

The ibidi product family comprises a variety of different shapes of μ-Slides and μ-Dishes which all have 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-Dish 35mm, high allows you to perform high resolution microscopy in a 35 mm Petri-dish with 12 mm walls. The standard height allows convenient liquid handling. The lid can be closed to hinder evaporation during long term experiments.

Material

ibidi μ-Slides, μ-Dishes, and μ-Plates consist of a plastic with highest optical quality. The bottom material exhibits extremely low birefringence and autofluorescence, both similar to that of glass. It is not possible to detach the bottom from the upper part. The μ-Slides, μ-Dishes, and μ-Plates are not autoclavable since they are temperature stable up to 80°C/175°F only. Please note that gas exchange between the medium and incubator's atmosphere occurs partially through the plastic bottom which should not be covered.

Optical Properties ibidi Standard Bottom

Refractive index n_D (589 nm)	1.52
Abbe number	56
Thickness	No. 1.5 (180 μm)
Material	microscopy plastic

Geometry

Geometry of the μ-Dish 35mm, high

Diameter dish	35 mm
Volume	2000 μl
Growth area	3.5 cm ²
Diameter growth area	21 mm
Coating area using 400 μl	4.2 cm ²
Height with / without lid	14 mm / 12 mm
Bottom matches coverslip	No. 1.5

Surface and coating

The μ-Dish is available with ibiTreat and uncoated surface. The ibiTreat surface is a physical treatment and optimized for adhesion of most cell types. Many cell lines as well as primary cells were tested for good cell growth. Uncoated is a very hydrophobic surface and allows no direct

cell growth. It is suitable for specific coatings or suspension cells.

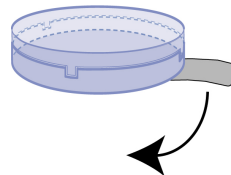
The uncoated μ-Dish must be coated to promote cell adhesion. If you like to establish a particular coating for your demands we recommend to test your coating procedure on uncoated and ibiTreat μ-Dishes, since we have observed that some biomolecules adhere differently to hydrophobic or hydrophilic plastic surfaces.

- Prepare your coating solution according to the manufacturer's specifications or reference. Prepare your μ-Dish, ibiTreat or uncoated. Adjust the concentration to a coating area of 4.2 cm² and 400 μl.
- Apply 400 μl into the growth area. Make sure that the entire bottom is covered with liquid easily tilting or shaking the μ-Dish. Put on the lid and leave at room temperature for at least 30 minutes.
- Aspirate the solution and wash. Optionally, let dry at room temperature.

The μ-Dish 35mm, high is also available with an elastically supported surface (ESS) and a glass bottom surface. Please refer to the instructions for detailed information.

Protection film

Remove the protection film before usage!



The bottom of the μ-Dish is covered with a film to protect the optical quality of the plastic surface. Please pull off the protection film before usage!

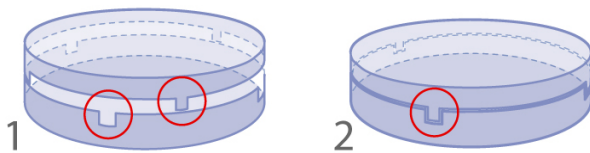
The protection film of all μ-Dishes is color-coded:

Color	Surface	Variation
Blue	ibiTreat	plain
Red	ibiTreat	with Grid-500
Yellow	ibiTreat	with Culture-Insert
White	uncoated	plain
Black	uncoated	with Grid-500
Green	uncoated	with Culture-Insert

Tip:

You can stack the μ-Dishes to save space in your incubator. This will not affect cell growth. We recommend making batches with up to 6 μ-Dishes, due to stability reasons. Placing the μ-Dishes into larger Petri dishes simplifies transport and prevents evaporation, heat loss, and contamination when the incubator is opened.

Using the lid



1. open position, easy opening
2. close position, for long term studies, minimal evaporation

Preparation for cell microscopy

To analyze your cells no special preparations are necessary. Cells can be observed live or fixed directly in the μ-Dish preferably on an inverted microscope. You can use any fixative of your choice. The μ-Dish material is compatible with a variety of chemicals, e.g. Acetone or Methanol. Further specifications can be found at www.ibidi.com. Due to the thin bottom of only 180 μm, high resolution microscopy is possible.

For optimal results in fluorescence microscopy and storage of stained probes ibidi provides a mounting medium optimized for μ-Dishes and μ-Slides.

