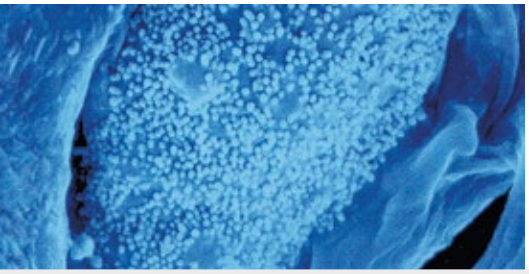
Advanced in vitro exposure systems

Option: VITROCELL® Cloud PowerVent



VITROCELL® SYSTEMS

VITROCELL® Exposure Systems for Inhalation Toxicology

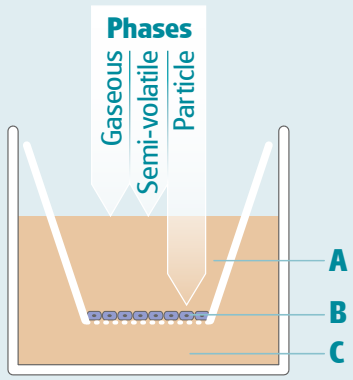
Direct Exposure Technology at Air/Liquid Interface

In response to the scientific need to expose in physiologically relevant conditions, VITROCELL® Cloud exposure modules have been specifically designed and engineered to enable direct exposure of mammalian cells or tissue at the air/liquid interface where the cell systems are not covered with culture media. Researchers can thus use all cell types cultivated on microporous membranes. This approach allows for more credible and authentic results than by submerged exposure due to a closer replication of the human physiology.

The advantages:

- No losses
- No dissolution
- No reaction of constituents with culture media
- High sensitivity

The exposure of mammalian cells or tissues to airborne substances is frequently performed under submerged conditions. Here, the test substances are dosed into the culture media. This procedure results in an undesired interaction of the formerly airborne substances with the media causing limitations for authentic analysis.

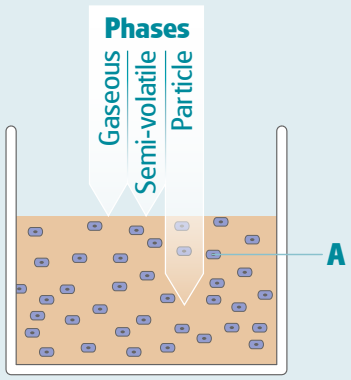


Submerged Cultivation and Exposure in Incubator

A Media above cells
B Cells on membrane
C Media below cells

Interaction of test components with culture media

Low sensitivity

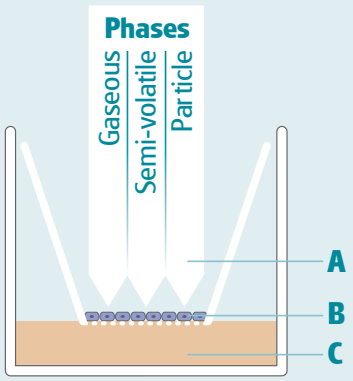


Suspension Cultivation and Exposure in Incubator

A Cells in media

Interaction of test components with culture media

Low sensitivity



Air / Liquid Cultivation and Exposure in Exposure Module

A Direct and controlled exposure of test atmosphere to cells
B Cells on membrane
C Media below cells

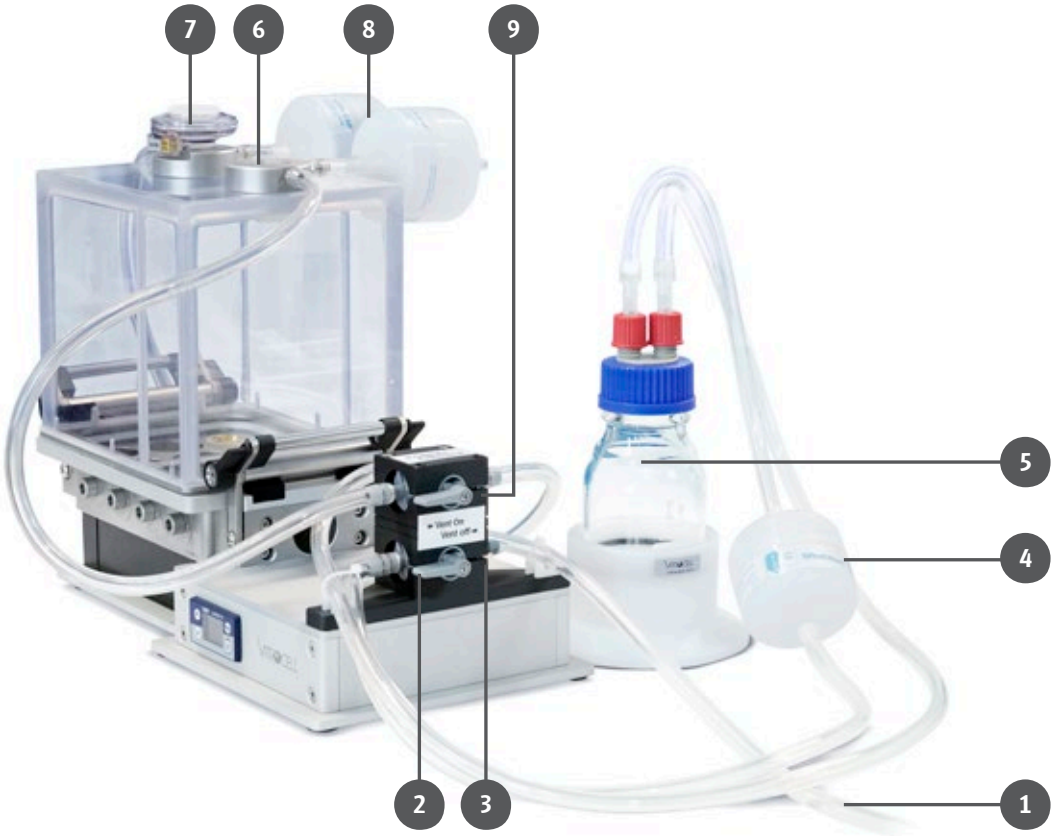
No losses
No reaction of principle components with culture media

High sensitivity of system

VITROCELL® SYSTEMS

Option: VITROCELL® Cloud PowerVent

Evacuation of residual gaseous compounds



This feature for the Cloud family is designed for the work with hazardous compounds.

