

DolphinQ

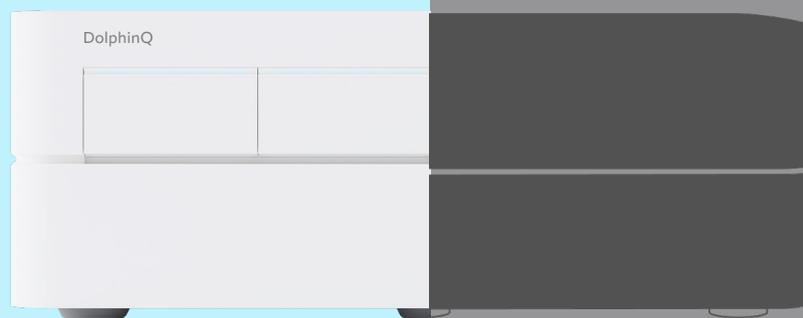
DolphinQ Mini

Continuous DO/pH/OCR/ECAR
metabolic profiling across the full
culture period



The Leadgene metabolic analyzer family includes DolphinQ and DolphinQ Mini. Both all-in-one platforms combine real-time DO, pH, OCR, and ECAR sensing with controlled incubation and integrated mixing for unbiased metabolic readouts.

DolphinQ DolphinQ Mini



Traditional Snapshot

- ④ Longitudinal metabolism data
- ④ Continuous real time monitoring
- ④ High throughput independent incubation

- ⊗ Multiple pre-determined but blinded timepoints
- ⊗ End point measurement
- ⊗ Sacrificing cells/rare samples

DolphinQ



DolphinQ Mini



Long-term metabolism analyzer



Cellular metabolism is inherently dynamic, requiring continuous, long-term observation rather than endpoint snapshots. DolphinQ reveals metabolic behavior in its true physiological context.



Patented 96/24-well
plate mixing



Independent
controlled incubation



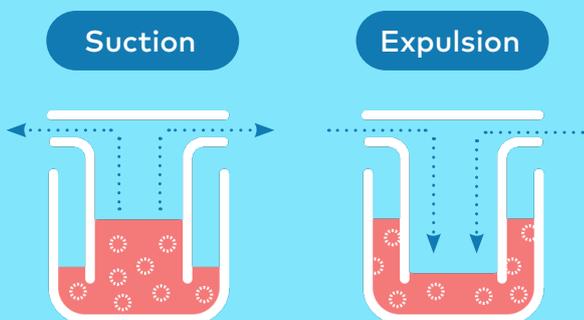
DO/pH/OCR/ECAR
metabolic monitoring

Beyond snapshots:

Continuous, real-time tracking of cellular metabolism enables long-term, non-disruptive analysis of respiration and glycolytic shifts within the culture system.

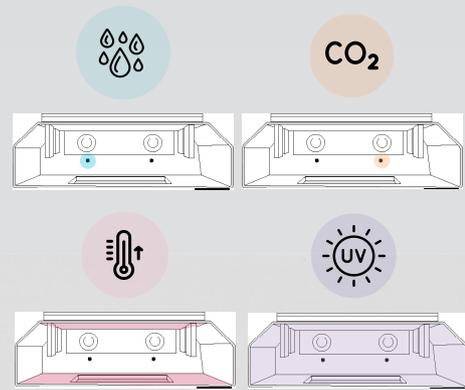
Mixing system

Air-induced suction and expulsion enable efficient pneumatic mixing in standard 96/24-well plates.

