



## IncuCyte™ Applications

### Using ibidi® $\mu$ -Slides in the IncuCyte™

The IncuCyte™ and IncuCyte™*FLR* currently support 4 ibidi Integrated BioDiagnostics  $\mu$ -Slide products:

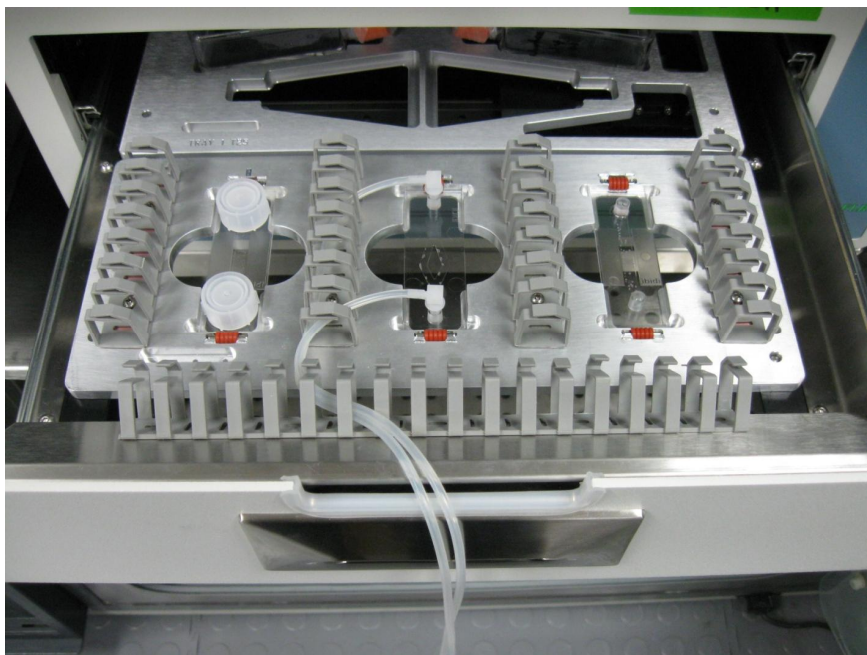
#### Supported ibidi $\mu$ -Slides:

| Description           | Part Numbers                             |
|-----------------------|--|
| $\mu$ -Slide I Luer   | 80176, 80172, 80173, 80174, 80171        |
| $\mu$ -Slide VI       | 80606, 80602, 80603, 80604, 80605, 80601 |
| $\mu$ -Slide 8 Well   | 80826, 80822, 80823, 80824, 80825, 80821 |
| $\mu$ -Slide y-shaped | 80126, 80122, 80123, 80125, 80125, 80121 |

## Preparing the IncuCyte™

Essen Instruments has designed a special microslide tray (Tray 18) for use with the ibidi  $\mu$ -Slide products. It includes tubing routing guides, and it holds a maximum of 3  $\mu$ -Slides at any given time. Each slide is fastened securely at both ends by a silicone tab.

$\mu$ -Slide applications that utilize the ibidi flow kit require installation of a special IncuCyte™ drawer panel. This modification can be requested at the time of purchase, or it can be retrofitted at the Essen Instruments facility. The panel includes additional tubing routing guides and a cutout that allows tubes to exit the system. See the image below.



#### Properly Routing Tubes with the Flow Kit

In this example, flow kit tubes have been properly routed through the tubing routing guides present on the IncuCyte™ tray and the front drawer panel. The tubes can be seen exiting the system through the cutout in the front panel.

Please keep the following important points in mind when using the ibidi flow kits:

- Ensure that all liquid connections are secure. Your IncuCyte™ warranty will not cover damage incurred by any fluid that leaks out and spills into the system.
- Route the tubing out of the system carefully, making use of the special guides present on the IncuCyte™ tray and drawer panel.
  - Ensure that the tubing does not obscure any portion of the slide that will be imaged.
  - Ensure that the tubing does not cross over the tray identification holes located in the lower left portion of the tray, near the tray label.
  - Ensure that tubes are well contained within the tubing guides. Loose tubing could be caught up by the camera as it scans.

