DIR RESEARCH UPDATE

Finding the molecular links between house dust and asthma

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Allergic asthma is a debilitating disease, and its prevalence has been increasing over the last several decades. Currently, 12% of adults have been diagnosed with asthma at some point in their life and the annual cost of this disease in the U.S. is estimated at $60 billion. Inhaled corticosteroids have been the standard of care for asthma for many years, but not all asthmatics respond to this treatment, probably because allergic responses in the lung are heterogeneous and involve many different types of immune cells, including dendritic cells, airway epithelial cells, various types of T cells, neutrophils and eosinophils. This presentation will discuss how these various cell types respond to specific environmental stimuli and can trigger maladaptive responses that lead ultimately to allergic asthma. An improved understanding of these cells and the signaling pathways they comprise offers the potential for developing therapeutic strategies that target specific types of asthma, including steroid-resistant asthma. Such strategies might prevent or reverse the course of events that lead to asthma.