



ibidi Practical Course

OPAL Real-Time Oxygen Measurement in Live Cell Imaging

Topics:

Because living cells continuously consume oxygen, the partial pressure of oxygen in the tissues can drop down to 2 kPa, which is equivalent to 10% of the value in ambient air. While researchers focus on controlling temperature, humidity, and pH in *in-vitro* cell culture experiments, the actual oxygen levels in the respective cellular microenvironments are often neglected. This is mainly due to the lack of an easy-to-use measurement system, which measures oxygen at discrete spots of interest during a running experiment. The ibidi OPAL Optical O₂ Measurement System fills this gap.

During this ibidi practical course, a theoretical background on O₂ measurement and its implementation in physiological experiments during live cell imaging will be presented. Plus, intra- and extracellular O₂ measurement will be demonstrated and practiced in cell culture.

Target Group:

The course is intended for scientists with a profound experience in cell culture and sterile working techniques who want to establish O₂-controlled assays during microscopy in their lab.

Schedule

10:00 am – Welcome and Introduction

- OPAL – Theoretical Background
- Hands-On OPAL System
Experimental set-up, software, and calibration
- Intracellular O₂ Measurements – Working with NanO₂
Adding NanO₂ to a cell layer

12:30 – Lunch

- Extracellular O₂ Measurement – Working with CPOx Beads
Adding CPOx Beads on a cell layer
First extracellular measurement using CPOx Beads

Good to Know:

- Characteristics of measurements in open wells (μ-Slide 8 Well) versus channel formats (μ-Slide 1 Luer)
- Discussion of Experimental Strategies
How, when, and where to measure
- Second Measurement and Comparison with the First Measurement
- Discussion and Conclusion

End of training at around 5:00 pm

Participation is free of charge.
The number of participants is limited to 8. For registration and further questions, please contact us at: info@ibidi.de.