zenCELL *owl*

Dunn Labortechnik

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- Microscopy for the Incubator -

NEW!

The zenCELL *owl* has 24 channels for an automated remote monitoring of cell cultures. Data is captured, images are taken and analysis performed constantly in real-time. You can have remote access to monitoring via your office PC saving working time. The compact footprint and lightweight device guarantee space saving and easy operation in the incubator.

► Possible Applications:

- Cell culture monitoring
- Determination of cell confluence
- Migration assays
- Observation of stem cells
- Biocompatibility tests
- Cytotoxicity tests (e. g. for drugs)

► Advantages:

Monitor remotely
Monitor cell cultures at any time online from outside the lab.

Analyse 24 wells in parallel
Check cell confluence and morphology and compare different wells.

Automate routine applications
Let zenCELL *owl* record and analyse your cells: set up the experiment and move on to other tasks.

Increase data quality and quantity
Real-time data capturing, time-lapse videos and automated evaluation of confluence.

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Save space and stay flexible
Small and light-weighted device leaves enough space in the incubator.

Non-invasive
Incubator must not be opened for use of microscope thus maintaining environmental incubator conditions.

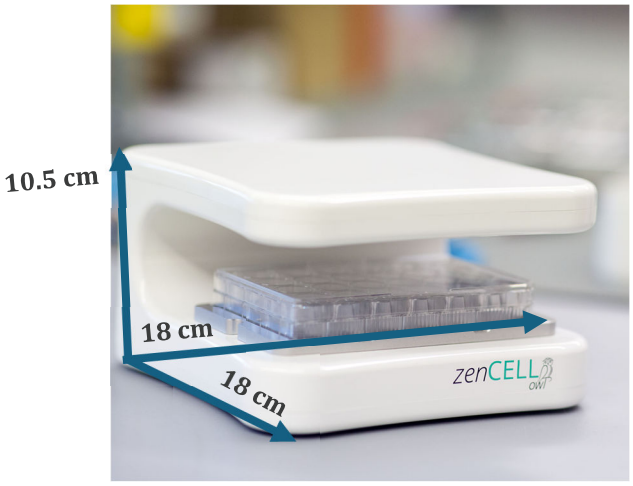
Long-term measurement
Continuous automated data acquisition increases the validity of your assay by rising the number of tracked and analysed data points.

Automated data analysis
Confluence evaluation and estimation of changes in the relative cell number of each image in real time without subjective user interpretation.

High-quality photos and time-lapse videos
Data can be analysed at any time to maintain dynamic changes and developments of cell culture retrospectively down to cell level.

► Technical specifications:

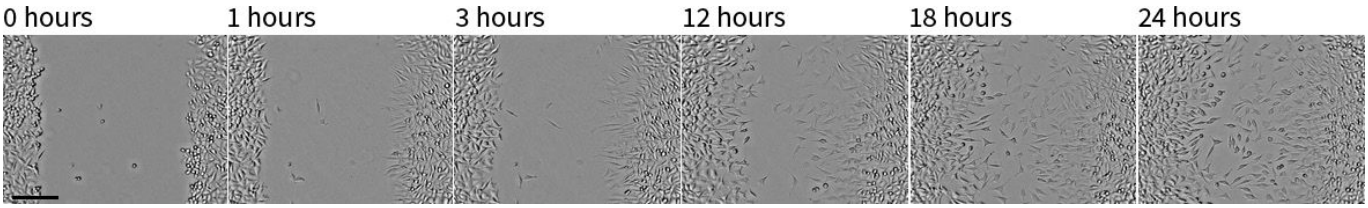
- 24 miniature microscopes
- 1.2 x 0.9 mm FOV
- Powered with USB 3.0
- Label-free, digital phase contrast
- 30 seconds per 24 wells
- Duration depends on storage space
- PNG, JPG, BMP, AVI and CSV
- LED
- 10x magnification (+digital zoom)
- 1050 gramme
- 5 MP CMOS, 2592 x 1944 res.
- 4 min. to 24 hours per interval
- Cell count and confluence algorithm



► Application note: Wound healing

Wound healing speed – accurately calculated

Observe and control every time-point and step of wound healing process retrospectively and in detail. Calculate the speed of wound healing by analyzing the increase of confluence in the wound area.



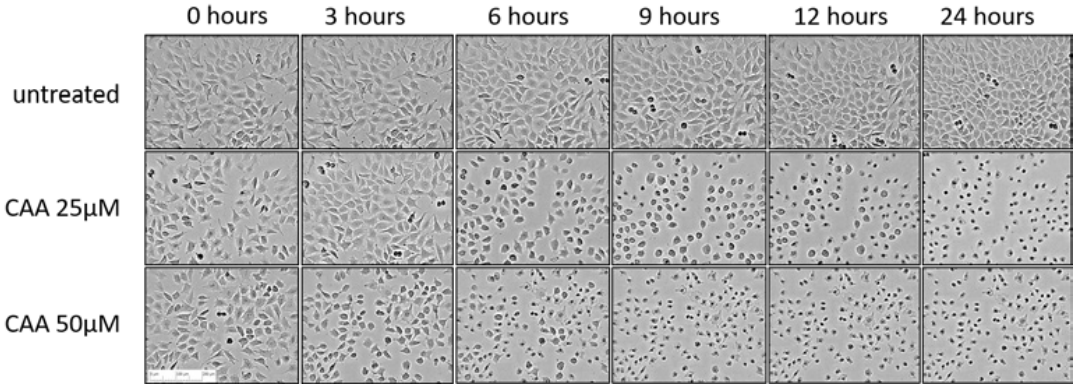
The wound was inserted in a confluent monolayer of L929 cells by a pipet tip (0 hours). Within a time-period of 24 hours the cell migration results in a continuous closure of the wound.