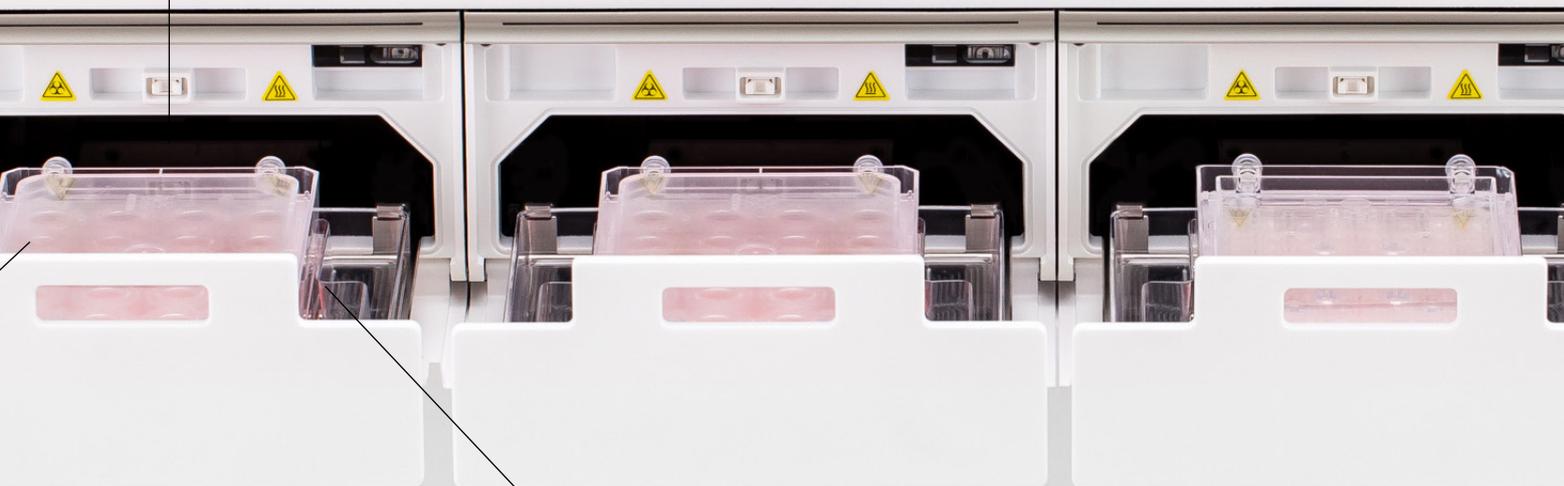


Four independent incubation chambers

- ↳ Disposable water reservoir
- ↳ Temperature control
- ↳ CO₂ level control
- ↳ Humidity monitoring
- ↳ UV light sterilization



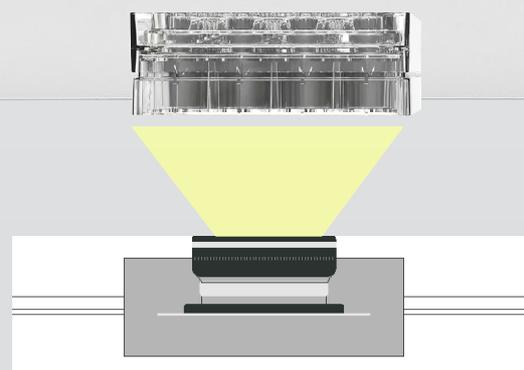
minQ



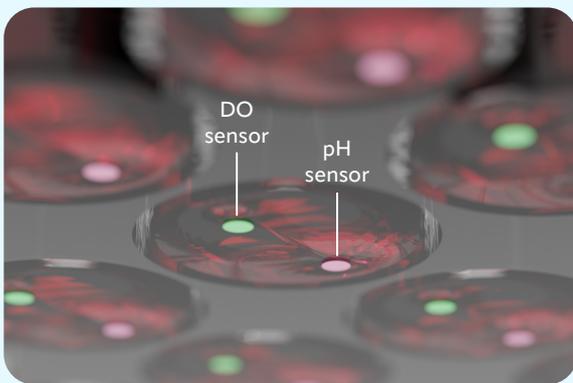
Sensor plate

Camera module

Real-time detection of cell metabolism across the entire 96/24-well plate.



Unlocking True Real-Time Metabolic Monitoring



Do/pH optical sensors are placed inside each well where a camera module below will capture the signals.

Every 10 minutes measurements are taken non-invasively, allowing for the analysis without disruption, sampling, or contamination.



DO => OCR

(Oxygen Consumption Rate)

- ↘ The amount of oxygen consumed by cells
- ↘ Mitochondrial aerobic respiration and ATP production



pH => ECAR

(Extracellular Acidification Rate)

- ↘ The rate of acid (e.g., lactate) production by cells
- ↘ Energy production through glycolysis

All metabolic readouts are recorded as continuous time-series data, enabling direct comparison of dynamic metabolic responses across conditions.



