

StemBeads® Qkine FGF2

Product Information Sheet



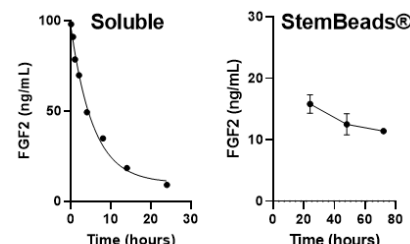
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Product Description

StemBeads® Qkine FGF2 is a patented growth factor supplement that offers a novel way to culture cells with Fibroblast Growth Factor 2 more efficiently. FGF2 is key for growth of human induced pluripotent stem cells (iPSCs), fibroblast cells, wound healing cells such as macrophages, cancer cells, and neural progenitor cells (NPCs). StemBeads® Qkine FGF2 are microbeads composed of an FDA approved, biodegradable PLGA polymer that is loaded with Qkine recombinant human FGF2 (Qk025, Qk027). Controlled delivery and stable levels overcome the 4.5 hour half-life (Figure 1) of FGF2 and improve cell cultures while saving researchers valuable time and resources.

StemBeads® Qkine FGF2 have been tested in medium such as mTeSR, mTeSR plus, Stemflex, Flex 8, Nutristem, 10% FBS, and neuronal medium including neural progenitor expansion medium (NPEM) with enhanced cellular profiles. StemBeads® Qkine FGF2 can be combined with other StemBeads® varieties.

Figure 1



Product Information

Catalog #	Product Name	Storage	Expiration	Average Particle Size	Reconstitution
Qk-SB500-145, Qk-SB501-145, Qk-SB500-154, Qk-SB501-154	StemBeads® Qkine FGF2 145 aa, StemBeads® Qkine FGF2 154 aa	4°C	1 year from manufacture (see label)	15 ± 5 µm diameter	Ready-to-use solution in DMEM/F12

Suggested Protocol: Feeder-Free Maintenance & Expansion of hiPSCs/hESCs

Preparation of Media with StemBeads® Qkine FGF2

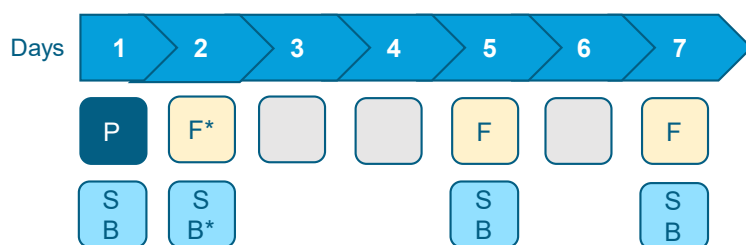
1. Mix vial of StemBeads® Qkine FGF2 thoroughly by vortexing or pipetting prior to use.
2. Add 8 µL of StemBeads® Qkine FGF2 per 1 mL of medium. This will provide cells with stable 10 ng/mL FGF2. See back for additional release data.

Culturing hPSCs with StemBeads® Qkine FGF2

1. Day 0: Split hPSCs using preferred enzymatic method, then plate into pre-coated culture dish in medium supplemented with StemBeads® Qkine FGF2.
2. Day 1 (optional): If a large number of unattached cells are observed, wash cells 2x with medium (ex. DMEM/F12) and replace with StemBeads® Qkine FGF2 supplemented medium.
3. Day 4: Remove culture medium, *wash 2x with medium (ex. DMEM/F12) and replace with StemBeads® Qkine FGF2 supplemented medium.
4. Day 6: Repeat the washing step, then split and feed as described above, Day 0 – Day 4.

*Note: Washing is highly recommended prior to each feed to remove cell debris and remaining beads.

Recommended Culture Schedule



*Day 2 refeed is optional Refeed and repeat as needed

P: Passage Cells

F: Feed

SB: Wash 2x, Add StemBeads supplemented medium

Note: Different cell lines, culture densities, and media may require adjusted schedules

Please reach out to support@stemcultures.com for ordering and technical support.

Release Data

StemBeads® Qkine FGF2 release in media can be adjusted slightly based on the amount of StemBeads® added or the amount of medium used. We recommend a release of 10 ng/mL when culturing iPSCs. However, to fit other needs, the release can be adjusted slightly. See the chart below for reference.

Volume of StemBeads® Qkine FGF2	Volume of Medium Added	FGF2 Release in Volume of Medium Added
4 µL	1 mL	5 ng/mL
8 µL	1 mL	10 ng/mL
16 µL	1 mL	20 ng/mL
8 µL	0.5 mL	20 ng/mL
8 µL	1 mL	10 ng/mL
8 µL	2 mL	5 ng/mL

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.