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Variant of the RANTES cytokine associated with asthma

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A polymorphism within the promoter region of the RANTES chemokine gene is associated with an increased risk of asthma and atopy, suggests a paper published in 11 December [Genes and Immunity](#) (*Genes Immun* 2000 1:509-514) by A.H. Hajeer and colleagues from the Universities of Manchester and Keele.

Genetic linkage analysis in families has previously identified an area on chromosome 17q11 that harbours a group of cytokines called C-C chemokines. Of these chemokines, RANTES (regulated upon activation, normally t-expressed, and presumably secreted) is essential for the attraction of memory T cells to the site of inflammation as well as for the release of histamine and prostaglandin D2 from basophils.

The authors identified a polymorphism within the promoter region of the RANTES gene (-403 G-A) on chromosome 17q11. Using a PCR-RFLP assay, they investigated the correlation between the presence of the -403A allele with results of skin prick tests, serum IgE levels and spirometric measurements in 201 Caucasian individuals.

The allele was found to be more common in atopic and asthmatic individuals when compared with normal controls. It was associated with skin test positivity but not with the IgE level. Homozygosity for the -403A allele conferred a 6.5 fold increase risk of moderate/severe airway obstruction.

These data suggest that association of the RANTES gene polymorphism with both atopy and asthma reflect independent effects. Dr Hajeer's hypotheses is that different mechanisms are involved for these cytokines in the development of atopy and airway obstruction.

References

1. *Genes and Immunity*, [<http://www.stockton-press.co.uk/gene/>]