



PHYSIOLOGICAL  
CELL-BASED ASSAYS  
FOR HCS

CY↑OO

CY↑OO chips™

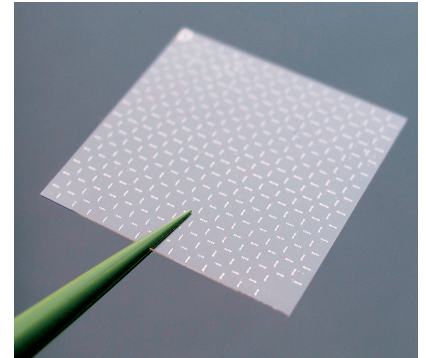
*Normalize. Analyze. Discover.*



# CYTOO chips™

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 micropatterns, cells attach and stretch 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.



CYTOO's technology paves 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 (*actin polymerization, microtubule dynamics, actin-myosin contractility...*)
- Cell cycle (*cell division, mitotic spindle orientation, ...*)
- Cell signaling events (*protein trafficking and translocation, signal transduction, ...*)
- Cell polarity and organelle positioning
- Apoptosis
- Stem cell differentiation,
- EMT
- Cell migration
- Inflammation

## Example: Using micropatterns to easily quantify drug effect

In conventional culture vessels (top), the effect of 5  $\mu$ M Blebbistatin is barely visible whereas it can be easily quantified on L-shaped micropatterns (bottom). Cf. Figure 1.

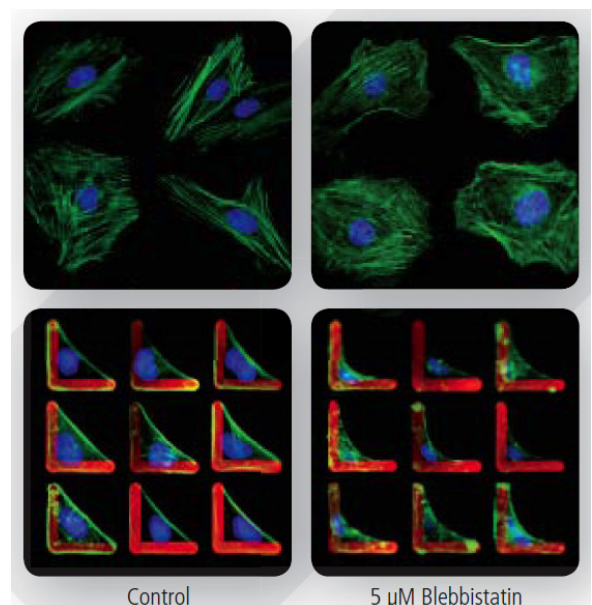


Figure 1 : Comparison between pattern and non pattern cell under blebbistatin treatment

## A whole range of micropatterns for diverse applications

	Disc	Crossbow	H	Y	L
<b>Micropatterns</b>					
<b>Cells</b>					
<b>Description</b>	No polarization	Strong polarization	Symmetric organization	Triaxial symmetry organization	Single free edge organization
<b>Noteworthy Applications</b>	Cell arraying Ciliogenesis	Cell polarity Organelle positioning Receptor internalization	Cell division Cell-cell junction	Multipolar division	Cytoskeleton rearrangement & Spindle orientation

## A non exhaustive list of cell types already published on micropatterns

- Epithelial cells (*HeLa*, *RPE-1*, *CHO*, *MDCK*, *BSC*, *MCF10A*)
- Fibroblasts (*murine NIH-3T3*, *BHK*)
- Adenocarcinoma cell lines (*MDA-231*, *A549*)
- Hepatic cell lines (*HepG2*)
- Primary cells (*Rat astrocytes*, *Rat ventricular myocytes*, *myoblasts*)
- Neurons and neuron progenitors (*SH-SY5Y*; *hippocampal* and *cortical neurons*)
- Stem Cells (*human embryonic stem cell*, *iPS*, *human mesenchymal stem cells*)

## 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 4 shapes (disc, crossbow, H, Y) and 3 different sizes (S - M - L). Cf figure 2.

An added feature is a large area (column 1) homogeneously covered in fibronectin on which your cells will behave as if they were on a standard isotropic adhesive cell culture surface.

