<sup>®</sup> Activin A are 45 ± 25 µm in diameter.

## APPLICATION DATA

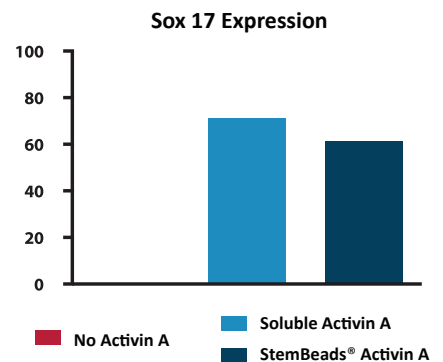


Measurement of soluble Activin A protein released into culture medium over a three day timecourse. Media was treated with 10 ng/mL soluble Activin A or 10 µL StemBeads<sup>®</sup> Activin A. The soluble protein level of the condition containing soluble Activin A dramatically decreases after 24hr versus media containing StemBeads<sup>®</sup> Activin A.



Hoechst / Sox 17

hPSCs that were differentiated by a single media change containing StemBeads<sup>®</sup> Activin A express definitive endoderm marker Sox 17 after 4 days in culture.



hPSCs were differentiated towards definitive endoderm for 4 days in parallel using either a typical high Activin A based protocol (daily media changes) or using StemBeads<sup>®</sup> Activin A (single media change). Cells differentiated in media supplemented with StemBeads<sup>®</sup> Activin A express levels of Sox17 by IF similar to that of traditional protocol while using less media, soluble growth factors, and time.

## DIRECTIONS FOR USE

- 1) Aliquot desired volume of media.
- 2) Mix vial of StemBeads<sup>®</sup> Activin A thoroughly by vortexing or pipetting prior to use as the StemBeads<sup>®</sup> Activin A will settle quickly.
- 3) Add StemBeads<sup>®</sup> Activin A into aliquot of media at the desired concentration (using a concentration of 10µL StemBeads<sup>®</sup> Activin A per 1 mL of media will give a 10 ng/mL release of soluble Activin A protein).
- 4) Remove media from culture dish and wash twice with DMEM. Alternatively, PBS, F12 or basal medium can also be used to wash.
- 5) Mix media containing StemBeads<sup>®</sup> Activin A well and plate into culture dish.
- 6) Change media every 2-3 days depending on cell density and culture conditions. StemBeads<sup>®</sup> Activin A can also be supplemented into media during passaging and plating of cells. Cells should be passaged as required depending on density and culture method.

FOR RESEARCH USE ONLY. NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES.