

CYTOOchips™

Normalize. Analyze. Discover.



CELL ARCHITECTS

High Content Analysis. Precisely.

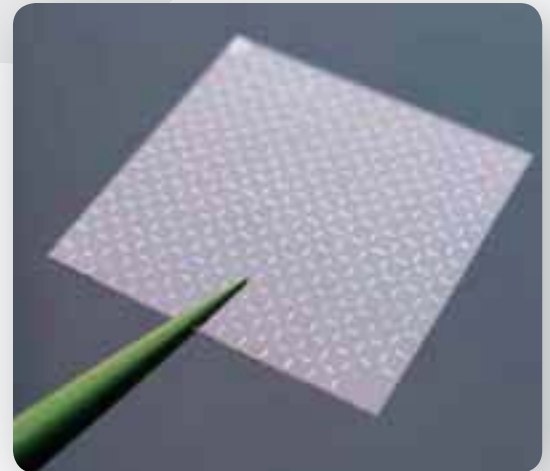
CYTOOchips

Quantitative cell analysis at your fingertips

Designed to normalize cells and reduce variability in cell-based assays, CYTOOchips are glass coverslips with thousands of adhesive micropatterns printed on a cytophobic surface.

When seeded on concave micropatterns, cells adopt the convex envelope stretching out over the non-adhesive surface. The geometric distribution of adhesive contacts between cells and substrate induces the reproducible polarization of the cell machinery. Cell position, cell shape, cell polarity and internal cell organization become normalized.

CYTOOchips pave the way to more reliable and sensitive quantitative cell analysis.



📌 Straightforward analysis, reliable results, faster discovery

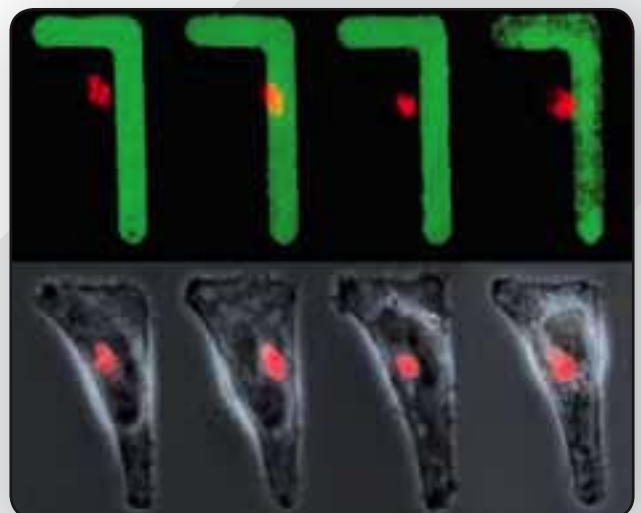
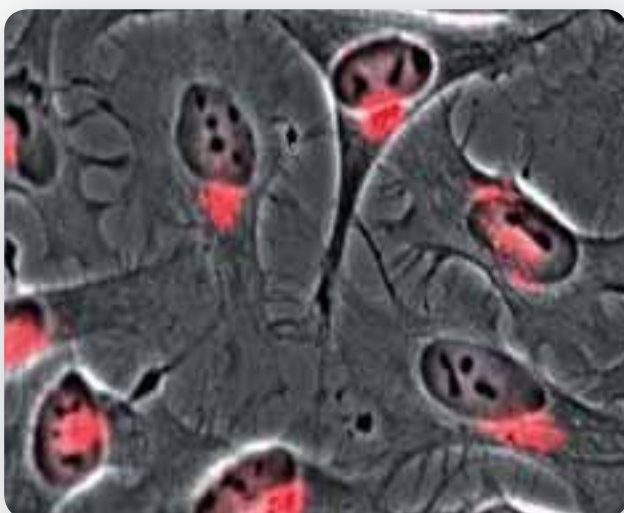
- Control the location of cell compartments and protein networks
- Achieve simple and rapid image analysis
- Carry out live time-lapse experiments on immobilized cells
- Create a Reference Cell™
- Improve assay reproducibility and increase sensitivity

📌 Unlimited range of cell biology applications...









- Cell shape and actin cytoskeleton
- Microtubule network
- Cell polarity and organelle positioning
- Cell division and mitotic spindle orientation
- Quantitative cell phenotyping
- Cell signaling
- Toxicology
- ..

📌 Illustration of how micropatterns decrease variability in Golgi morphology

In standard culture conditions (left), the shape and extent of the Golgi apparatus (in red) vary extensively with cell shape. On micropatterns (right), the shape and positioning of the Golgi apparatus is identical in all cells (Dimitrov, They, Bornens). Find other examples of applications at www.cytoo.com/cytoo_applications.php



Choose the right micropattern for your application

	Disc	Crossbow	H	Y
Fibronectin patterns				
Cells				
Application areas	Cell shape	Cell polarization	Cell division	Cell contractility, multipolar divisions
References		3 & 4*	1 & 2*	2 & 5*
<small>*see next page</small>				

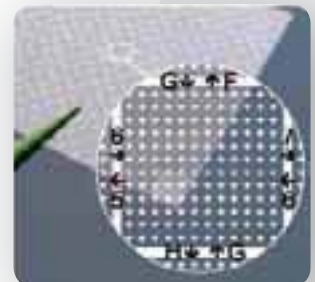
The optimal micropattern size for your cell type

Micropattern size	Small	Medium	Large
Cell area	700 μm^2	1100 μm^2	1600 μm^2
Cell line examples	HeLa MDCK MCF10A	RPE1 MDA-231 MCF7 NIH-3T3	Human mesenchymal stem cells, mouse embryonic fibroblasts

Not sure which to choose? Try our Starter's CYTOOchips with all 4 micropatterns in 3 sizes on each CYTOOchip (see below).

