

The ibidi product family is comprised of a variety of μ -Slides and μ -Dishes, which have all been designed for high-end microscopic analysis of fixed or living cells. The high optical quality of the material is similar to that of glass, so you can perform all kinds of fluorescence experiments with uncompromised resolution and choice of wavelength.

The μ -Slide 8 Well^{high} μ -Pattern^{RGD} Test Patterns 1 is an 8 well chamber slide in which cells can be cultivated and, subsequently, investigated with microscopical methods. This open μ -Slide (chambered coverslip) is intended for cell culture, immunofluorescence, live cell imaging, and high-end microscopy.

The μ -Patterning technology enables spatially defined cell adhesion for various 2D and 3D cell culture applications. The cell-adhesive patterns are irreversibly printed on the non-adhesive Bioinert surface of the ibidi Polymer Coverslip, allowing for precisely controlled cell adhesion. The μ -Patterns are dry-stable, sterile, and ready to use. Bioinert itself is a thin hydrogel layer that is covalently attached to the ibidi Polymer Coverslip No. 1.5. In contrast to standard ultra-low attachment (ULA) coatings, Bioinert is completely non-adherent and allows no binding of any biomolecule, even in long-term experiments.

Material

ibidi μ -Slides, μ -Dishes, and μ -Plates are made of a polymer that has the highest optical quality. The polymer coverslip on the bottom exhibits extremely low birefringence and autofluorescence, similar to that of glass. Also, it is not possible to detach the bottom from the upper part. The μ -Slides, μ -Dishes, and μ -Plates are intended for one-time use and are not autoclavable, since they are only temperature-stable up to 80°C/175°F. Please note that gas exchange between the medium and the incubator's atmosphere occurs partially through the polymer coverslip, which should not be covered.

Optical Properties ibidi Polymer Coverslip

Refractive index n_D (589 nm)	1.52
Abbe number	56
Thickness	No. 1.5 (180 μ m)
Material	Polymer coverslip

Please note! The ibidi Polymer Coverslip is compatible with certain types of immersion oil only. A list of suitable oils can be found on page 5.

Shipping and Storage

The μ -Slides, μ -Dishes and μ -Plates are sterilized and welded in a gas-permeable packaging. The shelf life under proper storage conditions (in a dry place, no direct sunlight) is listed in the following table.

Conditions

Shipping conditions	Ambient
Storage conditions	RT (15-25°C)

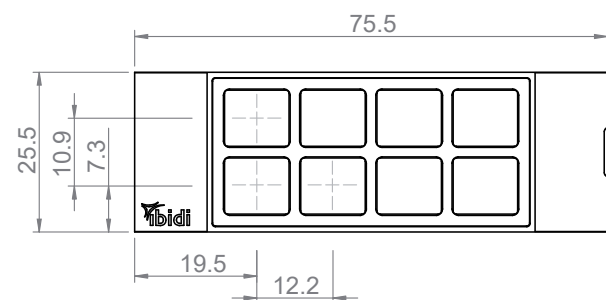
Shelf Life

μ -Patterning	36 months
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Store the μ -Patterning products in a dry place (relative humidity <50%).

Geometry of the μ -Slide 8 Well^{high}

The μ -Slide 8 Well^{high} provides a standard slide format according to ISO 8037/1.

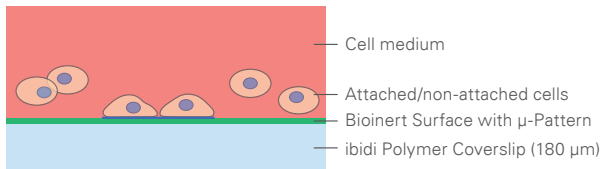


Geometry

Outer dimensions in mm (w × l)	25.5 × 75.5
Number of wells	8
Dimensions of wells in mm (w × l × h)	9.4 × 10.7 × 9.3
Volume per well	300 μ l
Height with/without lid	10.8/9.5 mm
Growth area per well	1.0 cm ²
Coating area per well	2.2 cm ²
Bottom	ibidi Polymer Coverslip

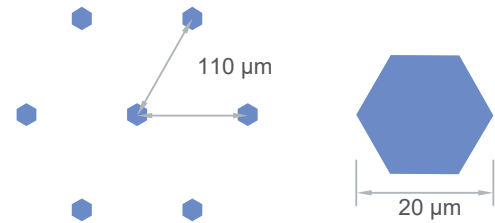
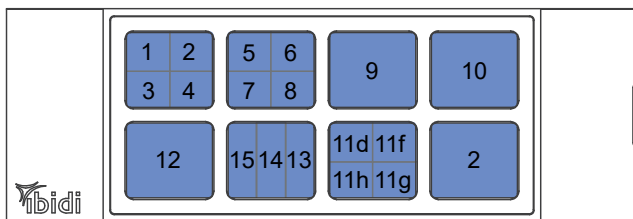
Geometry of the μ -Pattern

The cell-adhesive patterns are irreversibly printed on the non-adhesive Bioinert surface of the ibidi Polymer Coverslip, allowing for precisely controlled cell adhesion. The patterns are not visible under the microscope.

