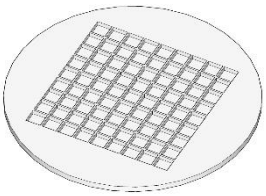
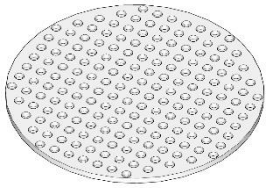
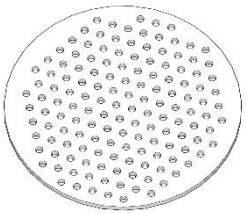
Instructions Microcell array



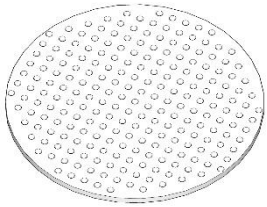
microgrid array



microwell array



micromesh array



microEB array

The microcell arrays are a range of silicone inserts that can be used for live cell imaging. The micrometer sized wells can easily confine cells to a defined location and area for imaging while maintaining sufficient media transfer to ensure long term dynamic events can be recorded.

The inserts can be used with a range of different cell culture or imaging plates including (but not limited to); glass slides, coverslips, 35mm dish, multi-well plates (6, 12, ..., 96 wells) and chamber slides.

Material

The microcell arrays are manufactured from a bio-compatible self-adhesive silicone material in either clear (poly dimethylsiloxane (PDMS), Sylgard 184) or black (poly dimethylsiloxane (PDMS), Sylgard 170) and are mounted on a carrier substrate (soda lime glass, ground edges).

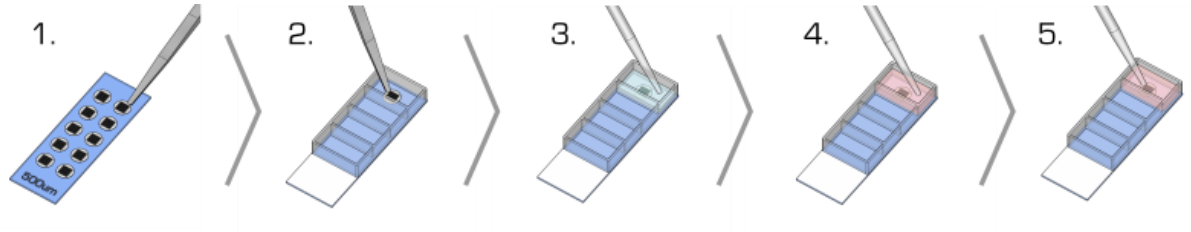
While the arrays are autoclavable and compatible with some alcohols we do not recommend reusing them.

Shipping, storage and handling

The microcell arrays are sterilized and packaged in a protective slide container and transported in a vacuum sealed bag. The shelf life under typical storage conditions (room temperature, no direct sunlight) is 12 months.

Always use gloves and tweezers when working with the microcell arrays as contamination (e.g. dust, oils,...) from the skin can affect the adhesion of the arrays.

Protocol for using a microcell array



1. Lift an edge of the microcell array insert with a pair of fine tweezers to peel the insert off the slide.

2. Carefully place the microcell array into the imaging culture ware by laying the insert down from one edge to ensure that no air is trapped between the surface of the culture ware and the microcell array. If air bubbles become trapped, then remove the insert and try again. If the trapping of air bubbles continues, place one to two drops of ethanol onto the culture ware, then lay the insert down. Please note, if you use ethanol to assist in laying the insert down, leave the culture ware in the hood for at least 60 minutes to allow the ethanol to evaporate, otherwise the insert will not stick to the cell culture ware when the media is added.

> NOTE:
> To check for trapped air bubbles under the array turn the culture ware upside down and look through the bottom surface.

3. The microcell array inserts are provided in vacuum sealed packaging; however, we recommend the following step for sterilization. Pipette 70 - 100% ethanol on top of the microcell array until the bottom surface of the culture ware including the insert is covered. Use a 1,000 µL pipette to cycle the ethanol in the culture ware in order to assist in removing any air bubbles that may be trapped in the wells. Finally use the pipette to draw out almost all the ethanol from the culture ware making sure that the array is always covered in liquid, and discard as waste.

> NOTE:
> The microcell arrays are very hydrophobic and the addition of warm media to the arrays if they ethanol rinse is completely aspirated will result in air bubbles being trapped in the wells.

4. Slowly add warm media to one corner of the culture ware until almost full.

5. Draw out the media/ethanol mixture from the opposite corner of the culture ware, taking care that the microcell array is always covered with liquid.

6. Repeat steps 4 and 5 at least five times to make sure the ethanol is completely diluted out.

7. Pipette cells into the culture ware directly above the array. For a typical imaging experiment, seed between 1 - 2x10^4 cells. Allow approximately 30 mins for the cells to settle before imaging.

Tips

Microcell array not sticking to the cell culture ware

1. Remove the insert from the cell culture ware.
2. Place the bottom surface of the microcell array onto a piece of 3M Scotch Magic tape. The insert can aggressively collect dust that reduces its ability to self-adhere to a surface. The scotch tape removes the dust enabling the insert to stick to the culture ware.

> NOTE:
> General sticky tape will not work as it can leave glue residue on the insert.

3. Using tweezers carefully remove the insert and place onto a clean section of tape.
4. Repeat step 3 at least 3 times.
5. Return the microcell array to the cell culture ware, applying it to a dry surface.

Microcell array clean and still not sticking to the cell culture ware

1. Insert the microcell array into the culture ware following steps 1 and 2 from the standard protocol.
2. Place the culture ware and array onto a hot plate at 60°C for 10 min.
3. Continue with the ethanol rinse from the step 3 of the standard protocols.