The simultaneous analysis of cell morphology and confluence in up to 24 wells under identical conditions optimizes the comparability of the results and reproducibility of data.

► Application note: Cytotoxicity Assay

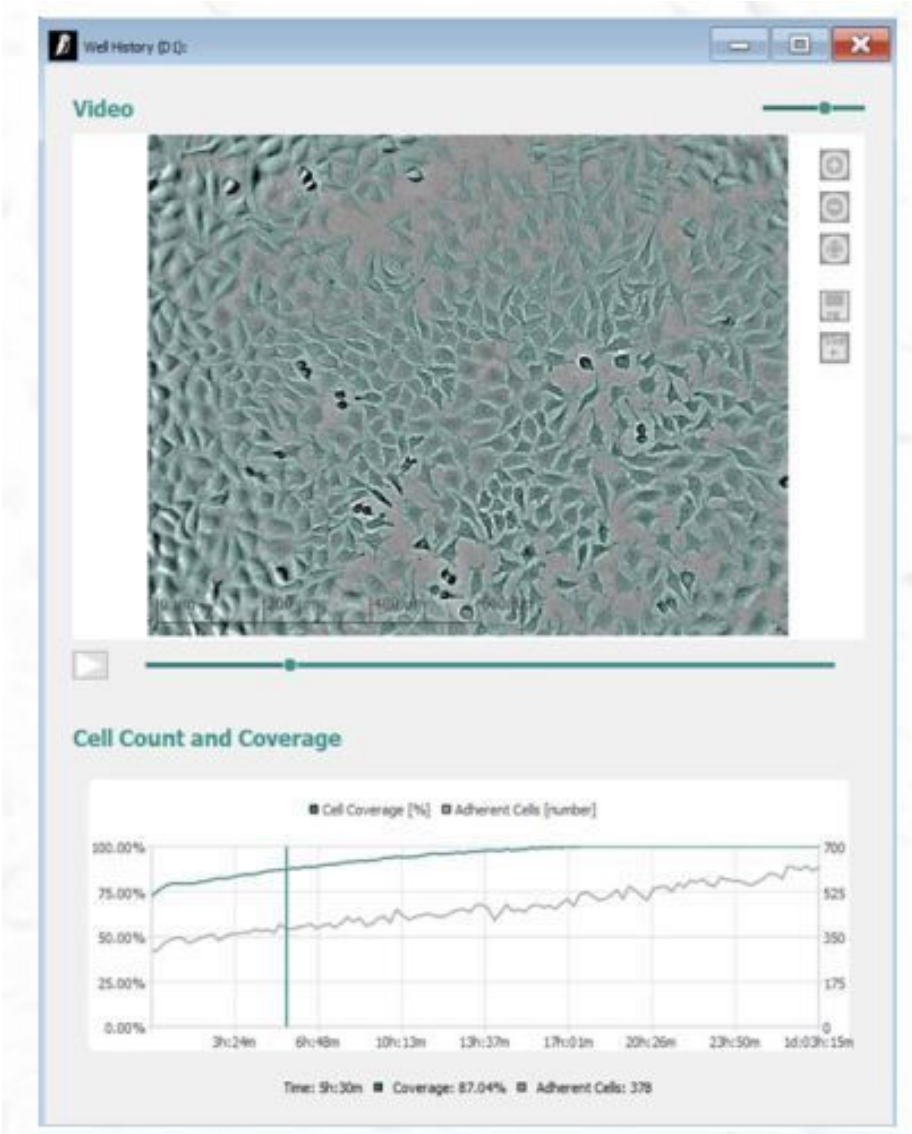
Visualize drug effects on cell morphology

Evaluate the cytotoxic effect of different agents on up to 24 cell cultures simultaneously and in long-term. Automatic and around the clock data capturing enables to analyze every time-point of your cytotoxicity assay retrospectively and detailed



Chloroacetaldehyde (CAA) treatment results in a dose-dependent growth inhibition, loss of cell morphology and decrease in cell coverage. Above: Digital phase-contrast imaging of L929 cells. Scalebar: 200 µm. Below: Cell coverage. Blue: untreated, yellow: CAA 25 µm, red: CAA 50 µm.

► Application note: Cell Culture Monitoring



Perfect start of analysis with perfect cells

Automatic calculation of cell confluence for more objective and significant information about the confluence status. It is easier to determine the perfect starting point for an experiment without subjective interpretation.

New insights in your cells‘ behavior

Analyze dynamic changes and developments of the cell culture retrospectively and in detail. Track changes in cell morphology by zooming down to single cell level and visualize a cell while dividing, moving or dying.