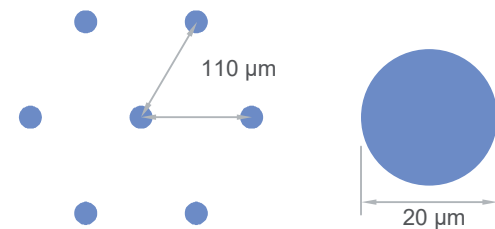


The μ -patterned surface presents the covalently bound tripeptide Arg-Gly-Asp (Arginine, Glycine, Aspartate - RGD). This amino acid sequence from the extracellular matrix protein fibronectin mediates cell attachment in many cell types.

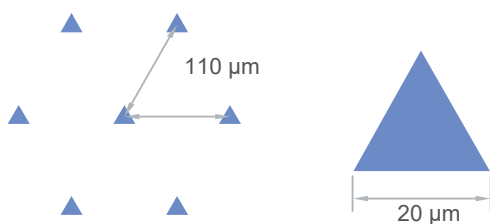
The μ -Slide 8 Well^{high} μ -Pattern^{RGD} Test Patterns 1 is a 15 pattern layout with the following geometry:



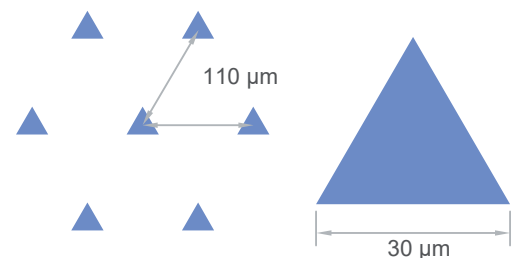
Pattern No. 3



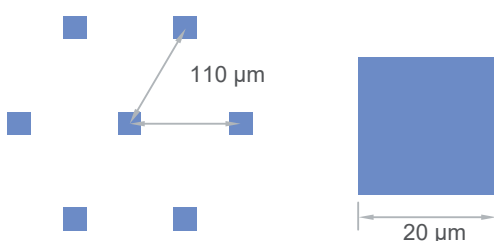
Pattern No. 4



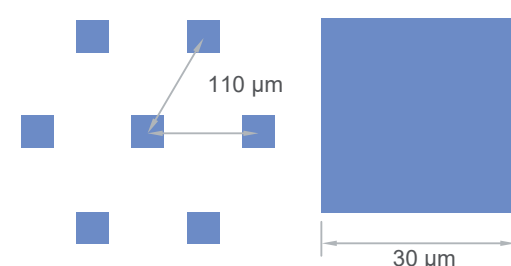
Pattern No. 1



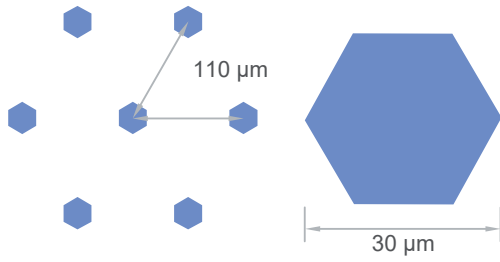
Pattern No. 5



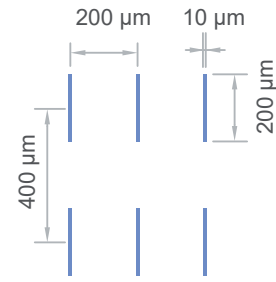
Pattern No. 2



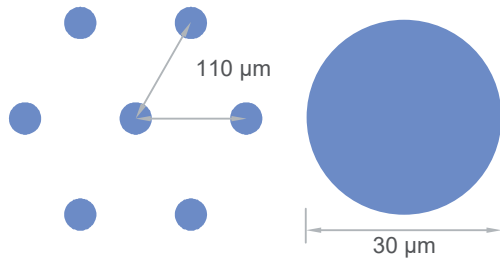
Pattern No. 6



Pattern No. 7



Pattern No. 11



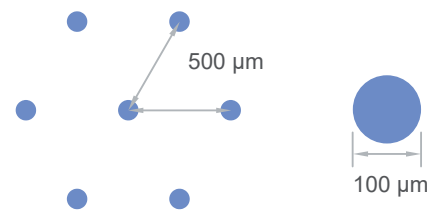
Pattern No. 8



Pattern No. 11d



Pattern No. 11f



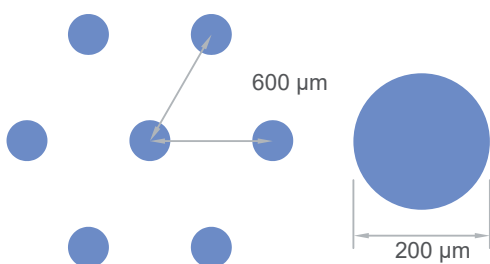
Pattern No. 9



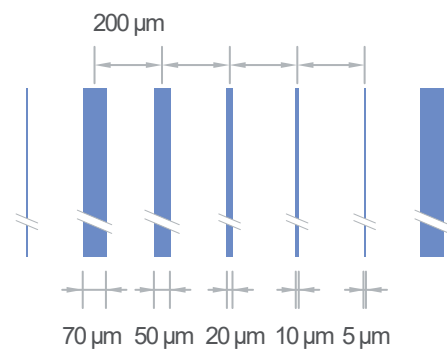
Pattern No. 11g



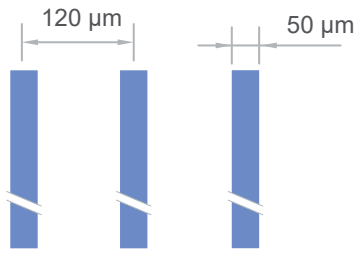
Pattern No. 11h



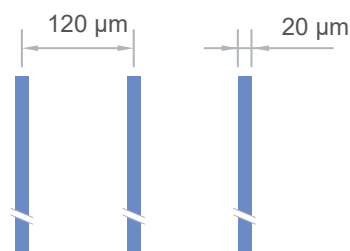
Pattern No. 10



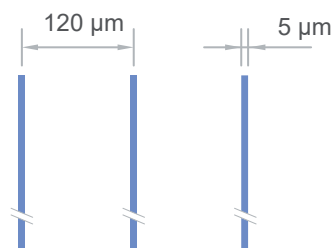
Pattern No. 12



Pattern No. 13



Pattern No. 14



Pattern No. 15

Characteristics of the Bioinert Surface

Characteristics	
Bioinert surface thickness	200 nm
Bioinert surface material	Polyol-based hydrogel
Protein coatings	Not possible

The Bioinert Surface

The Bioinert surface allows no adsorption, coating, or binding of proteins, antibodies, enzymes, and other biomolecules. Therefore, the Bioinert technology provides a stable passivation in cell-based assays for several days or even weeks. The hydrophilic Bioinert surface hinders any

