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Innovating Epigenetic Solutions

3D micro pattern culture plates

Cat. No. **C18020001** (24 wells)
C18020002 (96 wells)
C18020003 (384 wells)

Version 1 I 10.15

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Product description

3D micro pattern culture plates are a novel material developed for the three-dimensional cell culture. These new culture plates allow to progress toward more physiological relevant assay approaches. Compared to 2D monolayer culture, 3D culture plates present an uneven surface honeycomb pattern in the bottom of culture plates that give rise to spheroid formation. Spheroids favor natural cell-cell interaction and more closely mimic the physiological in vivo environment.

ExoIP kits	Reference	Number of plates
3D micro pattern culture plate-24	C18020001-2	2 pc
3D micro pattern culture plate-24	C18020001-10	10 pc
3D micro pattern culture plate-96	C18020002-2	2 pc
3D micro pattern culture plate-96	C18020002-10	10 pc
3D micro pattern culture plate-384	C18020003-2	2 pc
3D micro pattern culture plate-384	C18020003-10	10 pc
3D micro pattern culture plate-384	C18020003-100	100 pc

Application

3D micro pattern culture plates can be used for the three-dimensional culture of a variety of cell types including tumor cells.

Precaution and storage

Store à 2-8°C, DO NOT FREEZE.

Required equipments

3D micro pattern culture plates have a particular pattern on the film that composes a bottom of the plate. Please carefully open the bag since the thin film at the bottom of the plate is fragile with microfabrication and can be damaged even with a light pressure of the finger tip on the plate bottom.

To avoid touching the bottom of the well, please pipette liquid in the well by touching the sidewall of the well and keeping the pipette tip 3-5 mm above the well bottom.

The capacity of the cell adhesion and spheroid formation might decrease when confluent cells are used.

Plates should be stored at the dark place to avoid a direct light exposure especially UV light. Plate is sterilized before shipping. For best results, please use micro pattern 3D culture plate before expiration date printed on the label.

Protocol for 3D spheroid culture

1. Material required

Equipment and reagents required to perform 3D cell culture are the same as to those used for conventional 2D cell culture:

- Sterile PBS
- Cell dissociation reagent (for example Trypsin/EDTA)
- Cell culture medium
- 3D micro pattern culture plates
- Incubator, pipette, sterile tips, ...

Note: All steps should be performed in the culture hood as for conventional 2D cell culture experiments.

2. Pre-incubation

It is highly recommended to **pre-incubate** 3D micro pattern culture plates before use. This step should be performed first and the plates can be incubated while you prepare suspension of cell line. Medium should be equilibrated to room temperature or 37°C before use.

3. Protocol to obtain spheroid

Preparation of your cell line:

1. Grow cells you want to evaluate in advance using conventional 2D cell culture technique.
2. Avoid using confluent cells. Cell attachment on the 3D micro pattern culture plate may take longer time if confluent cells are used.
3. Add half of the proper volume of culture medium*1 (approximately 500 µl/well) into the wells before use. Then centrifuge the 3D micro pattern cell culture plate at 300-500 x g for 1-3 min to remove the bubble from the well.
4. Incubate plate for 15-30 min at room temperature or 37°C in the culture hood.

Note: This pre-incubation step helps to avoid air bubble during culture.

5. Remove the culture medium of the maintained cells and then wash the cultured cells with PBS twice.

Cell suspension:

6. Dissociate cells from the plate by adding proper cell dissociation reagent onto cells (for example Trypsin/EDTA solution) using your standard volume.
7. When cells are dissociated, add the culture medium and then re-suspend the cells until you reach single cell dispersion.

Note: If cells are dispersed well, uniform spheroid will be formed.

8. Count the number of cells in the suspension.
9. Adjust the cell density to 4 x 104 cells /ml using the culture medium. You will use 1.5ml of this suspension to seed cells on the 3D micro pattern cell culture plates (6 x 104 cells /well).
   Note: The density of the cell can be adjusted to various densities depending on your experiment.

Cell culture on the 3D micro pattern culture plate:

10. Add 500 µl of the cell suspension you have prepared to the wells. Total volume will be 1ml/well.
11. Optional: It is highly recommended to covering the top of the plate with a plate sealing tape (for example, NUNC cat. #241205) to prevent medium evaporation.
12. Place the 3D micro pattern culture plate in the CO2 incubator at 37°C. Take care not to shake the plate for uniform spheroid formation.

Note: Cells start to form spheroid from day 1 to day 3.

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