

Correspondence

To get lost in the laboratory when the clinical light is off

To the Editor:

In their article on molecular profiles of IgE to *Phleum pratense* in children with grass pollen allergy, Tripodi et al,¹ analyzing the sera from 176 children sensitized to grass and using a *Phleum pratense* extract, detected 39 profiles of sensitization to the 8 allergenic molecules tested. On the basis of matching the IgE profiles with the only molecular preparation thus far developed, containing Phl p 1, Phl p 2, Phl p 5a, Phl p 5b, and Phl p 6,² they found that only 4% of the patients perfectly matched such predefined preparation, while the remaining 96% showed 4 mismatches that the authors defined “underpowered immunization,” “overpowered immunization,” mixed (with both the mismatches), and “unrelated immunization.” In the conclusion, the authors hope that their findings might lead to trials to test whether different sensitization profiles underlie different clinical responses to the same allergen preparation for immunotherapy.

This point of view can hardly be shared on the basis of general knowledge considerations. First, IgE sensitization to the naturally occurring allergens from grass pollen (as to any other allergen source) is an individual process, driven by the interaction between the patient-related genetic background and the environment-related allergen exposure; because there are several allergenic molecules able to elicit an IgE response, the number of combinations is high, and should be even higher if not only a single grass (as done by Tripodi et al) but also different grasses are used to analyze the IgE profile. Second, the entering of the allergens by a route different from the natural exposure, that is, by allergen immunotherapy, has the recognized capacity to elicit a different immune response, characterized by an ongoing tolerance to the administered allergens.³ Actually, the perfect match is to use an allergen extract containing all the allergens occurring in the natural source, provided the extract is correctly standardized. The possibility that an

allergen present in the extract for immunotherapy and previously not eliciting an IgE response may induce a new sensitization (ie, the mismatch defined as “overpowered immunization”) has scant data in favor and thus seems more hypothetical than real. Still, the major issue against the analysis by Tripodi et al is provided by the results of the study on the predefined allergen preparation they used to match the IgE profiles: such preparation showed excellent clinical results, with a 36.5% lower median average symptom score for active treatment compared with placebo,² which is quite better than the 4% of matching resulting from the laboratory model. Moreover, some patients were not sensitized to Phl p 5 but nevertheless developed strong IgG response to such allergen.

Francesco Marcucci, MD^a

Cristoforo Incorvaia, MD^b

Erminia Ridolo, MD^c

Franco Frati, MD^{a,d}

From ^aSpin-Off ATRP Srl, Allergic Tests Research and Production, Perugia, Italy; ^bAllergy/Pulmonary Rehabilitation, ICP Hospital, Milan, Italy; ^cUniversity Department of Clinical Sciences, Parma, Italy; and ^dMedical and Scientific Department, Stallergenes, Milan, Italy. E-mail: cristoforo.incorvaia@gmail.com.

Disclosure of potential conflict of interest: C. Incorvaia and F. Marcucci have consultancy arrangements with Stallergenes Italy. F. Frati is the Director of Medical and Scientific Department of Stallergenes Italy. E. Ridolo declares that she has no relevant conflicts of interest.

REFERENCES

1. Tripodi S, Frediani T, Lucarelli S, Macri F, Pingitore G, Di Rienzo Businco A, et al. Molecular profiles of IgE to *Phleum pratense* in children with grass pollen allergy: implications for specific immunotherapy. *J Allergy Clin Immunol* 2012;129:834-9.
2. Jutel M, Jaeger L, Suck R, Meyer H, Fiebig H, Cromwell O. Allergen-specific immunotherapy with recombinant grass pollen allergens. *J Allergy Clin Immunol* 2005;116:608-13.
3. Akdis CA, Akdis M. Mechanisms of allergen-specific immunotherapy. *J Allergy Clin Immunol* 2011;127:18-27.

<http://dx.doi.org/10.1016/j.jaci.2012.08.041>