protein attachment, thus inhibiting subsequent cell attachment. The Bioinert surface is not biodegradable by cells allowing long-term assays with suspension cells and cell aggregates. Unlike with the ibiTreat and Uncoated surfaces, a coating is not possible.

Seeding Cells

Follow the steps below as a guideline for a general cell application protocol. Optimize the cell concentration for your needs in subsequent experiments.

- Trypsinize and count cells as usual. Dilute the cell suspension to the desired concentration. Depending on your cell type, we recommend a $5-11 \times 10^4$ cells/ml suspension.
- Apply 300 μ l cell suspension into each well of the μ -Slide. Avoid shaking as this will result in inhomogeneous distribution of the cells.
- Cover with the supplied lid and incubate at 37°C and 5% CO₂ as usual.
- Await cell attachment.
- Optionally, wash with cell-free medium.

Undemanding cells can be left in their seeding medium for up to three days. However, best results might be achieved when the medium is changed every 1–2 days. Carefully aspirate the old medium and replace it by 300 μ l fresh medium per well. For sensitive cells, exchanging 50% of the old cell culture medium exchange is recommended.

Tip:

Make sure to avoid uneven incubator shelves and microscope stages. Single cells or cell clusters might roll on one side over time. Please also avoid evaporation and temperature changes. Both will lead to convective flow.

Chemical Compatibility

The following table provides some basic information on the chemical and solvent compatibility:

Chemical / Solvent	Compatibility
Methanol	yes
Ethanol	yes
Formaldehyde	yes
Acetone	yes, without lid
Mineral oil	no
Silicone oil	yes
Immersion oil	See Immersion Oil on page 5.

