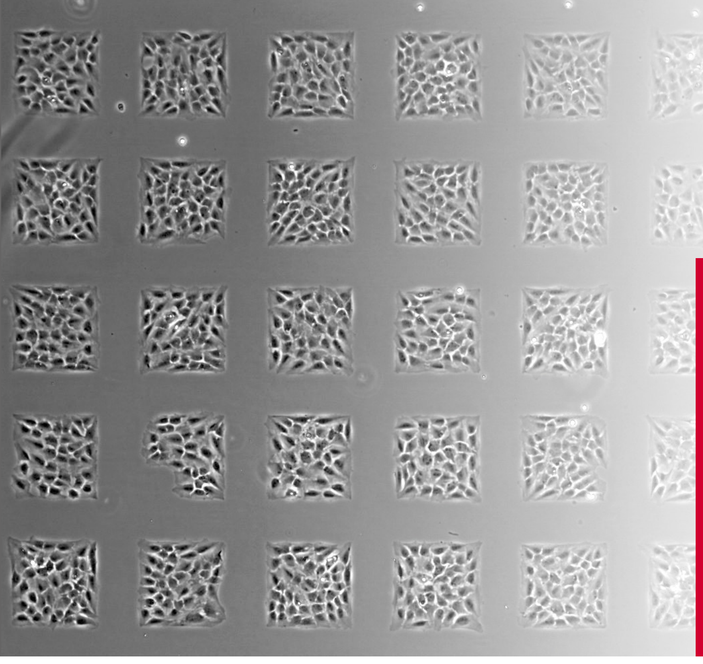


MetaVi Labs

cells in focus ibidi®

Controlled Cell Adhesion with ibidi Micropatterning

Long-Term Stable – Ready-to-Use – Variable Ligand and Pattern – Dry-Stable

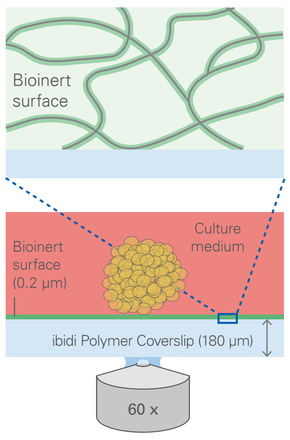
Bioinert: A Surface Without any Cell Adhesion

The Bioinert Principle

- Thin polyol hydrogel layer, covalently bound to the ibidi Polymer Coverslip #1.5

Features

- Biologically inert—no cell or protein adhesion
- Long-term stable
- Ready-to-use
- Highest optical quality for imaging



The Micropatterning Principle

Pattern Size

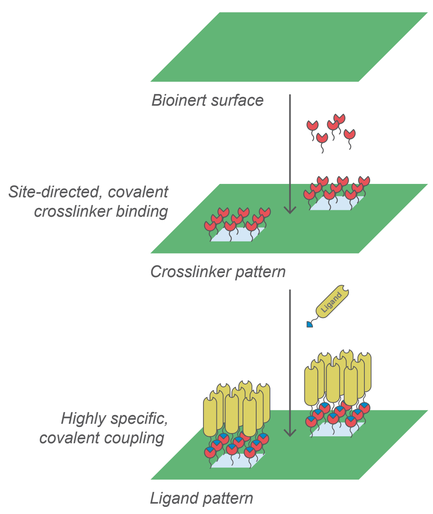
- > 3 µm; different sizes possible

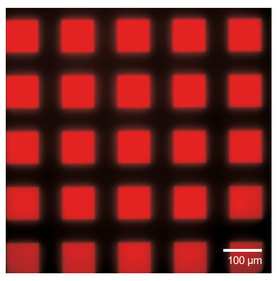
Functionalization

- Specific cell adhesion for days or even weeks
- Unspecific cell and molecule adhesion
- Custom-specific adhesion via click chemistry

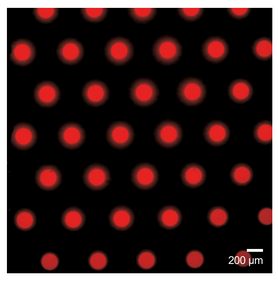
Optics

- Very low autofluorescence
- No visibility of µ-Patterns in brightfield
- Optional µ-Pattern fluorescence

