

Discovery of key regulatory factor may offer new treatment target for allergic diseases

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(PhysOrg.com) -- Researchers at Indiana University School of Medicine have identified a mechanism that causes inflammation in asthma and other allergic diseases, a discovery that could lead to new targets to control such allergic reactions.

By identifying a [regulatory protein](#) that is key to the mechanism and then blocking its production in laboratory tests, the researchers were able to define a protein responsible for causing the inflammation, said Mark H. Kaplan, professor of pediatrics, and of microbiology and immunology at the IU School of Medicine, located on the campus of Indiana University -Purdue University Indianapolis. The research is being reported online today in the June 2010 issue of the journal [Nature Immunology](#).

The IU research team was investigating the chain of events -- and proteins -- that result in the production of a substance called IL-9, which causes a variety of inflammatory responses, such as mucus production in the lungs. Recently other scientists had discovered the existence of a new type of T-cell, one of the body's [immune system cells](#) used to ward off infections. That newly discovered type of T-cell was found to produce IL-9. Kaplan's team, in turn, found that a regulatory factor called PU.1 is necessary for the development of the new type of T-cell.

"We see increased IL-9 production in patients with allergic disease -- allergies, asthma, eczema," said Kaplan, director of pediatric pulmonary basic research and investigator at the Herman B Wells Center for Pediatric Research.

"Effectively targeting PU.1 to prevent its activation could lead to improved treatments for patients who must deal with the inflammation caused by these [allergic diseases](#)," Kaplan said.

Provided by Indiana University

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