Microscopy

To analyze your cells, no special preparations are necessary. Cells can be directly observed live or fixed, preferably on an inverted microscope. The bottom cannot be removed. For optimal results in fluorescence microscopy and storage of fixed and stained samples, ibidi provides a mounting medium (50001) optimized for μ-Dishes, μ-Slides, and μ-Plates.

Immersion Oil

When using oil immersion objectives with the ibidi Polymer Coverslip, use only the immersion oils specified in the table below. The use of any non-recommended oil could damage the ibidi Polymer Coverslip. The resulting leakage may harm objectives and microscope components. All immersion oils that are not listed in the table below should be considered as non-compatible.

Company	Product	Ordering No.	Lot Number	Test Date
ibidi	ibidi Immersion Oil	50101	16-12-27	01/2017
Cargille	Type A	16482	100592	01/2017
Cargille	Type HF	16245	92192	01/2017
Carl Roth	Immersion oil	X899.1	414220338	01/2017
Leica	Immersion Liquid	11513859	n.a.	03/2011
Nikon	Immersion Oil F2 30cc	MXA22192	n.a.	01/2020
Nikon	Silicone Immersion Oil 30cc	MXA22179	20191101	01/2020
Olympus	Silicone Immersion Oil	SIL300CS-30CC	N4190800	01/2017
Zeiss	Immersionol 518 F	444960	160706	01/2017
Zeiss	Immersionol W 2010	444969	101122	04/2012

Ordering Information

The μ -Patterning family is available in different slide formats.



Cat. No.	Description	Pcs./Box
83601	μ-Slide VI^{0.4} μ-Pattern^{RGD, sqr20, pit110, hex} : #1.5 polymer coverslip, micropatterned surface with RGD motif, 20 μ m squares, 110 μ m pitch, hexagonal layout, surface passivation with Bioinert, sterilized	10
83601-S	μ-Slide VI^{0.4} μ-Pattern^{RGD, sqr20, pit110, hex} Trial Pack : #1.5 polymer coverslip, micropatterned surface with RGD motif, 20 μ m squares, 110 μ m pitch, hexagonal layout, surface passivation with Bioinert, sterilized	2
83602	μ-Slide VI^{0.4} μ-Pattern^{RGD, cir100, pit500, hex} : #1.5 polymer coverslip, micropatterned surface with RGD motif, 100 μ m circles, 500 μ m pitch, hexagonal layout, surface passivation with Bioinert, sterilized	10
83602-S	μ-Slide VI^{0.4} μ-Pattern^{RGD, cir100, pit500, hex} Trial Pack : #1.5 polymer coverslip, micropatterned surface with RGD motif, 100 μ m circles, 500 μ m pitch, hexagonal layout, surface passivation with Bioinert, sterilized	2
83651	μ-Slide VI^{0.4} μ-Pattern^{RGD} Test Patterns 1 : #1.5 polymer coverslip, micropatterned surface with RGD motif, 15 patterns, surface passivation with Bioinert, sterilized	2



Cat. No.	Description	Pcs./Box
83801	μ-Slide 8 Well^{high} μ-Pattern^{RGD, sqr20, pit110, hex} : #1.5 polymer coverslip, micropatterned surface with RGD motif, 20 μ m squares, 110 μ m pitch, hexagonal layout, surface passivation with Bioinert, sterilized	10
83801-S	μ-Slide 8 Well^{high} μ-Pattern^{RGD, sqr20, pit110, hex} Trial Pack : #1.5 polymer coverslip, micropatterned surface with RGD motif, 20 μ m squares, 110 μ m pitch, hexagonal layout, surface passivation with Bioinert, sterilized	2
83802	μ-Slide 8 Well^{high} μ-Pattern^{RGD, cir100, pit500, hex} : #1.5 polymer coverslip, micropatterned surface with RGD motif, 100 μ m circles, 500 μ m pitch, hexagonal layout, surface passivation with Bioinert, sterilized	10
83802-S	μ-Slide 8 Well^{high} μ-Pattern^{RGD, cir100, pit500, hex} Trial Pack : #1.5 polymer coverslip, micropatterned surface with RGD motif, 100 μ m circles, 500 μ m pitch, hexagonal layout, surface passivation with Bioinert, sterilized	2
83851	μ-Slide 8 Well^{high} μ-Pattern^{RGD} Test Patterns 1 : #1.5 polymer coverslip, micropatterned surface with RGD motif, 15 patterns, surface passivation with Bioinert, sterilized	2

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Further information can be found at ibidi.com. For questions and suggestions please contact us by e-mail info@ibidi.de or by telephone +49 (0)89/520 4617 0.

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