The Cloud exposure chamber is connected airtight to the base module.

After nebulisation and sedimentation, the vacuum pump is activated and potentially remaining gaseous substances are evacuated.

1 Tube to vacuum pump
2 Bypass for switching off venting function
3 Switch for venting function
4 HEPA Filter
5 Liquid trap
6 PowerVent Adapter for Clean Air
7 PowerVent Adapter for Exposure Chamber
8 HEPA Filters for filtered Air
9 Switch for venting function of Exposure and Clean Air Chambers

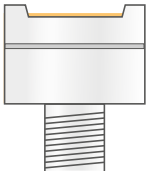
Features

- Available for CLOUD 6, 12 and 24
- Tight connection of exposure chamber to base module
- Fast removal of residual gaseous compounds

VITROCELL® Cloud Quartz Crystal Microbalance Sensor

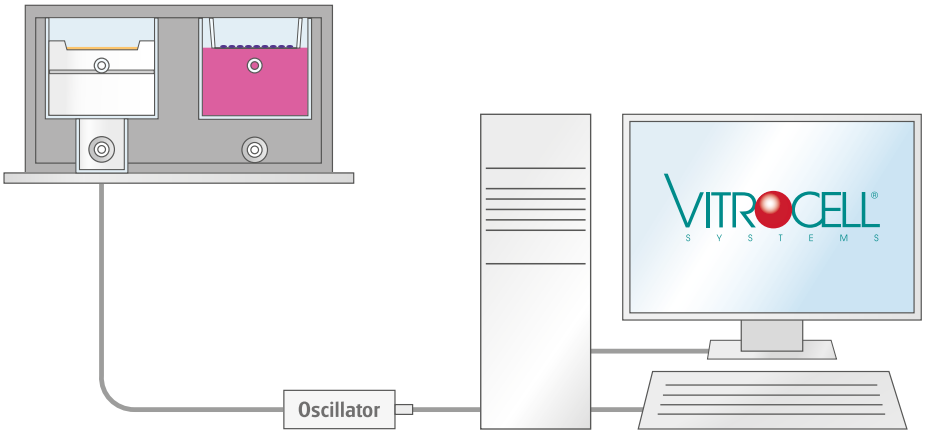
The microbalance sensor can be fitted in the VITROCELL® Cloud ALI Starter Kit QCM, VITROCELL® Cloud 6, and VITROCELL® Cloud 12.

It is capable of measuring the deposition in the module at a resolution of 10 nanogram/cm² and second.



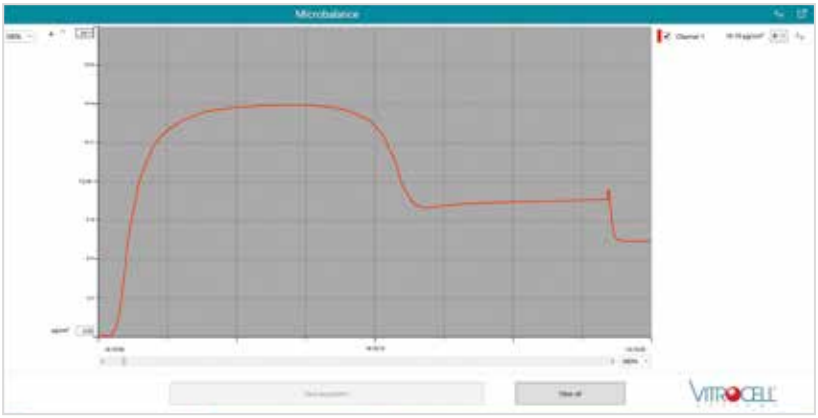
Removable Sensor Holder

Quartz Crystal Sensor Plate



The VITROCELL® Microbalance Controller is available as laptop version (for 1 sensor) or PC version (for 3, 6 or 9 sensors).

VITROCELL® Monitor Software



The VITROCELL® Monitor software shows the deposition in ng/cm² online for max. 9 microbalances. The data is logged into a .csv file which can be opened with Excel®.

About VITROCELL®

VITROCELL® exclusively concentrates on the developing, producing, installing, training and servicing of advanced *in vitro* exposure systems.

The VITROCELL® Systems' team is driven by their vision for new in-vitro standards through state-of-the-art technology, highly qualified workmanship and absolute client dedication. VITROCELL® has successfully collaborated with clients from leading research institutes, contract research organizations, regulatory authorities or industrial laboratories across the world. Working with our team experts, all modules have been tailored to create durable and complete turnkey-systems for ***in vitro*** inhalation toxicology. Gases, environmental atmospheres, nano particles and complex mixtures are analyzed on lung cells at the air/liquid interface using these systems. VITROCELL® technologies are also applicable to solutions for skin research.

Over a decade of devotion to research in this specific field has given our team of design & precision manufacturing specialists the opportunity to mentor highly diversified and complex projects **from conception to completion**. We strive to become a constructive member of each research team, providing support when it is needed, advice when it is required and modules of the highest quality, which are even polished by hand before leaving here to be integrated into your workspace. Every piece of our German engineered equipment is manufactured to the highest of standards – yours.

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please scan the QR-Code:

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