The  $\mu$ -Slide I,  $\mu$ -Slide VI and  $\mu$ -Slide 8-Well are symmetrical, and they can be inserted into the microslide tray in either orientation. However, in an effort to maximize scanning consistency, it is recommended that the slides always be placed into the tray with the ibidi label in the upright (readable) position.

The y-shaped  $\mu$ -Slide is not symmetrical. It must be placed into the tray with the 30° angle at the back of the instrument and with the 45° angle at the front. Failing to insert this slide in the proper orientation will result in imaging outside of the channel area.

## Configuring Scans

Set scans of the ibidi  $\mu$ -Slides as you would for any other IncuCyte™ supported vessel. Select the Schedule Upcoming Scans tab, select Tray 18 and then the appropriate  $\mu$ -Slide type. If desired, use the Scan Pattern Editor to design a custom scan pattern. Finally, set scan times and apply the scan schedule.

There are a few limitations in the current version of the IncuCyte™ software associated with ibidi slides:

- Well/Sector labels can be difficult to read. To enable maximum flexibility related to the layout of images, the channels were broken down into a relatively large number of sectors. This high degree of segmentation makes the labels very small in many of the user interface windows.
- The vessel properties boxes in the Vessel View and main window are not well positioned, and they sometimes overlap with each other or with other viewable areas of the vessel. If this is a problem, the properties boxes can be turned off by deselecting the Label, Cell Type, Passage and Metric options under the View pull-down menu in the View Completed Scans Screen.

## Viewing and Analyzing Images

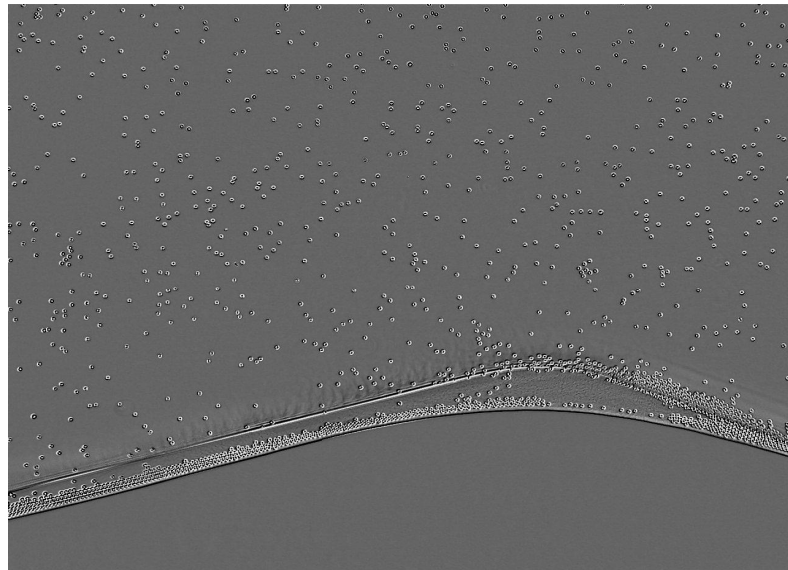
All of the standard IncuCyte™ tools for image visualization and quantification are available for the ibidi slides. However, due to the particularly small channel dimensions of some  $\mu$ -Slide types, there may be occasions when the edges of the channel will be included within the image area. This situation will occur most frequently in the case of the y-shaped slide because the channels are angled with respect to the edges of the IncuCyte™ images. Relative positioning of channel edges within the image will also depend upon the system magnification (10x vs. 20x objective).

Images are not presented in the user interface as if they were viewed from above and standing in front of the instrument. As such, the locations of channel edges within an IncuCyte™ image can be difficult to interpret.

### Image Orientation

The image below displays beads loaded into a y-shaped  $\mu$ -Slide. The channel edge near the bend in one branch of the channel is visible within the image area. Based upon this image alone, one might expect the channel edge to be at the bottom of the slide were one to stand in front of the IncuCyte™ and open the drawer. However, this is not the case. The actual, physical orientation of the slide within the instrument is indicated below with labels. Note that the bottom of the IncuCyte™ image actually corresponds to the right side of the slide within the instrument.

Instrument Left



Instrument Back

Instrument Front

Instrument Right