

Enzyme and vitamin define the yin and yang of asthma

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The allergen breathed in by a person with asthma triggers a proteinase or enzyme called MMP7 that activates a cascade of events to prompt an allergic reaction, said a consortium of researchers led by Baylor College of Medicine in Houston in a report that appears online today in the journal *Nature Immunology*.

In particular, MMP7 activates [interleukin 25](#), a key mediator of the allergic response in the lung said Drs. Farrah Kheradmand and David B. Corry, associate professors of medicine-pulmonary at BCM, and senior authors of the report.

In the same report, the researchers report that they have identified a form of vitamin A made in the lung that is critical for dampening the inflammatory effect. [Mice](#) that lack MMP7 were found to have higher production of retinal dehydrogenase, an enzyme that is responsible for synthesizing vitamin A in the lung. MMP7 deficient mice showed less lung inflammation when they are exposed to allergens than did mice who had enough MMP7. Suppressing the production of vitamin A restored the asthmatic symptoms in the MMP7 deficient mice.

"It is important to know which mediators in the airway may be setting off the initial cascade of events that result in the asthmatic reaction in the lung; it would be like getting to the top of the food chain," they said.

In the future, they said, they hope to identify the relationship between the synthesis of vitamin A in the body and the repression of MMP7.

More information: *Nature Immunology* -- www.nature.com/ni/index.html

Source: Baylor College of Medicine ([news](#) : [web](#))

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