A GPS for your cells

In order to easily localize and return to the exact same cell over time, the micropattern layout is organized in a Grid Positioning System (GPS) comprising 144 micropattern blocks with grid coordinates printed on the underside of the chip. Depending on micropattern size, there are 81 or 144 copies of the same micropattern in each block.



The Starter's CYTOOchip

The Starter's CYTOOchip has been designed to allow you to identify which pattern works best for your specific application and cell type among 12 standard micropatterns (4 shapes in 3 sizes).

An added feature is a large area (column 0) homogeneously covered in fibronectin on which your cells will behave as if they were on a standard isotropic adhesive cell culture surface.



Selected references

1. *Nat Cell Biol* 7(10):947-53.
2. *Cell Motil Cytoskeleton* 63(6):341-55.
3. *PNAS USA* 103(52):19771-6.
4. *Nature* 447, 493-7.
5. *Genes Dev.* 22(16):2189-203.

www.cytoo.com/cytoo_publications.php

CYTOOchamber™ for Live Cell Imaging

CYTOOchambers are easy-to-use devices designed for time lapse experiments on CYTOOchips.

CYTOOchambers have a standard footprint and fit into all 35mm microscope stage adaptors.



Product specifications

Substrate	High quality low fluorescence glass		
Chip size	20 x 20 mm ²		
Glass thickness	170 µm		
Standard pattern types*	Disk, Crossbow, H, Y		
Standard pattern sizes*	Small	Medium	Large
Cell area	700 µm ²	1100 µm ²	1600 µm ²
Number of micropatterns per chip	20,736	20,736	11,664
Micropatterns per block	12 x 12	12 x 12	9 x 9
Pitch between micropatterns	100 µm	100 µm	130 µm
Micropattern line width	6 µm	6 µm	8 µm
Localization grid (GPS)	Yes		
Adhesion protein	Fibronectin**		
Packaging	Set of 6; vacuum sealed blister pack		

* Please contact us for custom micropattern types and sizes.

** Alternatively, we supply pre-activated CYTOOchips for adsorption of the protein of your choice. Please contact us.

Ordering information

Cat. No.	Product	Micropattern	Size	Protein	Sold by
10-900	CYTOOchip™ 20x20 Starter FN	Multi	Multi	Fibronectin	Set of 6
10-101	CYTOOchip™ 20x20 DC-S-FN	Disc	Small	Fibronectin	Set of 6
10-102	CYTOOchip™ 20x20 DC-M-FN	Disc	Medium	Fibronectin	Set of 6
10-103	CYTOOchip™ 20x20 DC-L-FN	Disc	Large	Fibronectin	Set of 6
10-104	CYTOOchip™ 20x20 CW-S-FN	Crossbow	Small	Fibronectin	Set of 6
10-105	CYTOOchip™ 20x20 CW-M-FN	Crossbow	Medium	Fibronectin	Set of 6
10-106	CYTOOchip™ 20x20 CW-L-FN	Crossbow	Large	Fibronectin	Set of 6
10-107	CYTOOchip™ 20x20 H-S-FN	H	Small	Fibronectin	Set of 6
10-108	CYTOOchip™ 20x20 H-M-FN	H	Medium	Fibronectin	Set of 6
10-109	CYTOOchip™ 20x20 H-L-FN	H	Large	Fibronectin	Set of 6
10-110	CYTOOchip™ 20x20 Y-S-FN	Y	Small	Fibronectin	Set of 6
10-111	CYTOOchip™ 20x20 Y-M-FN	Y	Medium	Fibronectin	Set of 6
10-112	CYTOOchip™ 20x20 Y-L-FN	Y	Large	Fibronectin	Set of 6
10-950	CYTOOchip™ 20x20 Custom FN	Custom	Custom	Fibronectin	Set of 6
30-010	CYTOOchamber™ 35 cm	Compatible with the CYTOOchip™ 20x20 mm ²			

To order or for inquiries please email sales@cytoo.com or connect to our on-line store: www.cytoo.com/store



CELL ARCHITECTS

CYTOO S.A.
7, parvis Louis Néel
BHT 52, BP50
38040 Grenoble cedex 9 - FRANCE
Tel. +33(0) 438 88 47 05

CYTOO, Inc.,
161 Worcester Road,
Suite 303, Framingham,
Massachusetts 01760, USA
Tel. +1 508.650.8878

www.cytoo.com - info@cytoo.com

© 2009 CYTOO S.A. CYTOO™, CYTOOchips™ and CYTOOchamber™ are trademarks of CYTOO S.A.