

PRODUCT DESCRIPTION

StemBeads® FGF2 is a patented growth factor supplement that offers a novel way to grow Fibroblast Growth Factor 2 - dependent cell cultures more efficiently, with greater control, and with fewer medium changes. StemBeads® FGF2 are microparticles composed of an FDA approved, biodegradable polymer that is loaded with recombinant human Fibroblast Growth Factor 2. Under the microscope, StemBeads® will appear as dark spheres that do not harm the cells, and with time, will break down while releasing the encapsulated protein at a controlled rate. Controlled delivery and stable levels of FGF2 in culture allows for improved cell cultures, while saving researchers valuable time and resources.

ORDERING INFORMATION

Catalog #	Product Name	Size	Release
SB501	StemBeads® FGF2	1 mL	8 µL/mL = 10 ng/mL
SB500	StemBeads® FGF2	3 mL	8 µL/mL = 10 ng/mL



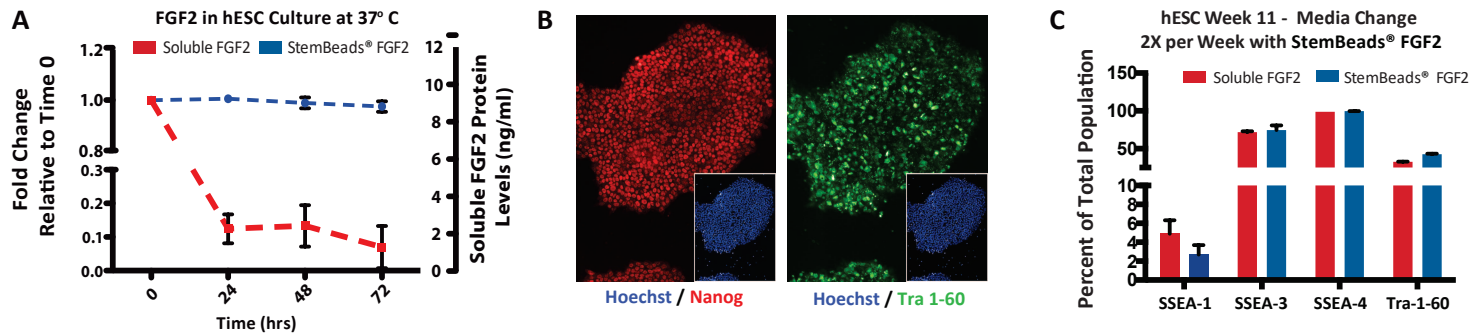
PRODUCT SPECIFICATIONS

Reconstitution & Use: StemBeads® FGF2 are provided as a ready-to-use 3 mL solution in DMEM/F12.

Storage & Stability: Upon arrival store at 4°C. StemBeads® FGF2 are stable for 12 months without loss of activity when stored at 4°C.

Release Profile: 8 µL/mL StemBeads® FGF2 = 10 ng/mL release of soluble FGF2.

Average Particle Size: 15 ± 5 µm diameter.



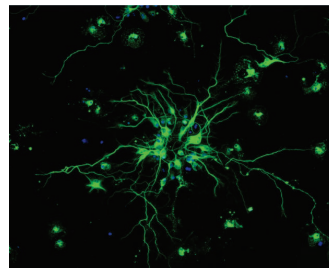
A) Measurement of soluble FGF2 protein released into culture medium plated on hESCs over a three day timecourse. Media was treated with either 10 ng/mL soluble FGF2 or 8 µL StemBeads® FGF2. Soluble FGF2 dramatically decreases after 24 hrs versus StemBeads® FGF2 that releases 10 ng/ml steadily over 3 days. B & C) hESCs express pluripotency markers Nanog/Tra-1-60 by IF and SSEA-3/SSEA-4/Tra-1-60 by qRT-PCR after 11 weeks in culture using StemBeads® FGF2.

hESC (p50) - 11 weeks in StemBeads® FGF2

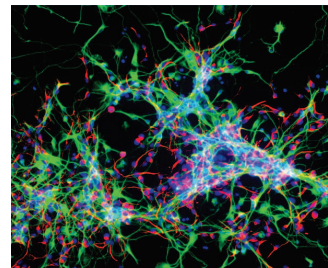


hESCs cultured via once-a-week passage and twice-a-week feed for 11 weeks using media supplemented with StemBeads® FGF2 exhibit normal karyotype.

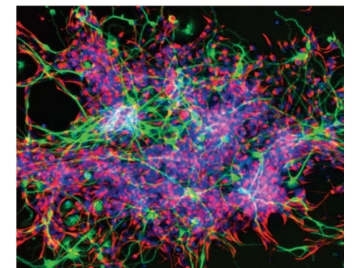
No FGF2



Soluble FGF2



StemBeads® FGF2



StemBeads® FGF2 produce more undifferentiated mouse and human neural stem cell (NSC) cultures. Shown above, mouse NSCs grown for one week in StemBeads® FGF2 show increased progenitor cells (Nestin+) and decreased neuronal differentiation (TUI1+) compared to no FGF2 and soluble FGF2.

GENERAL REFERENCES

Lotz S., et al. Sustained Levels of FGF2 Maintain Undifferentiated Stem Cell Cultures with Biweekly Feeding. PLoS ONE 2013, 8(2).

van de Leemput J., et al. CORTECON: a temporal transcriptome analysis of in vitro human cerebral cortex development from human embryonic stem cells. Neuron. 2014, 83(1):51-68.

Boles, N.C., et al. NPTX1 regulates neural lineage specification from human pluripotent stem cells. Cell Rep. 2014, 6(4):724-36.

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