

New discovery may lead to new class of allergy drugs

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If you've ever wondered why some allergic reactions progress quickly and may even become fatal, a new research report published in the February 2009 issue of the *Journal of Leukocyte Biology* provides an important part of the answer. In the report, scientists from Queen's University of Belfast, University of Oxford and Trinity College Dublin show for the first time that eotaxin, a chemical that helps immune cells locate the site of infection, blocks basic "fighter" cells from transforming into "seeker" dendritic cells, resulting in a heightened allergic response.

"Our study reveals a new role for the chemokine eotaxin in controlling immune cell types at the site of allergic reaction," said Nigel Stevenson, a researcher involved in the study. "These findings are crucial for our understanding of allergic responses and may be instrumental for the design of new allergy drugs."

Stevenson and colleagues made this discovery by using immune cells grown in the lab and from healthy volunteers. Then the researchers mimicked what occurs during an allergic reaction by treating the cells with eotaxin, which was previously believed to only attract immune cells during an allergic reaction. Through a series of laboratory procedures, they tracked changes in immune cell type and found that eotaxin inhibits monocytes becoming dendritic cells (that find foreign invaders so other immune cells can neutralize them), resulting in more "fighter" cells being present during an allergic response. This discovery shows how and why eotaxin plays an important role in the severity of allergic reactions

and may be a target for an entirely new class of allergy medications.

"For some people, allergies are very serious often debilitating problem, forcing them to be extremely careful about what they breathe, touch, or eat," said E. John Wherry, Deputy Editor of the *Journal of Leukocyte Biology*. "The insights from this work on the unexpected role of eotaxin should provide novel therapeutic opportunities for intervention during diseases like asthma, food allergies and other situations where unchecked allergic responses cause problems."

According to the U.S. Centers for Disease Control and Prevention Allergies, more than 50 million Americans suffer from allergies each year. Allergies are the 6th leading cause of chronic illness in the U.S., costing more than \$18 billion. The most severe type of allergic reaction is called "anaphylaxis," which can be fatal.

Journal website: <http://www.jleukbio.org>

Source: Federation of American Societies for Experimental Biology

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