



**ASSOCIATION  
OF INHALATION  
TOXICOLOGISTS**

## **Annual Conference 2013**

### **Session 3 : The future of inhalation *In vitro* testing**

#### ***In vitro* human cell culture systems and air liquid interface techniques**

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The development of *in vitro* methods to investigate biological effects of inhalable compounds started several decades ago. Different exposure strategies were pursued, all of which aimed on a situation where biological models like cell lines, primary cells or more complex tissue equivalents could be presented to the gas phase in an adequate way. Fundamental observations and considerations led to the development of the air-lifted interface technique, which nowadays is the state-of the-art for testing inhalable compounds *in vitro* for toxicological, pharmacological or other purposes. However, the actual procedures in this basic ALI approach are still lacking several characteristics which are of great importance for a further development of the possibilities in inhalation testing *in vitro*.

The presentation will give an overview on cells and exposure strategies and focus on an improved testing procedure. It addresses typical limitations of such test systems and includes an integrated technique for cell culture, cell exposure and cell analysis steps.