

## Artificial Airways Good News For Asthma And Animals

ScienceDaily (Apr. 28, 2008) — A new 'artificial airway' being developed in a test tube could make it possible to develop better therapies for asthma and allergy sufferers and could reduce the need for animal testing.

The development promises to benefit people with asthma, whose airways (breathing passages) are sensitive to pollen, dust, animal fur and viruses which cause them to be inflamed making it hard to breathe.

Academics at the University of Southampton are working with the National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs) on this project.

Principal Investigator on the project, Donna Davies, Professor of Respiratory, Cell and Molecular Biology in the University's Infection, Inflammation and Repair division, is working with Professor Hywel Morgan of the University's School of Electronics and Computer Science to construct the artificial airways.

NC3R provides a UK focus for the promotion, development and implementation of the 3Rs in animal research and testing. The airways, which are being developed over a two and a half year period, will be made using tissue engineering. Layers of the cells that make up the airway tissue will be grown inside a micro-fluidic device. The cells will be grown on a tiny membrane that will allow access to both sides (the air and blood) of the cells. The device will allow researchers to fully understand how lung function is affected by air particles and allergens and to test their effects without animal testing.

"This new model will allow us to measure the transport of materials and the challenges the airways are presented with," said Professor Hywel Morgan.

The new Mountbatten Building at the University, due for completion later this year will make it possible to develop the microfluidic devices needed to take this research forward.

*Adapted from materials provided by [University of Southampton](http://www.universityofsouthampton.ac.uk).*

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