

# Study finds psychedelic drug prevents asthma development in mice

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Research led by Charles Nichols, PhD, Associate Professor of Pharmacology and Experimental Therapeutics at the LSU Health New Orleans School of Medicine, has found that a psychedelic drug, (R)-DOI, prevents the development of allergic asthma in a mouse model. The effects are potent and effective at a concentration 50-100 times less than would influence behavior. The research was published in the January 15 issue of the *American Journal of Physiology - Lung Cellular and Molecular Physiology*.

"These drugs are known only for their effects in the brain," notes Dr. Nichols. "What we have demonstrated for the first time is that they are also effective in treating physiological diseases outside of the brain, a completely new and exciting role for this class of drug. Not only is this a significant breakthrough in the field of study of serotonin and psychiatric drugs, but it is a breakthrough in the field of asthma as well. We have identified an entirely new anti-inflammatory mechanism for the treatment of asthma in the clinic that could someday be administered in an inhaler or a daily pill."

Previously, Dr. Nichols' lab found that activation of the [serotonin receptor](#) 5-HT<sub>2A</sub> with psychedelics produces powerful anti-inflammatory activity in tissues of the blood vessels and gut. Building on that, the researchers identified a drug they believed would be effective against the inflammatory disease asthma. They found that administration of (R)-DOI blocked pulmonary inflammation, mucus hyperproduction, airways hyperresponsiveness and turned off certain key genes in the lung

involved in immune response that together blocked the development of [allergic asthma](#) in their [mouse model](#).

According to the National Heart, Lung, and Blood Institute, asthma is a [chronic lung disease](#) that inflames and narrows the airways. Asthma causes recurring periods of wheezing, chest tightness, shortness of breath, and coughing. Asthma affects people of all ages, but it most often starts during childhood. In the United States, more than 25 million people are known to have [asthma](#).

"Overall, given the recent interest and success using these drugs for psychiatric therapies in the clinic, our research at LSU Health New Orleans is the first to show that they have potential to heal the body as well as the mind," concludes Dr. Nichols.

Provided by Louisiana State University

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