



ibidi Practical Course

Endothelial Cell Studies Combining Shear Stress Cultivation with Impedance Measurements

Topics:

Impedance measurements elucidate the highly dynamic behavior of endothelial cells (EC) in static and perfused cell culture. The non-invasive, in-line measurement reveals the impact of flow conditioning on an intact cell layer over short and long time periods. The insights from impedance measurements clearly show that flow conditioning of an endothelial cell layer completely changes the physiology, making the shear stress impact an indispensable factor in all EC research. Measuring impedance characteristics reveals the time dependence and plasticity of flow stimulation in short and long term. The course provides background information, useful handling tips, and a profound insight into impedance measurements with Electrical Cell Substrate Impedance Sensing (ECIS).

Target Group:

The course is intended for scientists and technical associates, with profound cell culture experience, who want to establish cell cultivation under flow in their labs and measure impedance, in order to learn more about physiological processes.

Schedule Day 1

Start at 10:00 am

Welcome and Introduction to the Experimental Setup

- Talk 1: ibidi Slides and ibidi Pump System, Setup Perfusion Assay
- Talk 2: Impedance Measurements: ECIS Theory
- Lab 1: Start of Impedance Measurement (Without Flow)

Lunch

- Hands-on Part 1: Handling of Channel Slides
- Hands-on Part 2: ECIS Software and Introduction to Measurements
- Lab 2: Start of Flow Experiment with Impedance Measurement

Summary of Day 1 around 5:00 pm

Schedule Day 2

Start at 9:00 am

- Talk 3: Physics of Fluidic Systems, Flow Setups, Example Publications
- Talk 4: Impedance Measurements: Application Examples

Lunch

- Hands-on Part 3: ibidi Pump System, Flow Rate Measurement, Calibration
- Interpretation of ECIS Data, Data Treatment, Modeling, and Discussion of Results

End of Training around 4:30 pm

Participation is free of charge.

The number of participants is limited to 8. For registrations and further questions please contact us at info@ibidi.de.