Frequently Asked Questions – FGF2 DISCs

Do I need to change the type of media I use if I am using FGF2 DISCs?

No, FGF2 DISCs can be used with the media you normally use for your cell cultures. The only change is that with DISCs you will feed less often and use less medium. Using DISCs and performing fewer feeds improves stem cell pluripotency.

Will FGF2 DISCs interfere with my downstream application of the cells?

FGF2 DISCs have been shown to have a positive impact on downstream applications of cells because they increase pluripotency and reduce unwanted cell differentiation.

How often do I need to change the DISC?

We recommend changing the DISC every 6-8 days.

Do I have to change a DISC every time I do a medium change?

No, leave the same DISC in the well for about a week and perform medium changes without changing the DISC. For tips and an instructional video on using and removing FGF2 DISCs, click this link: https://stemcultures.com/discs/

Are FGF2 DISCs difficult to add or remove from my cultures?

No, FGF2 DISCs can be easily added using sterile forceps and removed by using a low vacuum or pipette.

How big are FGF2 DISCs?

FGF2 DISCs are available in two sizes, Standard and Mini. Standard size DISCs are approximately 2-3 mm in diameter when dry, 5-6 mm in diameter when rehydrated. Mini size DISCs are approximately 1-2 mm in diameter when dry, 2-3 mm in diameter when rehydrated.

How do I know what size DISCs I should use?

StemCultures offers two DISC sizes to accommodate standard culture plate sizes. To find which DISC is ideal for your purpose, see Table 1 below.

***Table 1**: Recommended DISC per plate size*

Plate Size	Volume of Medium Added	Recommended DISC	Release in Volume of Media Added*
6 well	2 mL	Standard (DSC500)	10 ng/mL
12 well	1 mL	Mini (DSC505)	10 ng/mL
12 well	2 mL	Standard (DSC500)	10 ng/mL
24 well	1 mL	Mini (DSC505)	10 ng/mL
24 well	2 mL	Standard (DSC500)	10 ng/mL
48 well	1 mL	Mini (DSC505)	10 ng/mL

*we recommend a release of 10 ng/mL when culturing iPSCs. However, to fit other needs, the release can be adjusted slightly based on the amount of media that is added. See Table 2 below for reference.

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What if I want a different concentration, can the protein release be adjusted?

Yes, the protein concentration can be adjusted based on the number of DISCs, the size DISCs, and the amount of medium used. Table 2 on the right outlines how the release is affected by the number of DISCs and amount of medium when using our Standard size DISCs (DSC500). If you are using our Mini size DISCs (DSC505), the release volumes are exactly half of what is listed in the table. (Ex. One Mini DISC in 1 mL of medium releases at 10 ng/mL.)

Table 2: *Ways to adjust protein release. Based off standard size DISC release.*

Number of FGF2-DISCs	Volume of Medium	FGF2 Release Level	*Example Culture Dish*
1	0.5 ml	40 ng/ml	24 well plate
1	1 ml	20 ng/ml	12 well plate
1	2 ml	10 ng/ml	6 well Plate
1	4 ml	5 ng/ml	T25 Flask
2	2 ml	20 ng/ml	6 well plate
3	2 ml	30 ng/ml	6 well plate
4	2 ml	40 ng/ml	6 well plate

What if I observe a lower proliferation of pluripotent stem cells (PSCs) after a passage?

We suggest increasing your seeding density (i.e. decrease the split ratio).

What should I do if I see pH changes in my cultures?

Cultures should be monitored, and additional medium changes performed as needed. In high density cultures, this is especially important: we recommend increasing the frequency of medium changes or adding buffers to your medium, such as sodium bicarbonate or HEPES, to help maintain pH levels.

What should I do if I see increased cell debris in my cultures?

When medium is changed less often, it should be expected that cell debris will accumulate and may appear at a higher level than when medium is changed daily. Users have not reported this as being detrimental.

Can DISCs work with other cell types?

Yes, FGF2 signaling is important for several different cell types.

Can DISCs release other growth factors besides FGF2?

Yes, DISCs are a platform technology and can be custom made. Please contact us at support@stemcultures.com for custom orders.

What do I do if DISCs become hydrated and difficult to handle?

DISCs are hydrogels and readily absorb moisture, which can cause them to stick and become more difficult to handle. We recommend storing DISCs at 4 °C. If DISCs do absorb moisture, they can easily be re-dried in a cell culture hood by leaving the lid ajar for 15-30 minutes.