**Comparison of two multiplex arrays in the diagnosis of patients with allergy**

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*Background*: Diagnosis of type I allergy is based on the medical history, provocation testing and in vitro diagnostic tests. Currently, molecular allergy diagnostics are using in clinical routine, and many allergenic molecules are available for in-vitro specific immunoglobulin E testing which can be performed on singleplex or multiplex measurement platforms. Multiplex arrays-based testing performed with a small amount of serum sample enables clinicians to determine specific-IgE (sIgE) antibodies against multiple recombinants or purified natural allergen components.

 *Objective*: To compare the multiplex ImmunoCAP ISAC (Thermo Fisher Scientific, Sweden) and the multiplex Alex Allergy Explorer (Macro Array Diagnostics GmbH, Austria) platform on sIgE to grass pollen (Phl p1, Phl p5), tree pollen (Bet v1), house dust mites (Der p1, Der p2), cat (Fel d1) and weed (Art v1) allergens in allergic patients.

*Method*: Serum samples from 200 patients were analyzed for specific IgE to allergenic molecules included in the ISAC panel and the Alex panel. The results for the multiplex assays were analyzed.

*Results*: Comparison of allergenic components by ISAC and Alex arrays revealed the following correlation coefficients: 0,94 (Bet v1), 0,94 (Phl p1), 0,93 (Phl p5), 0,94 (Der p1), 0,92 (Der p2), 0,91 (Fel d1), and 0,61 (Art v1).

 *Conclusion*: A good correlation of presently used methods to detect serum sIgE was observed. Multiplex testing of allergen-speciﬁc IgE can be the method of choice for a prospective component-resolved diagnosis of type I allergy, and the basis for the design and monitoring of a patient-tailored specific therapy.