Pru p 7 is a major peach allergen in patients from Southern France

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Aim: To assess frequency and magnitude of IgE sensitization to Pru p 7 sIgE in patients complaining of peach allergy.

Methods: Sera from 117 outpatients (median age 20 years, range 4 – 74; 44% males) having undergone sIgE work-up for peach extract and commercial component-resolved diagnostics (ImmunoCAP 250, Thermo Fisher Scientific, Uppsala, Sweden) between February 2012 and June 2016 were assayed for sIgE to recombinant Pru p 7. The positivity threshold was set at 0.10 kUA/L.

Results: Of the 117 patient sera analysed, 111 (95%) tested positive to peach extract, 73 of which (66%) displayed sIgE reactivity to rPru p 7. In 45/68 (66%) cases, sIgE reactivity to Pru p 7 was isolated (no detection of sIgE to rPru p 1, rPru p 3, or rPru p 4). Among the 6 peach negative sera, one was found positive to rPru p 7 (0.81 kUA/L). Quantitative analysis showed that levels of sIgE in the study population were higher to Pru p 7 than to peach extract (median 5.5 versus 1.3 kUA/L, range 0.10 to 30.7 versus 0.10 to 52.4, p = 0.003, coefficient of correlation -0.12). 38/111 (32%) sera with detectable sIgE to peach extract did not display sIgE to rPru p 7, and 3 of these sera (peach sIgE 0.18 to 0.20 kUA/L) did not display sIgE to any of rPru p 1, rPru p 3, or rPru p 4, or MUXF3.

Discussion: Pru p 7 has been reported as a major allergen in peach allergic patients from Spain and Italy, and Pru p 7 sensitization appears to correlate with a specific clinical presentation in Japanese patients. Here, we bring evidence that Pru p 7 is a major allergen in peach-sensitized patients from Southern France, including those with low sIgE to peach extract and seemingly independent of sIgE reactivity to peach components currently available for diagnostic testing. Significant association with cypress pollinosis and severe peach-induced allergy have been observed in rPru p 7 sensitized patients.

Conclusion: Pru p 7 is needed for comprehensive component-resolved diagnostics of peach allergy in Mediterranean patients. Pru p 7 sensitization may be a prognostic factor of peach allergy severity. From a pathophysiological perspective, Pru p 7 may shed light on the as-yet obscure relationship between peach and cypress pollen allergy in the Mediterranean region.