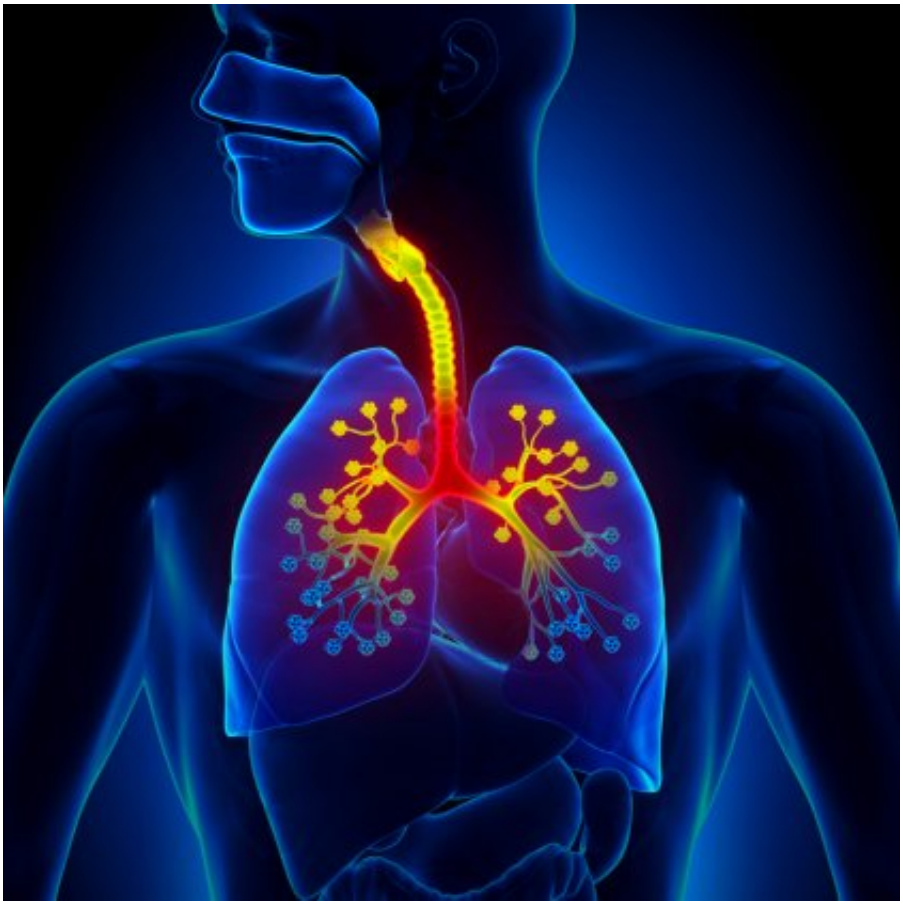
Laboratory drug trials could lead to asthma treatment breakthrough

June 22 2016



Credit: University of Queensland

A new drug with the potential to reverse or slow the development of asthma is being tested by researchers at The University of Queensland.

Developed by international pharmaceutical company Pfizer Inc., the drug is being trialled by UQ's School of Biomedical Sciences.

Research team leader Associate Professor Simon Phipps said the drug targeted a protein called IL-33.

"The tests are based on our recent research, which discovered IL-33 plays a significant role in the development of asthma," Associate Professor Phipps said.

"While IL-33 is well known for causing bronchial inflammation in asthmatics, our research demonstrated for the first time that it also weakens the ability of asthmatics to fend off respiratory viral infections, a common trigger of asthma attacks.

"We're hopeful the new drug will be able to reverse or slow down the development of asthma by blocking the IL-33 protein."

The mouse model research is published in the *Journal of Allergy and Clinical Immunology*, the leading international journal for asthma and allergy research.

Lead authors of the study were research team members postdoctoral fellow Dr Jason Lynch and PhD student Miss Rhiannon Werder.

Dr Lynch said the research discovery stemmed from a preclinical model that he established to understand why co-exposure to respiratory viruses and allergens was a key driver of asthma development in early life.

"We found exposure to a respiratory virus, followed very closely by exposure to an allergen, induced the release of IL-33," Dr Lynch said.

"The excess IL-33 protein was found not only to hinder recovery from

the virus but also to promote the development of more severe and persistent symptoms of the disease.

"However if mice were exposed to an allergen at a time before contracting the virus it made no difference to their recovery process."

Miss Werder is conducting laboratory tests of the new drug as part of her PhD research.

"Our aim is to eventually come up with better treatment therapies that will reverse or slow down the progression of asthma rather than just ease the symptoms," Miss Werder said.

More information: *Journal of Allergy and Clinical Immunology*, www.jacionline.org/article/S00 … (16)30150-6/abstract

Provided by University of Queensland