Directions for Use
Electrospun Gelatin Discs
8mm Diameter
Catalog Number **#5214-5EA**

Product Description

Electrospun Gelatin Discs are fabricated using electrospinning techniques to create a construct with a unique structure suitable as a biomimetic three-dimensional (3D) scaffold. The product contains overlaid electrospun filaments creating a porous network, which permits cells and nutrients to flow completely through the pores and provides an increased surface area for cell attachment, growth and migration.

Electrospun Gelatin Discs are lightly cross-linked for increased mechanical strength and durability for short and long-term tissue culture experiments, yet is still biodegradable over the longer-term.

The average filament diameter typically ranges from 500nm to 1.5 microns. The electrospun gelatin discs are approximately 8 mm in diameter and 1-2 mm thick. The sponge discs fit into a 48 well culture plate or larger. Each package contains five discs. This product is sterilized and ready-to-use.

Table 1:

Parameter, Testing and Method	**Electrospun Gelatin Discs Catalog #5214-5EA**
Shape	Disc – 8 mm Diameter
Packaging Size	5 Discs/package
Disc Thickness	1-2 mm
Fiber Diameter	500 nm – 1.5 µm
Storage Temperature	Room Temperature
Shelf Life	Under Evaluation
Sterilization	UV Irradiation
Source	Porcine Gelatin

A. Preparation and Seeding:

Note: Cell attachment to the sponge is generally the most critical step in tissue culture. Temperature, pH, gas exchange and cell concentration can affect the rate and efficiency of attachment. Optimum seeding rate depends on the type of cell being cultured.

1. Aseptically remove the Electrospun Gelatin Discs from the packaging in a laminar flow work station.

2. Carefully place the sponges into the wells of a 48 well tissue culture plate or larger using a sterile instrument. Be careful not to damage the product as it is being transferred. It is recommended to use non-treated tissue culture plasticware.
   Note: Tissue-coated plasticware may need to be coated with agarose to prevent cell attachment to the plastic and promote attachment to the sponge.

3. Suspend cells at desired concentration (approximately 5,000 cells/cm^2) and dispense sufficient volume of cell solution on top of the sponge placed in the well.

Note: Avoid dispensing the cell solution too rapidly as this may cause damage to the sponge.

4. Transfer to a 37ºC incubator for about 1 – 2 hours to allow for initial cell attachment.

5. After 1 – 2 hours, remove the plate from the incubator and check for cell attachment. Additional testing may be required to optimize the time it takes for the cells to attach to the discs. Check the morphology of the cells. Cell adherence and spreading will dictate the time needed for attachment.

6. Once the cells have adequately attached to the disc, increase the final volume in each well to fully cover and provide adequate medium for the culture system.

B. Changing the Media:

1. Change the media 24 to 36 hours after the initial seeding. The frequency of changes will be determined by cell type, cell attachment efficiency, and pH. More frequent medium changes may be required compared to 2D culture systems.

C. Harvesting of Cells:

Note: Protease digestion is the standard method of releasing cells from the discs. The strength of the attachment of the cells to the discs will vary from cell line to cell line. The enzyme concentration and digestion time will vary depending upon the activity of the enzyme and the confluence of the cells. Collagenase and/or trypsin may be the preferred method.

1. Washing the discs with EDTA-PBS may assist the protease digestion. Add sufficient volume to cover the disc.

2. Aspirate the EDTA-PBS solution from the well.

3. Add sufficient dissociation solution to the well to fully submerge the discs.

4. Transfer to a 37ºC incubator. Check for cell detachment periodically.

5. Once the cells have fully detached, remove the cells and dispense in a centrifuge tube.

6. Centrifuge the cells as required.

