



StageFlexer® Membranes

Product Information Sheet

03/29/16 Rev. 1.0

StageFlexer® membranes are 43 mm diameter, silicone elastomer disks (membrane thickness: 0.020 inch; Fig. 1). The silicone elastomer comes untreated or with covalently bonded proteins to improve cell attachment (Table 1). StageFlexer® membranes can be used with the Flexcell® Tension System in conjunction with the StageFlexer® and the FlexFlow™ microscope devices to apply equibiaxial tensile strain to cells in monolayer culture (see Table 2 for applicable strain ranges). For more information, see the StageFlexer® membrane product webpage at

<http://www.flexcellint.com/StageFlexerMembrane.htm>.

PLATING CELLS ON STAGEFLEXER® MEMBRANES

Cells should be seeded onto the membranes according to your laboratory's established protocol for primary cultures or continuous cell lines in the medium of choice. In general:

1. Release cells from their substrates with 0.05% trypsin, trypsin-EDTA, 0.05% bacterial collagenase, or other means.
2. Add serum containing media to the cells to neutralize the trypsin or collagenase.
3. Count cells and determine the number of cells needed. *NOTE: Cell seeding density will vary depending on cell type. We recommend testing cell seeding densities to determine the best cell number for your application and cell type. Only cells that are going to receive uniform strain are those attached to the area of the membrane that is over the post when the membrane is in its fully stretched position. Therefore, it is best to attempt to plate cells only in the uniformly strained area or to view or test the cells that are in the uniformly strained area. To determine this area, the following equation can be used:*

$$\text{Diameter} = (\text{Diameter of Loading Station}) / (1 + (\text{Max}\% \text{Elongation} / 100))$$

where "Max%Elongation" is the maximum % elongation that you plan to use in your regimen and "Diameter" is the diameter of the circle at the center of the membrane. Any cells outside of this circle will not receive uniform strain.

4. Wash cells with medium to remove trypsin or collagenase.
5. Resuspend cells in medium of choice and seed onto the membrane.

ORDERING INFORMATION

StageFlexer® membranes (Cat. No. SFM) are sold in a pack of 6 or by the case of 36. Each membrane is sterile and individually packaged in a standard culture dish. See Table 1 for catalog numbers and corresponding protein coatings. Flexcell® membranes have a shelf life of 1 year when stored at room temperature or 4 °C in the dark or out of direct light.

Table 1. StageFlexer® membrane catalog numbers and corresponding protein coating.

Catalog Number	Coating*
SFM-U	Untreated
SFM-A	Amino
SFM-C	Collagen I
SFM-C(IV)	Collagen IV
SFM-E	Elastin
SFM-L	Laminin (YIGSR)
SFM-P	Pronectin (RGD)

*For more information on these coatings, see Tech Report 106: Matrix Bonded Growth Surfaces. Growing Cells in a More Natural Matrix Environment:

http://www.flexcellint.com/documents/106_MatrixBondedSurfacesTech.pdf.

Table 2. Strain ranges for the StageFlexer® and the FlexFlow™ microscope devices.

Device	Strain Range
StageFlexer®	1.6% - 14.8% (25 mm)
	1.9% - 13.4% (28 mm)
	2.1% - 8.6% (31 mm)
FlexFlow™	0.8% - 4.3%

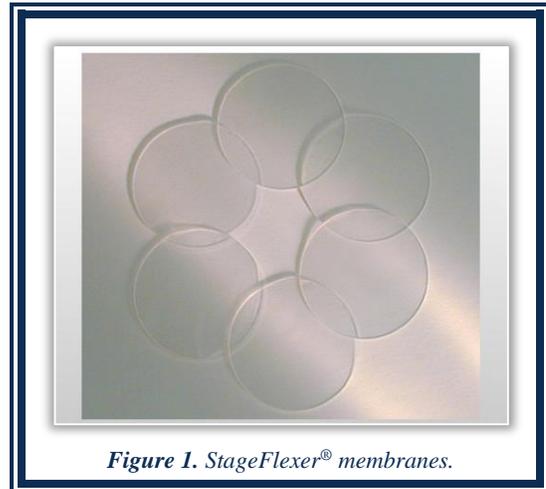


Figure 1. StageFlexer® membranes.

Flexcell® culture plates are protected by the following patents: US Patents 4,789,601 and 4,822,741 (International Patents DE3855631D1, DE3855631T2, EP0365536B1); US Patent 6,048,723; US Patent 6,218,178.