Seeding cells

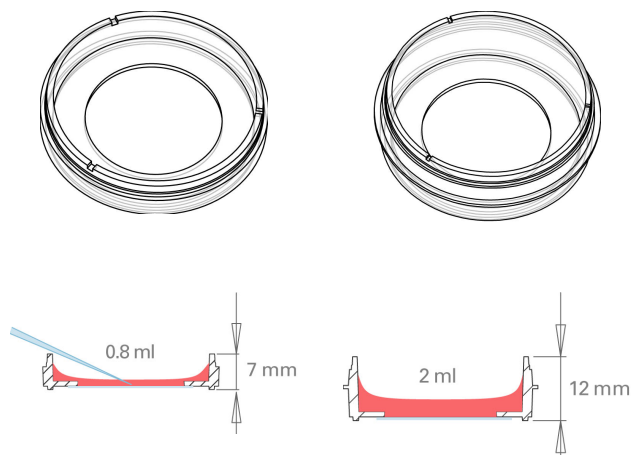
- Trypsinize and count cells as usual. Dilute the cell suspension to the desired concentration. Depending on your cell type, application of a $4-9 \times 10^4$ cells/ml suspension should result in a confluent layer within 2-3 days.
- Apply 400 μl cell suspension into the inner well of the μ-Dish. Avoid shaking as this will result in inhomogeneous distribution of the cells. After cell attachment add additionally 1.6 ml of pure medium to ensure optimal grow conditions.
- Cover the μ-Dish with the supplied lid. Incubate at 37°C and 5% CO₂ as usual.

Undemanding cells can be left in their seeding medium for several days and grow to confluence there. However, best results are achieved when the medium is changed every 2-3 days. Carefully aspirate the old medium and replace it by up to 2 ml fresh medium.

μ-Dish 35mm selection guide

μ-Dish 35mm, high

μ-Dish 35mm, low	μ-Dish 35mm, high
Low walls (7 mm) for large access to the cells. Designed for micromanipulation and microinjection.	High walls (12 mm) for all standard applications. Also available with glass bottom, relocation grid, and elastic surface (ESS).



Minimizing evaporation

Using the μ-Dish with a closed lid, the evaporation in an incubator system with 37°C and 95 % humidity is around 1 % per day. Using the μ-Dish with a closed lid in a 37°C heating system with low humidity (between 20 % and 40 %), the evaporation is around 10 % per day. For reducing the evaporation down to 1 % per day in all systems, we recommend sealing the lid with ibidi Anti-Evaporation Oil (50051).

Immersion Oil

When using oil immersion objectives, only the immersion oils specified in the table may be used. The use of different oil can lead to damages of the plastic material and the objective.


Company	Product	Ordering number
Zeiss	Immersol 518 F	(Zeiss) 444960
Zeiss	Immersol W 2010	(Zeiss) 444969
Leica	Immersion liquid	(Leica) 11513859

Selected References

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- J. Renaud, G. Kerjan, I. Sumita, Y. Zagar, V. Georget, D. Kim, C. Fouquet, K. Suda, M. Sanbo, F. Suto, S. L. Ackerman, K. J. Mitchell, H. Fujisawa, and A. Chedotal. Plexin-A2 and its ligand, Sema6A, control nucleus-centrosome coupling in migrating granule cells. *Nature Neuroscience*, 2008. doi: 10.1038/nn2064.
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- C. Westendorf, A. Schmidt, I. Coin, J. Furkert, I. Ridelis, D. Zampatis, C. Rutz, B. Wiesner, W. Rosenthal, M. Beyermann, and R. Schulein. Inhibition of Biosynthesis of Human Endothelin B Receptor by the Cyclodepsipeptide Cotransin. *J. Biol. Chem*, 2011. doi: 10.1074/jbc.M111.239244.
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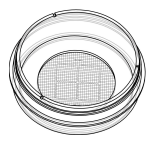
μ-Dish^{35mm, high} family

μ-Dish^{35mm, high}



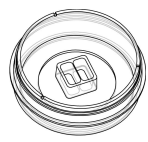
Ordering number	Treatment or Coating	Characteristics
81156	ibiTreat, tissue culture treated, sterile	hydrophilic, tissue culture treated
81151	uncoated, sterile	hydrophobic

μ-Dish^{35mm, high} with Grid-500



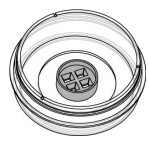
Ordering number	Treatment or Coating	Characteristics
81166	ibiTreat, tissue culture treated, sterile	hydrophilic, tissue culture treated
81161	uncoated, sterile	hydrophobic

μ-Dish^{35mm, high} with Culture-Insert




Ordering number	Treatment or Coating	Characteristics
81176	ibiTreat, tissue culture treated, sterile	hydrophilic, tissue culture treated
81171	uncoated, sterile	hydrophobic

μ-Dish^{35mm, high} with micro-Insert 4 well




Ordering number	Treatment or Coating	Characteristics
80406	ibiTreat, tissue culture treated, sterile	hydrophilic, tissue culture treated
80401	uncoated, sterile	hydrophobic

μ-Dish^{35mm, high} glass bottom



Ordering number	Treatment or Coating	Characteristics
81158	glass bottom, sterile	uncoated glass coverslip

μ-Dish^{35mm, high} with ESS



Ordering number	Treatment or Coating	characteristics
81291	elastic surface ESS, 1.5 kPa, uncoated, sterile	hydrophobic
81391	elastic surface ESS, 15 kPa, uncoated, sterile	hydrophobic
81191	elastic surface ESS, 28 kPa, uncoated, sterile	hydrophobic

For research use only!

Further technical specifications can be found at www.ibidi.com. For questions and suggestions please contact us by e-mail info@ibidi.de or by telephone +49 (0)89/520 46 17 0. All products are developed and produced in Germany.

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