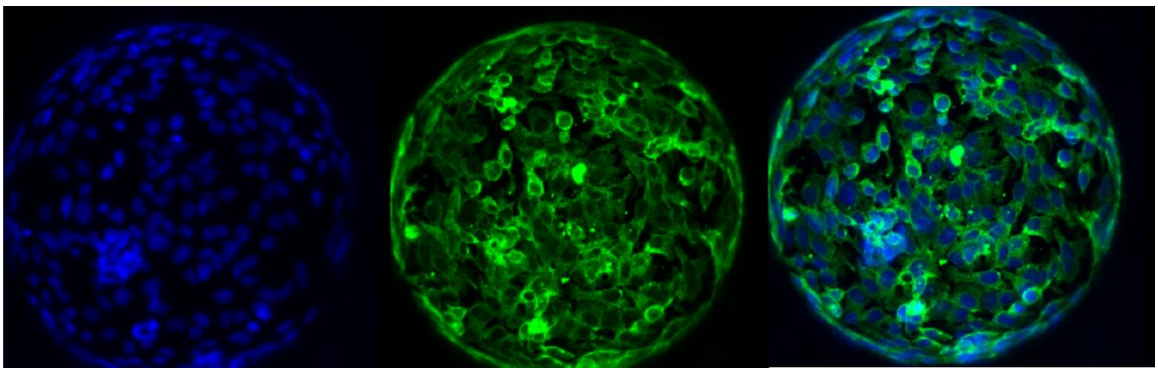
300MICRONS
Flexible 3D Cell Culture Solutions

Antibody staining in STATARRAYS© microcavity array plates



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Application Note: antibody staining in STATARRAYS© microcavity array plates MCA96-960 and -16.224

In the last decade, it has become apparent that three-dimensional cell culture approaches are indispensable to observe cellular organotypic functions in vitro. Among the methods to generate 3D-aggregates are those that rely on scaffolds whereas others are scaffold-free. Compared to other techniques, the microcavity array technology offers several advantages. Firstly, the size of the microcavities, and therefore the aggregate size, is highly reproducible. From single cell microcavity dimensions up to organoid dimensions, the technology is highly flexible so that different aggregate sizes can be realized (fig. 1)

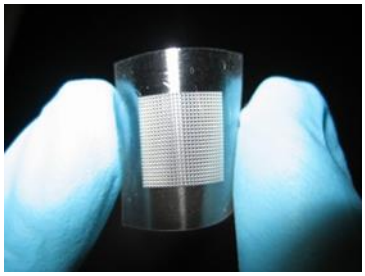

Fig. 1: DYNARRAYS© polymer film-based microcavity array.

Moreover, the number of microcavities for the format of choice can be adjusted to customer needs. Two examples of microcavity arrays in 96 well format are shown in fig. 2.

Fig. 2: Microtiter plate-based microcavity array platform STATARRAYS© with 169 or 10 microcavities per well, respectively.

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The microcavity array plates of 300MICRONS are innovative tools to generate adherent or non-adherent, uniform three-dimensional cellular aggregates. The following protocol describes a classical immunofluorescence staining of 3D-aggregates inside the microcavities.

Protocol:

1. Fixation:

- Remove the medium from the wells to be stained
- Wash the plates 2 x with PBS + calcium/magnesium (+/+)
- Pipette 100 µl of 4% paraformaldehyde solution into each well and incubate 15 min at room temperature
- Wash 2 x with PBS as above
- Dilute the (primary) antibody in CAS-Block (Thermo Scientific) so that the final staining solution amounts up to 100 µl
- Incubate in a humidified incubation chamber with a lid on top of the plate over night at room temperature
- In case an indirect immunostaining is performed: remove the primary antibody solution and wash as above
- Dilute the secondary antibody in CAS-block as appropriate and pipette 100 µl in each well to be stained
- Incubate for at least 1 h at room temperature under the conditions mentioned for the primary antibody
- After this, wash 3 x with PBS as above
- For microsopy, the wells can be left with PBS or put in a stabilization solution.

Ordering information

Please request a quote via the contact form of the company homepage of 300MICRONS GmbH (www.300microns.com).