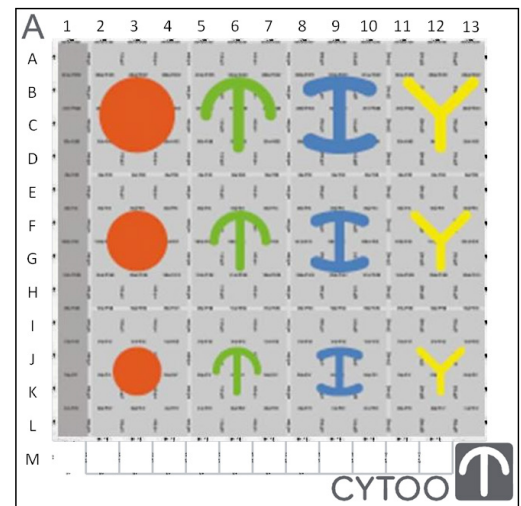


figure 2: Starter chip layout

## CYTOOchambers™ for Live Cell Imaging

CYTOOchambers are magnetic devices enabling high resolution life cell imaging on our CYTOOchips.

Available in 1 or 4-well formats, CYTOOchambers have a 35 mm diameter footprint and fit into standard microscope stage adaptors.



## Product specifications

Substrate	High quality low fluorescence glass		
Chip size	19.5 x 19.5 mm		
Glass thickness	170 µm		
Micropattern geometries	Disc, Crossbow, H, Y, L		
Standard pattern sizes	Small	Medium	Large
Cell area	700 µm <sup>2</sup>	1100 µm <sup>2</sup>	1600 µm <sup>2</sup>
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	8 µm	8 µm
Adhesion protein	Activated*		
Packaging	By set of 18; in a sealed blister pack		
Working temperature range	+4°C to +37°C. Do not freeze.		
Shelf life	6 months after date of production (at +4°C)		
Other Information	For single use only		

\* ready-to-coat product for adsorption of the protein of your choice (Collagen, Laminin, Poly-Lysine, Matrigel®, specific antibodies etc.). Protein may be fluorescently labeled. Contact us for recommended coating protocols and specific needs.

## Ordering information

Cat. No.	Product Name	Micropattern	Size	Min. of order
10-900-00	CYTOOchips Starter-A	Multi	Small (700µm <sup>2</sup> ) / Medium (1100µm <sup>2</sup> ) / Large (1600µm <sup>2</sup> )	Set of 18
10-001-00	CYTOOchips DC-S-A	Disc	Small (700 µm <sup>2</sup> )	Set of 18
10-002-00	CYTOOchips DC-M-A	Disc	Medium (1100 µm <sup>2</sup> )	Set of 18
10-003-00	CYTOOchips DC-L-A	Disc	Large (1600 µm <sup>2</sup> )	Set of 18
10-004-00	CYTOOchips CW-S-A	Crossbow	Small (700 µm <sup>2</sup> )	Set of 18
10-005-00	CYTOOchips CW-M-A	Crossbow	Medium (1100 µm <sup>2</sup> )	Set of 18
10-006-00	CYTOOchips CW-L-A	Crossbow	Large (1600 µm <sup>2</sup> )	Set of 18
10-007-00	CYTOOchips H-S-A	H	Small (700 µm <sup>2</sup> )	Set of 18
10-008-00	CYTOOchips H-M-A	H	Medium (1100 µm <sup>2</sup> )	Set of 18
10-009-00	CYTOOchips H-L-A	H	Large (1600 µm <sup>2</sup> )	Set of 18
10-010-00	CYTOOchips Y-S-A	Y	Small (700 µm <sup>2</sup> )	Set of 18
10-011-00	CYTOOchips Y-M-A	Y	Medium (1100 µm <sup>2</sup> )	Set of 18
10-012-00	CYTOOchips Y-L-A	Y	Large (1600 µm <sup>2</sup> )	Set of 18
10-013-00	CYTOOchips L-S-A	L	Small (700 µm <sup>2</sup> )	Set of 18
10-014-00	CYTOOchips L-M-A	L	Medium (1100 µm <sup>2</sup> )	Set of 18
10-015-00	CYTOOchips L-L-A	L	Large (1600 µm <sup>2</sup> )	Set of 18
10-950-00	CYTOOchips Custom-A	Custom	Custom	Set of 18
30-010	CYTOOchamber 1 well	Max. imaging area 16.5 x 16.5 mm		1
30-011	CYTOOchamber 4 wells	Max. imaging area 7.5 x 7.5 mm per well		1

For inquiries please contact us at [www.cytoo.com/contact-us](http://www.cytoo.com/contact-us)

Adhesive micropattern products provided by CYTOO are covered by European and US Patents and patents pending as well as their foreign equivalents. These products may be covered by one or more Limited Use Label Licenses. The purchase of this product conveys to the buyer the non-transferable right to use the product in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer this product to a third party or otherwise use this product for Commercial Purposes. By the use of these products, you accept the terms and conditions of all applicable Limited Use Label Licenses. For research use only. Not intended for any animal or human therapeutic or diagnostic use.

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

**CYTOO**  
www.cytoo.com  
info@cytoo.com

© 2015 CYTOO S.A.