Lecture: free communications

MucilAir: a novel human 3D airway epithelium model for acute or long term toxicity testing of chemicals

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Our company, Epithelix, has developed a novel *in vitro* cell model of the human airway epithelium, MucilAir. It is not only morphologically and functionally differentiated; but it can also remain at a homeostatic state for more than one year. MucilAir has already being successfully used by some university laboratories, pharmaceutical companies for research and drug development. With the advent of European legislation on chemicals, namely REACH, it becomes an urgent matter to develop more alternative methods to cope with the increasing demands of the chemical industry for chemical assessments. The alternative methods need to be validated by an official organization such as ECVAM.

Our goal is to push our *in vitro* cell model MucilAir into pre-validation process. With the support of 3R Foundation, we assessed the toxicity of 8 chemical compounds using MucilAir. Cell viability (resazurin test) and Tans-epithelial electric resistance (TEER) have been used as endpoints. The EC_{50} values for each chemical have been determined on 3 independent batches (3 donors) of MucilAir. These tests showed that the EC_{50} values obtained with the two endpoints from 3 different batches of MucilAir are quite similar, suggesting a good reproducibility. The particularities of MucilAir and the relevance of these results will be presented and discussed.

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