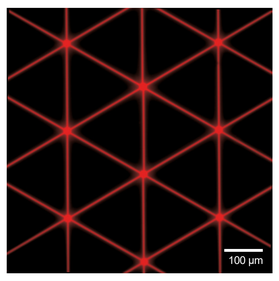




Square arrays



Circle arrays



Neuronal line grids

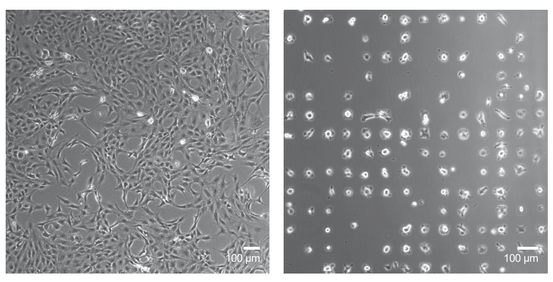
Single Cell Arrays and Spheroid Arrays

Fast Data Acquisition

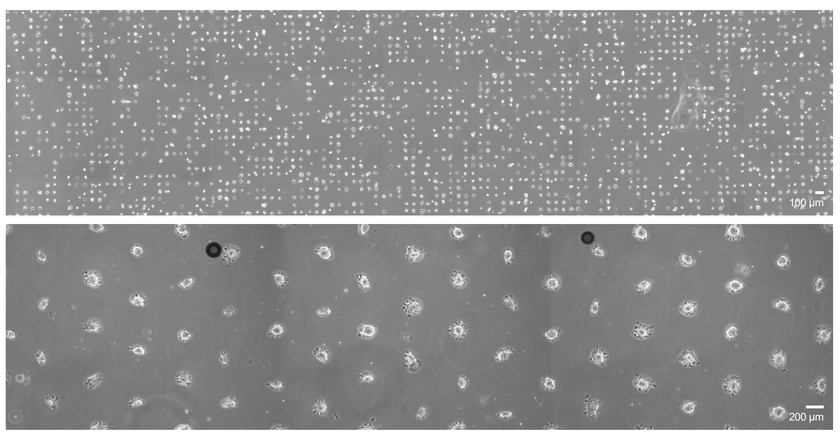
- Easy analysis of single and multi-cell arrays due to defined cell distribution

Versatility

- Different pattern sizes for the adhesion of different numbers of cells



Confluent cell layer vs. single cell array



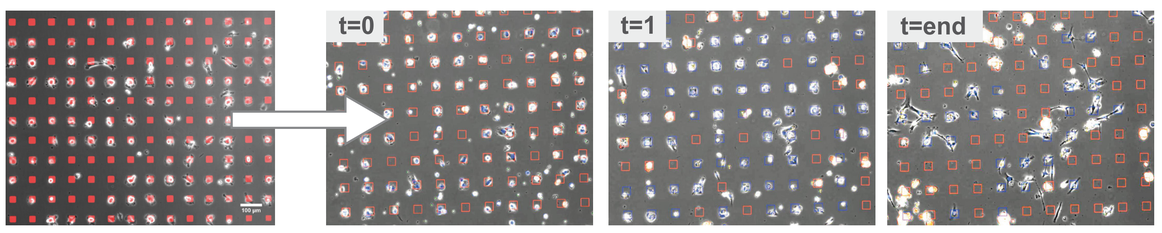
Cell arrays using micropatterning in the µ-Slide VI 0.4.

Top: Single cell array with renal cancer cells (RCC); 40 µm pattern.

Bottom: Spheroid array with fibroblasts (3T3); 200 µm pattern.

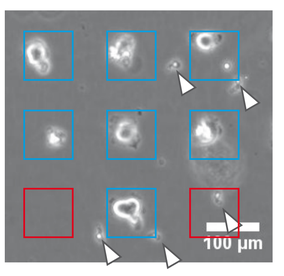
Machine Learning-Based Analysis of a T Cell Potency Assay

A micropatterned surface facilitates the AI-supported T cell-cancer cell interaction analysis on a single cell level. Advanced analysis allows for tracking of individual T cells over time.



Array information helps to identify cancer cell positions.

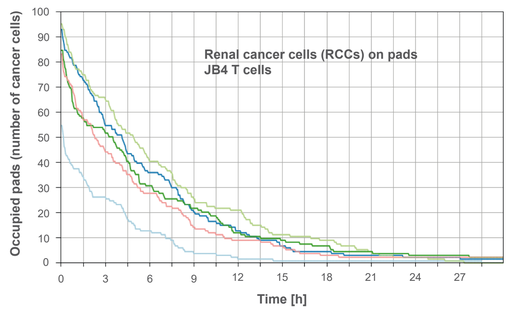
AI-supported image analysis records cancer cell depletion from single adhesive pads by antigen-specific T cells at predefined positions.



