



Choosing IMMULITE® 2000 Allergy: A Customer Perspective

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The Regional Immunology Service was a confirmed Pharmacia user for more than 20 years, until it switched to DPC's IMMULITE® 2000 Allergy. The system was selected after many months of exhaustive information gathering and system performance evaluations. Its features such as complete random access automation and proven reliability offered the promise of increased productivity and streamlined workflow. Equally critical were the results of in-house evaluation studies, which determined that both IMMULITE 2000 Allergy and UniCAP® provided comparable analytical performance.

Regional Immunology Service

Located at the Royal Victoria Hospital of Belfast, Regional Immunology Service is the only laboratory that conducts allergy and immunology testing in Northern Ireland. In addition to its laboratory services for autoimmune serology, allergy, immunochemistry and cellular immunology, the facility also provides clinical immunology services for the region.

Regional Immunology Service was recently ranked second highest in volume for allergy testing out of 28 major UK immunology laboratories.

A Question of Value: Researching New Systems

Prior to changing from Pharmacia to DPC's IMMULITE 2000 Allergy, the laboratory had been satisfied with its four UniCAP systems. Reagent quality was good and quality control results for total and allergen-specific IgE (UK NEQAS) typically reported a mean running bias index score (MRBIS) at a respectable level of accuracy. Why, then, did Regional Immunology Service switch to IMMULITE 2000 Allergy? After hospital accountants conducted a cost analysis of the laboratory's allergy testing, questions arose as to whether the existing instruments were providing the best value on the market. Consequently, the laboratory administrators were asked to research other methods.

Administrators and staff spent nine months determining the service requirements of the laboratory and evaluating other systems. The following were established as particularly desirable system features:

- Reliable system with a track record
- Automation
- Two-way computer interface
- Cost benefits

Information was gathered by contacting manufacturers, visiting installations and consulting personal contacts. Eventually, performance evaluations were conducted through in-house systems testing.

Evaluating IMMULITE 2000 Allergy

Results obtained from the IMMULITE 2000 Allergy evaluation demonstrated comparable analytical performance against UniCAP. A regression analysis revealed excellent correlation for total IgE concentrations, with a correlation coefficient of 0.98.

UniCAP vs. IMMULITE 2000: Total IgE Correlation

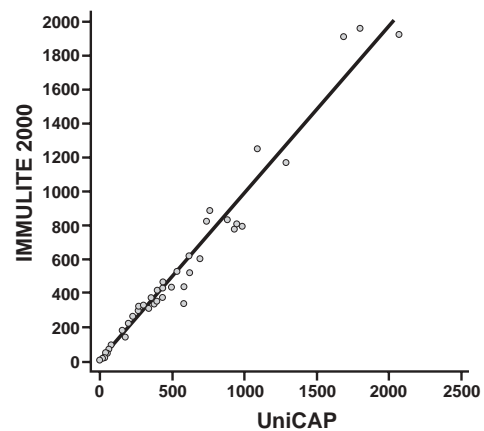


Figure 1.

Inter- and intraassay precision results (%CV) for total IgE were also within acceptable limits.

UniCAP vs. IMMULITE 2000: Total IgE Precision (%CV)

	UniCAP		IMMULITE 2000	
	Interassay	Intraassay	Interassay	Intraassay
Low	3	3	3.9	4.1
Medium	4.8	3	4.1	4.6
High	6.9	4.6	6.7	6.9

Table 1.

Total IgE recovery experiments for dilutions of 1:5, 1:10 and 1:20 produced very good results (Table 2).

UniCAP vs. IMMULITE 2000: Total IgE Recoveries

UniCAP			
Dilution	Observed	Calculated	Recovery
Neat	4803		
1:5	754	3770	78%
1:10	473	4730	98%
1:20	190	3800	79%

IMMULITE 2000			
Dilution	Observed	Calculated	Recovery
Neat	4803		
1:5	944	4722	98%
1:10	502	5020	105%
1:20	261	5214	109%

Table 2.

In addition, a specific IgE concordance study demonstrated very good analytical concordance for such allergens as house dust mite, grass mix, cat, wasp, bee, food mix, nut mix, egg and peanut. During this study, which was conducted in early 2003, the concordance result for milk was unfavorable; however, the milk allergen was undergoing review at that time and has since been reformulated.

Choosing IMMULITE 2000 Allergy: First Impressions and Future Expectations

Ultimately, the laboratory chose to replace its existing system, and Royal Victoria Hospital of Belfast became the first IMMULITE 2000 Allergy placement site in Ireland. Regional Immunology Service found the system installation to be very straightforward. The instrument was up and running almost immediately, with minimal disruption to laboratory service. IMMULITE 2000 Allergy was initiated into routine use within two days, and prior to the primary operator having attended the training course. In addition, the laboratory was impressed with the operator training, and noted that it received excellent support from DPC at all times.

Regional Immunology Service was encouraged to pilot an activity-based costing program, called Cost Xplorer, to evaluate the impact of the instrumentation changes. This database software essentially translates overhead and fixed costs into productivity data, placing a greater emphasis on operational performance, rather than on financial figures. The utility of this type of program has grown significantly, particularly as laboratory medicine in the UK has moved away from financial cost

benefits in recent years to become more focused on issues of operational quality and efficiency.

One week after installation, Cost Xplorer was used to conduct an activity-based costing evaluation comparing IMMULITE 2000 Allergy to the previously used instrumentation. Productivity increases that occurred during the previous week included the following:

- Consumables preparation reduced by 132 minutes
- Quality management reduced by 39 minutes owing to the on-board QC program
- Sample log-in time reduced by 101 minutes.

As the evaluation was performed before the main operator had attended the system training and prior to the interfacing of the instrument to the laboratory computer system, subsequent evaluations are expected to document significant increases in time and cost benefits beyond those already observed.

The laboratory has high future expectations of IMMULITE 2000 Allergy, which promises reliability and performance, streamlined workflow to relieve staffing pressures, and plenty of cost benefits.