

Scientists to study causes of asthma in organisms without lungs

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Scientists from Royal Holloway, University of London, will research the biology of human asthma by using a slime mould, an organism which has no lungs but could hold the key to new treatments.

Professor Robin Williams, from the School of Biological Sciences at Royal Holloway, and Professor Sven-Erik Dahlén, from the Karolinska Institute, in Stockholm, will use the soil-living amoebae to explore how bitter tasting compounds cause airways, that are constricted during an [asthma](#) attack, to relax.

The study will aim to identify how potential new treatments could work at a cellular level to reverse or prevent [asthma attacks](#).

Royal Holloway today (Friday 12th December) received part of a £400,000 award by The National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), which is challenging scientists to approach asthma research questions in a novel way. The scheme has also funded projects that will use fruit flies and zebrafish to better understand how asthma is triggered.

"Until now, the use of non-mammalian models in respiratory disease research has been almost non-existent", said Professor Williams.

"However, they have been used to gain an understanding of the molecular mechanisms of other diseases, and these mechanisms have been found to be similar in humans. This suggests that non-mammalian models may be useful alternatives for studying asthma and could lead to

more effective and safer treatments for patients.

"This project will provide a world-leading example of how to eliminate animals from basic and preclinical biomedical research, by employing a non-animal model for discovery and human tissue for preclinical translation."

Asthma is a condition in which irritants can lead to inflammation, narrowing of the airways and breathing difficulties. It affects around 5.4 million people in the UK and 300 million people around the world.

Provided by Royal Holloway, University of London

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