

Allergens of German Cockroach in Korea ; Characterization and Identification of Allergenic Components
Kyu-Earn Kim, M.D.

Department of Pediatrics
Yonsei University College of
Medicine, Seoul, Korea

Cockroach is one of the major indoor allergens and an important cause of allergic diseases. To identify the allergens of German cockroach which is the most common species in Korea, we performed this study and the results are as follows ;

Two fractions (CR-FI, CR-FII) have been isolated from crude extract (CR-A) of German cockroach with chromatography.

The CR-A, CR-FI and CR-FII were demonstrated 13, 7 and 1 allergenic components respectively by immunoblotting. The 64 KD component was strongly bound to the sera of patients.

To identify the major allergens of German cockroach, we performed the IgE-immunoblot, FAST to CR-A, and two-site-ELISA with monoclonal antibodies to Bla g 1 and Bla g 2 in nine cases. Although cockroach specific IgE was detected in 6 of 9 cases, Bla g 1 and Bla g 2 specific IgE were revealed in all cases.

We identified at least 15 IgE binding protein bands. The 55-67% of tested sera were reacted with 76, 64, 50, 38, 23-25 and less than 14 KD among these IgE binding proteins.

Thereafter we studied on the immunologic cross reactivity among German cockroach, shrimp and crab. The cross reactivity between shrimp and crab was remarkable, but it was not remarkable between cockroach and shrimp or crab.

In conclusion the 76, 64, 50, 38, 23-25 and less than 14 KD proteins would be the major allergens of German cockroach in Korean children. Thus the components of relatively high molecular weight other than Bla g 1 and Bla g 2 may be important allergens of German cockroach.