24-well plate single well



DO and pH sensors

96-well plate single well



DO or pH sensors

Analyzer in a Incubator with Tailored Mixing to Enable Longitudinal Data



Independently Controlled Incubation Environment

Ensures cell health for any downstream assay afterwards

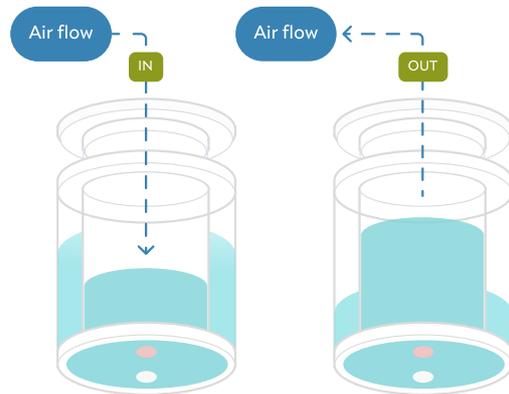
Allows precise pauses for manipulation at your chosen timepoint

Each chamber with independent settings and start/stop schedules

Use your regular culture medium—no need for special formulations



DolphinQ applies suction or expulsion pressure through patented lids, enabling reciprocating "in-well" mixing for both 96 and 24-well plates

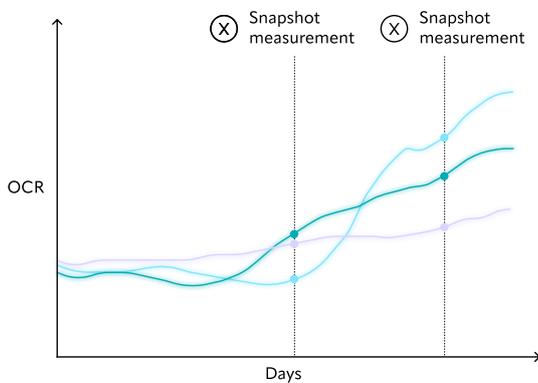


Patented Reciprocal Mixing Technology

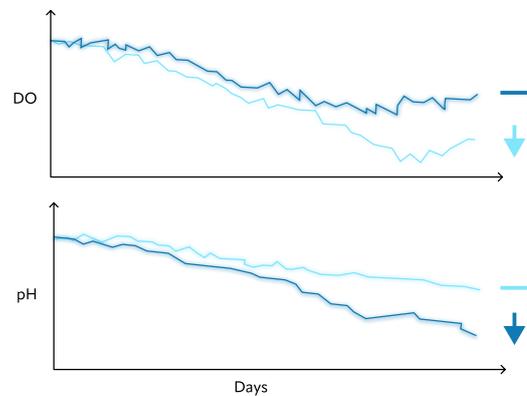
- ④ Programmable mixing for diverse cell culture models
- ④ Reduces gradients for location-independent sensor readouts
- ④ Supports sustained cell growth with healthier culture conditions

From Capabilities to Impact: Application Examples

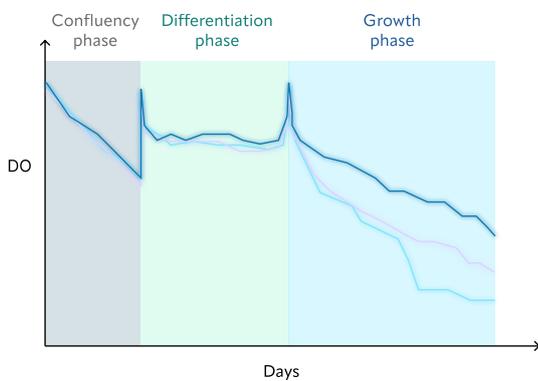
Capture the full course of metabolic profiles across culture time



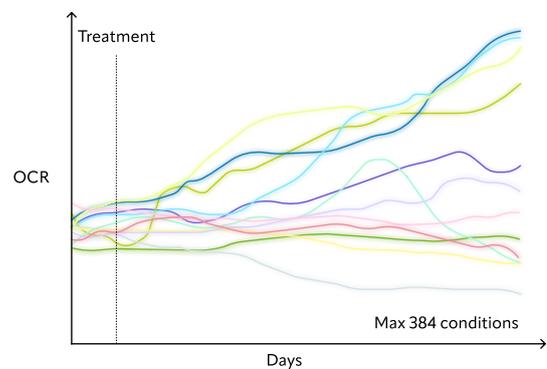
Monitor metabolic shifts between mitochondrial respiration and glycolysis



Design sequential experiments all in one plate: e.g. cell differentiation to treatment, live pathogen exposure observations



Optimize and screen key parameters: e.g. seeding density effects, gene edits, compound libraries, media compositions, drug dosage





DolphinQ Mini

Compact solution for single-experiment workflows

DolphinQ

Parallel, multi-chamber metabolic studies

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DolphinQ enables longitudinal, high-resolution metabolic profiling, tracking OCR, ECAR, DO, and pH dynamically under physiological and stress conditions. This real-time insight directly addresses our key pain point—capturing the temporal dynamics of mitochondrial function in disease-relevant cardiomyocytes.

Accelerating Biology.
Empowering Discovery.

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