

- 733** PREVALENCE OF SENSITIZATION TO TWO GERMAN COCKROACH (CR) ALLERGENS, *Bla g I* AND *Bla g II*. L. Vailes MS, S. Pollart MD and M. Chapman, Ph.D., Charlottesville, VA.

The prevalence of IgE antibodies to 2 German CR allergens, *Bla g I* and *Bla g II*, was investigated in 87 sera from CR allergic patients with a positive RAST (>40 units/ml) and/or skin test to commercial CR extract. Sera were analysed by monoclonal antibody based solid phase RIA for specific IgE ab to each allergen. Six patients were also tested for *in vivo* sensitivity to *Bla g I* and *Bla g II* by quantitative intradermal skin tests. Of the 87 patients, 27 (31%) had IgE ab to *Bla g I* and 55 (63%) had IgE ab to *Bla g II*. Ten sera from non-atopic controls had no detectable IgE ab to either allergen. Of 50 patients with a CR RAST >200 units/ml, the prevalence of IgE ab to *Bla g I* or *Bla g II* was 40% and 78%, respectively. Nine of these patients (CR RAST 200 - 2370 units/ml) had no detectable IgE to either *Bla g I* or *II*, suggesting that they recognize other CR allergens. By antigen binding RIA, IgG ab to *Bla g I* was detected in all sera with IgE ab. IgG ab to the American CR allergen *Per a I* was also detected, suggesting that these allergens are cross-reactive. Four patients gave positive skin tests to *Bla g I* with end point titers of 10-1 to 10-4 µg/ml and 5 patients gave +ve skin tests to 10-1 - 10-4 µg/ml *Bla g II*. Several patients showed exclusive sensitivity to either *Bla g I* or *Bla g II* by both skin testing and serum IgE ab assay. The results show that most CR allergic patients become sensitized to the *Blattella* specific allergen, *Bla g II*; that sensitivity to *Bla g I* is less common; and that German CR produce other important allergens.

- 734** ALLERGY TO COCKROACHES IS NOT AN IMPORTANT FACTOR IN ASTHMA AND RHINITIS IN NORTHERN ITALY

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The role of indoor allergens in allergic asthma and rhinitis is under investigation and sensitization to cockroach has been reported as a risk factor in USA and in France. In order to evaluate the frequency of skin sensitization and presence of specific IgE (sIgE) to *Blattella germanica* (Bg) we studied 84 consecutive asthmatic and/or rhinitic patients referred to our Allergy Center in Northern Italy. All patients were given a questionnaire and were submitted to prick tests and serum RAST with a panel of 10 common aeroallergens and with Bg. 8/84 patients (9.5%) had a slight cutaneous and/or RAST positivity to Bg, always associated, however, to skin and/or RAST positivity to pollens or house dust mite. 4 patients complained of symptoms of seasonal and 2 of perennial rhinitis, 1 of perennial asthma and 1 of perennial asthma and rhinitis. All 8 patients belonged to the social middle class and 5 of them spent most part of the day in indoor environment (home or office). In conclusion, from our data sensitization to cockroach does not seem an important factor in bronchial asthma and/or rhinitis in our area.

- 735** T CELL RESPONSES TO GROUP I AND II MITE ALLERGENS. R.M. O'Brien, MB,BS, PhD* and W.R. Thomas, PhD., Melbourne, Victoria and Perth, Western Australia

Proliferation assays were used to determine T cell responses to *Der p I*, *Der p II* and *Der f II*. Only patients allergic to mites showed responses with patients allergic to mites and pollen being higher than those allergic to mites alone. Cells from patients allergic to pollens alone and non allergics did not respond. This is in contrast to studies with extracts or partially purified allergens where cells from non allergics show responses of the same magnitude as cells from non allergics. The proliferation to *Der p I* and *Der p II* were well correlated with *Der p II* evoking a degree of stimulation similar to *Der p I*. Responses to *Der p II* and *Der f II* were, however, not always well correlated indicating a mechanism for patients to be preferentially sensitised to different epitopes of *D. farinae* and *D. pteronyssinus* or perhaps cross reactive epitopes on another species such as *E. maynei*. As well as providing insights into the mechanism of allergy these results may have important implications for the species of mite used in immunotherapy.

- 736** SEQUENCE POLYMORPHISM OF *Amb a I* AND *Amb a II*, THE MAJOR ALLERGENS IN SHORT RAGWEED. I.J. Griffith, Ph.D., J. Pollock, M.S., B.L. Rogers, Ph.D. and A. Nault, B.S., Cambridge, MA.

Short ragweed (*Ambrosia artemisiifolia*) is perhaps the major clinical cause of seasonal pollen allergy in North America. Two of the major allergens in the pollen of short ragweed are *Amb a I* and *Amb a II*. At least 95% and 50% of ragweed allergic patients have IgE that binds with *Amb a I* and *Amb a II*, respectively. The gene for *Amb a II* has recently been cloned (B.L. Rogers et al., submitted). The genes for *Amb a I* have also been cloned (Rafnar et al., J. Biol. Chem., in press) and shown to encode a family of related proteins. Three *Amb a I* family members, designated *Amb a I.1*, *Amb a I.2* and *Amb a I.3*, have been identified. Comparison of several independent *Amb a I.3* clones showed that this *Amb a I* protein is polymorphic.

Large regional differences in the expression of *Amb a I* or *Amb a II* could affect the development of ragweed allergies and alter the design or outcome of immunotherapy. Therefore it becomes important to know the number of individual *Amb a I* and *Amb a II* family members, the polymorphism in each family member, and whether there is a plant or geographical variation in expression of these genes. This study was undertaken to answer these questions.

We found using a PCR analysis of mRNA that a single plant can co-express multiple *Amb a I* and *Amb a II* genes as well as express polymorphic forms of a given gene. Further, each *Amb a I* family member could be expressed in mRNA from both flowers and pollen. In contrast, mRNA for *Amb a II* was found in flowers, but not pollen. This work also lead to the identification of a fourth *Amb a I* family member, *Amb a I.4*, that was most closely related to *Amb a I.1*.