

# Correspondence

## COMPARING SPECIFIC IgE VALUES OF 2 DIFFERENT ASSAYS

**To the Editor:** We read with great interest and some dismay the recent article by Hamilton et al<sup>1</sup> entitled "Extension of Food Allergen Specific IgE Ranges From the ImmunoCAP to the IMMULITE Systems," which compared 2 assay systems for quantitation of specific IgE (sIgE) antibodies. This topic is important because numerous clinically validated articles have been published using the ImmunoCAP system, establishing relationships between sIgE antibody concentrations and clinical manifestations.<sup>2-4</sup> The authors' supposition is that sIgE antibody concentrations determined with the IMMULITE assay system can be used with adjustments in a similar manner. Their data and those of a number of other studies do not support this proposition.

In the article, the idea that these 2 different assays are comparable was supported by log-log plots of serum samples run on both systems. The problem here is that log-log plots hide discrepancies, particularly in the higher ranges. In addition, figures 4, 5, and 6 demonstrate very large differences between the assay results and poor correlation (if any). In fact, all the ratios of results shown demonstrate that the IMMULITE system consistently overestimates sIgE levels. Others have published similar findings with these and different allergens with the conclusion that these 2 assays simply do not give comparable results.<sup>5,6</sup>

The use of mean differences in the ratio of results is also misleading because this approach underestimates these comparisons and does not take into consideration variability among individual measurements. In addition, the patients who passed or failed challenge tests with peanut (as shown in figure 7) were indistinguishable

because these patients all had low values of sIgE and thus represent a poor population sample for quantitative comparisons.

The authors conclude that the differences between these systems are "definable and modest." However, rather than a defined relationship between quantitative data generated by IMMULITE and ImmunoCAP, the IMMULITE:ImmunoCAP ratio differs more than 10-fold among different individual patients. This is not a modest difference. Hence, an arithmetic translation of data from one system to predict results with the other system, using a population-based conversion factor, cannot be made for individual patients.

We conclude from these data and those of others that the use of the IMMULITE values by themselves would most certainly result in an overestimation of sIgE levels and that the interpretation of allergen sIgE antibody levels with respect to likelihood of clinical disease must be based on a relationship established with the same assay.

P. BROCK WILLIAMS, PhD\*  
JAY PORTNOY, MD\*

\*Children's Mercy Hospital  
Kansas City, Missouri  
pbrockwil@aol.com

1. Hamilton RG, Mudd K, White MA, Wood RA. Extension of food allergen specific IgE ranges from the ImmunoCAP to the IMMULITE systems. *Ann Allergy Asthma Immunol.* 2011;107:139-144.
2. Sampson HA. Utility of food-specific IgE concentrations in predicting symptomatic food allergy. *J Allergy Clin Immunol.* 2001;107:891-896.
3. Shek LP, Soderstrom L, Ahlstedt S, Murray CS, Woodcock A, Custovic A. Determination of food specific IgE levels over time can predict the development of tolerance in cow's milk and hen's egg allergy. *J Allergy Clin Immunol.* 2004;114:387-391.
4. Wichman M, Lilja G, Soderstrom L, van Hage-Hamsten M, Ahlstedt S. Quantitative analysis of IgE antibodies to food and inhalant allergens in 4-year-old children reflects their likelihood of allergic disease. *Allergy.* 2005;60:650-657.
5. Wood RA, Segall N, Ahlstedt S, Williams PB. Accuracy of IgE antibody laboratory results. *Ann Allergy Asthma Immunol.* 2007;99:34-41.
6. Wang J, Godbold JH, Sampson HA. Correlation of serum allergy (IgE) tests performed by different assay systems. *J Allergy Clin Immunol.* 2008;121:1219-1224.

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