

Press Release

VITROCELL[®] presented turnkey in vitro test systems for nano particles, gases and complex mixtures at the 2009 SOT Annual Meeting in Baltimore.

The 2009 SOT Conference from March 15-19, 2009 in Baltimore/USA was again a successful SOT Annual Meeting and ToxExpo. Attendance was remarkably strong this year with a grand total of 6,750 registrants. The final number of abstracts presented was 2,322.

VITROCELL[®] SYSTEMS participated in the ToxExpo exhibition showing its broad product program of equipment for the in vitro analysis of airborne substances such as nano particles, gases and complex mixtures.

VITROCELL[®] SYSTEMS presented the following innovations:

Turn-key installations for the analysis of aerosols from dry powders, liquids and suspensions

In using VITROCELL[®] technology, the aerosol can be generated from non-cohesive, dry powders and dusts down to the size of nano particles. The other option is to generate the aerosol from liquids, solutions and suspensions. In this case a dry aerosol can be obtained by a special aerosol generator with an integrated drying unit. The aerosol generator can be directly connected to the VITROCELL[®] cell cultivation and exposure modules.

The VITROCELL[®] Microbalance Sensor System

This special sensor can be integrated in the VITROCELL[®] 6 PT-CF stainless steel exposure module and is capable of measuring the deposited mass over time with an incredible precision up to 10 ng/cm² per second. It is therefore a powerful tool for the dose-response calculation.

The VITROCELL[®] 12 HT Module for higher throughput with 12 mm cell culture inserts

The module is made of stainless steel and has now 6 compartments for cell culture inserts. With the optional dilution system it is possible to vary the dose by adding dilution air. So this new module is very interesting for users which want to analyse more cells or different cell types within one experiment.

About the VITROCELL[®] cell cultivation and exposure technology

The direct exposure of the cells takes place at the air liquid interface in the VITROCELL[®] cell cultivation and exposure modules. For this purpose, the cells are first cultivated on membrane inserts (e. g. ThinCerts[®] from Greiner, Costar[®] from Corning or Falcon[®] from

Becton Dickenson). 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. In both cases the cells receive the cell culture medium from below through the membrane of the insert.

In the direct exposure technology, the test atmosphere is delivered to the cells via specially treated 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 therefore react 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.

The VITROCELL® product range helps to reduce animal testing in the field of e. g. inhalation toxicology. For this purpose human cells are cultivated in special exposure modules on membranes and then exposed at the air/liquid interface to the test substances. The same technology can also be applied to bacteria. The customers of VITROCELL® are leading medical and environmental research institutes as well as the pharmaceutical and other industries.

More information:

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Waldkirch, March 2009

