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Research Center for Allergy and Immunology

Laboratory for Signal Network

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New regulatory mechanism of allergic responses: Essential initial expression of memory-type T cells

In the rainy season, mold is raging. You would be suffering from mold allergy, for sure, if you say "I have a cough only among this time of year." There are many allergy causative substances such as house-dusts, food ingredients, and metals in accessories around us and, thus, many people are complaining, by saying "I feel itching and/or have a rash all the year around." Here you meet delighted news.

Laboratory for Signal Network in Research Center for Allergy and Immunology (RKAI) elucidated the allergy onset regulatory mechanism, in which memory-type T cells known as one of immune cells enhance the gene expression of interleukin-4 which functions as a signal transducer for internalization of strangers. The mechanism was supported by the finding that immuno-globulin-E (IgE) which is an antibody for allergic response was not expressed in the mutant mice without memory-type T cell gene. This implies that memory-type T cells are essential to allergic response.

Since the group has developed transgenic mice with fluorescent protein genes, further study on allergic response will provide better understanding of the genetic signal transduction and, eventually, offer novel strategies to counteract allergic immune diseases. We are marching toward the no-itching and no-rash days.

The research details are reported in *Immunity*, 24 (6) 689-701 (2006).

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