

CytoSoft® Imaging 96-Well Plate (Elastic Moduli 0.2 kPa)

Coated Cultureware

Cat. # CC313

FOR RESEARCH USE ONLY.
NOT FOR USE IN DIAGNOSTIC PROCEDURES.
NOT FOR HUMAN OR ANIMAL CONSUMPTION.

pack size: 1 ea

Store at Room Temperature



Data Sheet

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Background

The rigidity of the cell's substrate (such as the extracellular matrix) can have a profound effect on cell function including morphology, differentiation and gene expression. Young's elastic modulus is a mechanical property that measures the stiffness of a solid material. It defines the relationship between stress and strain in a material and is measured in kPa.

CytoSoft® plates provide a tool to culture cells on substrates with defined rigidities covering a broad physiological range (0.2 kPa- 64 kPa). On the bottom of each well, there is a thin layer of specially formulated biocompatible silicone, whose elastic modulus (rigidity) is carefully measured and certified. The surfaces of the gels are functionalized to form covalent bonds with amines on proteins. The gel readily binds to purified ECM proteins, such as PureCol® type I collagen (5006), prior to cell addition.

CytoSoft® Imaging plates are designed for high-resolution imaging where low autofluorescence and exceptional optical clarity are required. These plates accommodate both live cell imaging and common fixation techniques such as immunostaining. Plate consists of a 175 µm thin polycarbonate film-bottom plate bonded with a black polystyrene frame and includes a lid. The plates are sterilized using ozone and provided with 1 plate per package.

Storage

Store CytoSoft® Imaging plates at room temperature.

Components

1 CytoSoft® Imaging 96-Well Plate

Quality Control

Young's elastic modulus: 0.1 – 0.3 kPa

Sterility: Ozone

Cell attachment: Tested

Cell growth: Tested

Instructions For Use

Coating Procedure

Note: Use these recommendations as guidelines to determine the optimal coating conditions for your culture system. The bottom of the plate can be detached by excessive mechanical force such as centrifugation or direct contact with liquid handling tools (tips, pipettes, etc.).

1. Remove the CytoSoft® product from the protective sleeve in a sterile hood.
2. Prepare extracellular matrix material by neutralizing in amine-free buffer pH 7.4 to 7.9 (such as 1X DPBS). We do not recommend using gelatin as your ECM protein. *Note: Pre-warm the coating solution to approximately room temperature before use.*
3. Dilute as needed, and dispense 150 µL of solution into each well to coat the surface. *Note: Recommended dilution for PureCol® Type I collagen is 1:30 (~100 µg/ml). Note: The hydrophobic surface requires larger volumes to cover the surface than do conventional plastic dishes*
4. Incubate ECM coated CytoSoft® at room temperature, covered for 1 hour.
5. After incubation, aspirate any remaining material and rinse coated surfaces immediately two times with culture medium or PBS. Leave about 150 µL of medium per well to keep surface covered. *Note: Do not allow the CytoSoft® surface to become dry once the surface has been wetted.*
6. Coated surfaces are ready for use. Standard harvesting procedures used for removing cells from cultureware can be employed for harvesting cells from the CytoSoft® product including use of trypsin, Accutase® and non-enzymatic cell detachment solutions.

Please visit www.milliporesigma.com for additional product information and references.

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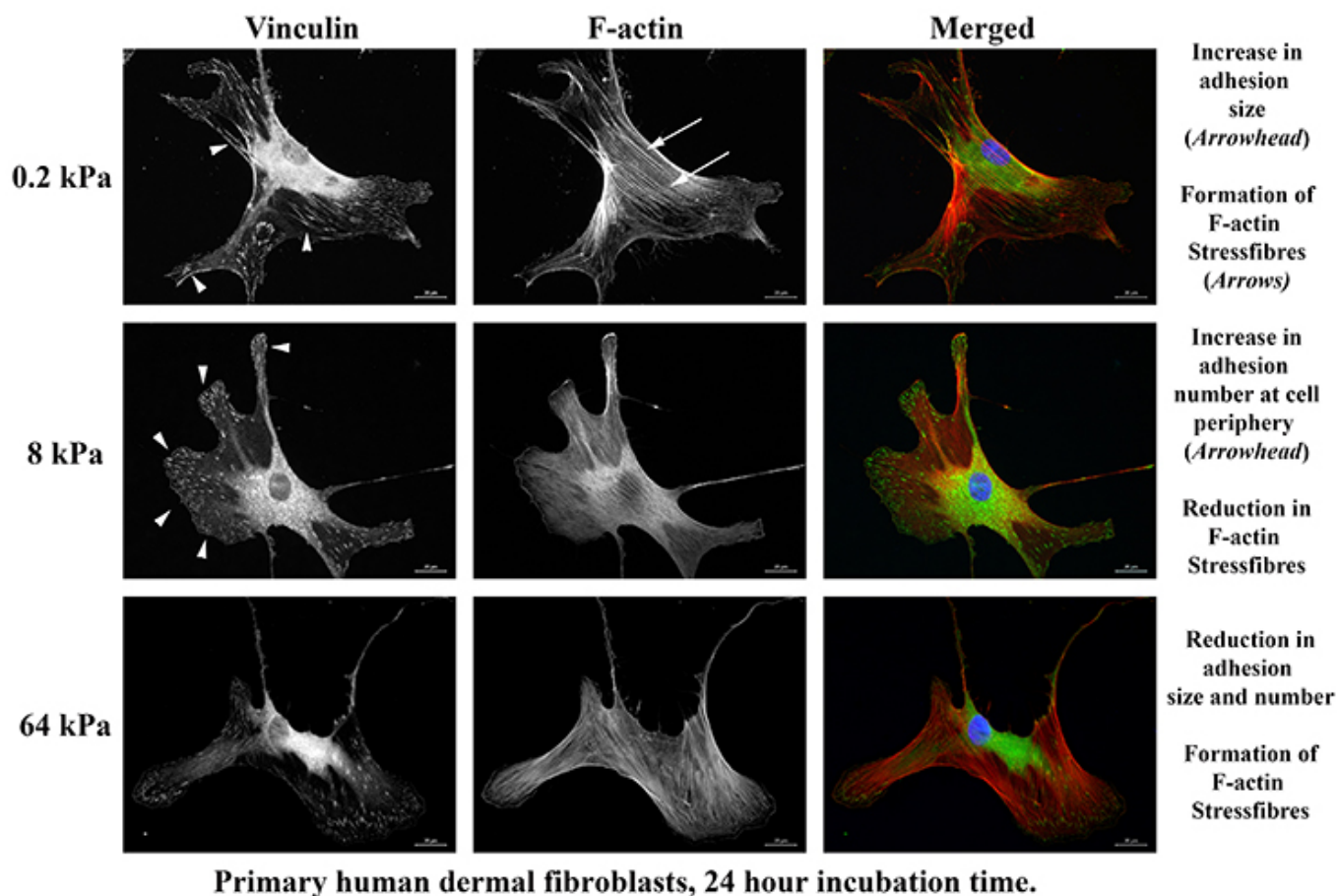


Figure 1. CytoSoft® plates can also be used to show how fibroblasts are able to discriminate between the underlying stiffness. Varying substrate stiffness alters both adhesion and stress fibers. Fibroblasts cultured on 8 kPa stiffness have reduced intracellular tension and increased adhesion.