

## Press Release

### **VITROCELL<sup>®</sup> cell culture system: Efficient direct exposure of cell cultures to environmental and workplace atmospheres, cigarette smoke and diesel exhaust.**

**The in vitro analysis of effects in the respiratory tract caused by indoor, outdoor and workplace environments is getting more and more important.**

For this purpose, VITROCELL<sup>®</sup> offers a sensitive cell exposure system capable of directly exposing gases, nano particles and complex mixtures to cells from the respiratory tract.

The test atmospheres are either collected in the environment or produced by using aerosol generators. There is a choice ranging from liquid or dust aerosol generators to complete cigarette smoking machines. In order to obtain a dose / response relationship, the test atmospheres are diluted by special dynamic dilution systems.

Then exposure takes place in the VITROCELL<sup>®</sup> cell cultivation and exposure modules. For this purpose, the cells are first cultivated on membrane inserts (e. g. ThinCerts<sup>®</sup> from Greiner, Costar<sup>®</sup> from Corning or Falcon<sup>®</sup> from Becton Dickinson). The membrane inserts are placed in the modules which are tempered at 37°C. The medium supply is performed either statically or by permanent exchange so that the cells receive the cell culture medium from below through the membrane of the insert (cultivation at the air/liquid interface).

In direct exposure technology, the test atmosphere is delivered to the cells via special aerosol inlets using a low vacuum flow. As the cells are not covered with medium, they are exposed most efficiently at the air/liquid interface and can react therefore in an optimal manner. After exposure, the membrane inserts are taken out of the module and cells are forwarded to standard routines for endpoint analysis.

For the direct exposure to bacteria (Ames Test), a special module for Petri dishes is used.

VITROCELL<sup>®</sup> SYSTEMS offers a large product program of equipment for the in vitro analysis of airborne substances such as gases, nano particles and complex mixtures. The VITROCELL<sup>®</sup> product range helps to reduce animal testing in the field of e. g. inhalation toxicology. The customers of VITROCELL<sup>®</sup> are leading medical and environmental research institutes as well as the pharmaceutical and other industries.

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