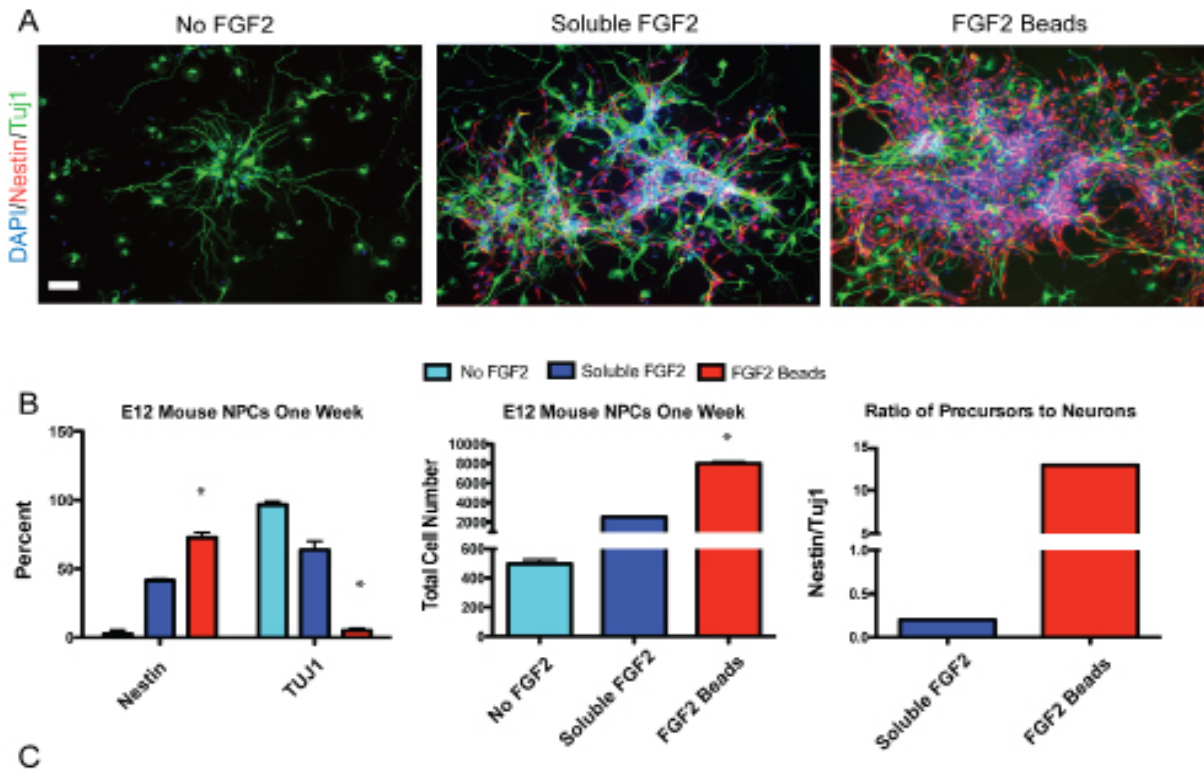


## APPLICATION: Neural Stem Cells

### DESCRIPTION

StemBeads® FGF2 is a patented growth factor supplement that offers a novel way to grow FGF2-dependent cell cultures more efficiently—with fewer media changes. StemBeads® FGF2 contains an FDA-approved PLGA polymer loaded with FGF2 to release at a particular concentration. The stable level of FGF2 in culture allows for a more homogenous, undifferentiated stem cell culture and while saving researchers valuable time with less media changes. Under the microscope, StemBeads® appear as dark circles that do not harm the cells and break down over time.

### PRODUCT DATA

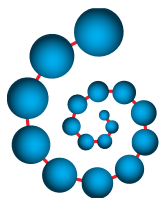


### FGF2 beads produce a more undifferentiated mouse and human neural stem cell cultures

(A) Mouse NSCs grown for one week in StemBeads® show increased progenitor cells (Nestin+) and decreased neuronal differentiation (TUJ1+) compared to no FGF2 and soluble FGF2, data quantified in (B). Similar data obtained using human NSCs derived from pluripotent stem cells (scale bars = 50 microns).

SAVE TIME • BETTER CELLS

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#### Product Handling / Directions For Use

<i>Reconstitution &amp; Use:</i>	StemBeads® FGF2 are provided as a ready-to-use 3mL solution in DMEM/F12
<i>Storage &amp; Stability:</i>	Upon arrival store at 4°C. StemBeads® FGF2 are stable for up to 6 months without loss of activity when stored at 4°C.
<i>Release Profile:</i>	8 µL/mL StemBeads® FGF2 = 10 ng/mL release of soluble FGF2
<i>Physical Characteristics:</i>	StemBeads® FGF2 are 15 ± 2µm in diameter.

For further details concerning StemBeads® FGF2, please refer to StemBeads® FGF2 Product information Sheet.

#### Suggested Protocol

The following protocol describes suggested methods for growing neural stem cells (NSCs) using media supplemented with StemBeads® FGF2. This protocol will utilize every 3<sup>rd</sup> day media changes with a split usually once per week. While StemBeads® FGF2 are not designed to work with a specific type of media, we do recommend using a media compatible with growth of NSCs. For example, a media that contains supplements such as N2 and B27 (GIBCO).

#### Preparation of Media with StemBeads-FGF2:

- 1) Aliquot desired of defined neural stem cell culture media.
- 2) Mix vial of StemBeads® FGF2 thoroughly by mild vortexing or pipetting prior to use as the beads will quickly settle.
- 3) Add StemBeads® FGF2 into the aliquot of defined media at a concentration of 8µl StemBeads® FGF2 per 1ml of media for a 10ng/ml release.

#### Culturing freshly isolated neural stem cells with StemBeads-FGF2:

Day 0) Dissociate NSCs using preferred method, then re-plate in a defined media supplemented with StemBeads® FGF2 onto a pre-coated culture vessel.

Day 3) Remove media, rinse 2X with either base media or PBS, and replace with fresh media supplemented with StemBeads® FGF2.

Day 6) Continue feeding cells according to this paradigm until either cell splitting or conclusion of experiment.

#### Culturing established neural stem cell lines with StemBeads-FGF2:

Day-3) Remove media and replace with fresh media supplemented with StemBeads® FGF2.

Day 0) Dissociate NSCs using preferred method, then re-plate in a defined media supplemented with StemBeads® FGF2 onto a pre-coated culture vessel.

Day 3) Remove media, rinse 2X with either base media or PBS, and replace with fresh media supplemented with StemBeads® FGF2.

Day 6) Continue feeding cells according to this paradigm until either cell splitting or conclusion of experiment.

#### References

Lotz S., Goderie S., Tokas N., Hirsch S.E., Ahmad F., Corneo B., Le S., Banerjee a., Kane R.S., Stern J., Temple S., Fasano C.A. Sustained Levels of FGF2 Maintain Undifferentiated Stem Cell Cultures with Biweekly Feeding. *PLoS ONE* 2013, 8 (2)

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