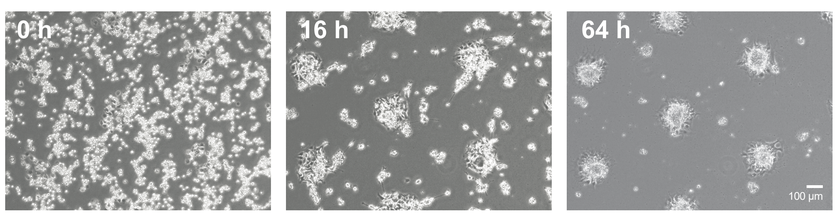
cancer cell on pad

no cancer cell on pad

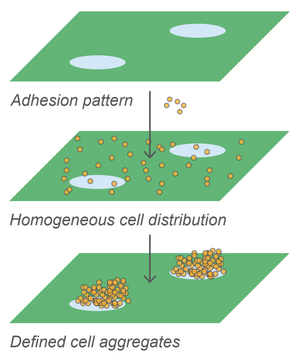
T-cell



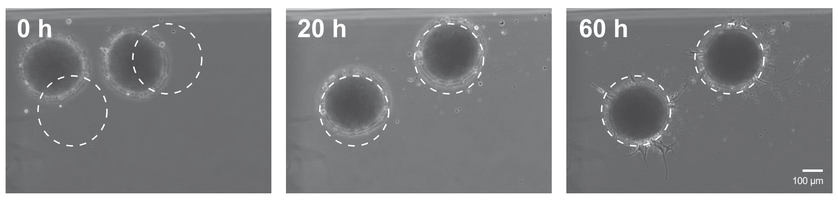
Spheroid Generation and Imaging



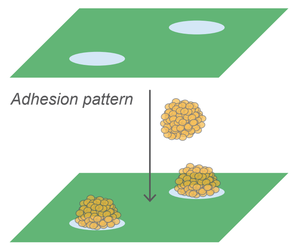
Spheroid generation: Defined 3T3 cell aggregates form on a µ-Pattern (200 µm) in the µ-Slide I 0.4 Luer.



Spheroid/Organoid Immobilization and Imaging

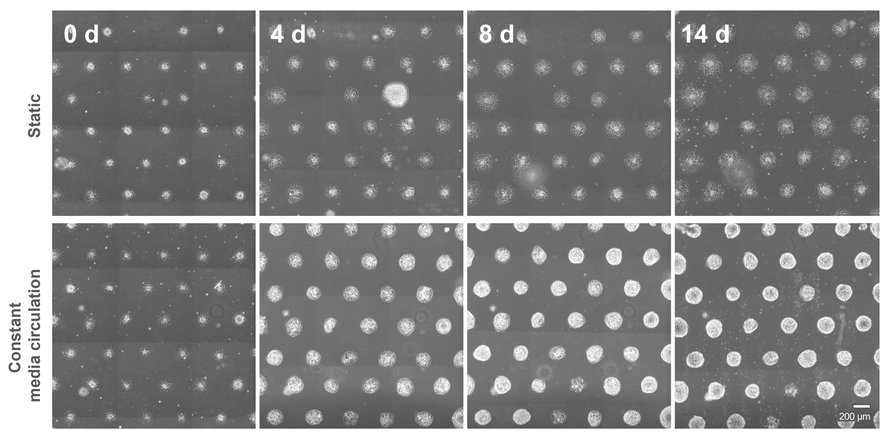


Spheroid immobilization: 3T3 cell aggregates were stably localized on a µ-Pattern (dashes, 200 µm) in the µ-Slide I 0.4 Luer. The same spheroids were imaged over days.



Spheroid Culture Under Constant Media Circulation

Micropatterned channel slides together with the ibidi Pump System can be used for cell feeding and testing drug effects.



Fibroblasts (3T3) under flow conditions at 3 dyn/cm² compared to the static control, cultured in the µ-Slide I 0.4 Luer for 14 days.

ibidi GmbH, Gräfelfing, Germany +49 (0) 89 520 4617 - 0 ibidi.com