

K962976

Pharmacia & Upjohn

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VIII. SUMMARY OF SAFETY AND EFFECTIVENESS

This summary of safety and effectiveness information is being submitted in accordance with the requirements of The Safe Medical Devices Act of 1990 (SMDA 1990) and 21 CFR Part 807.92.

DATE OF SUMMARY PREPARATION: July 24, 1996

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Device Name: Pharmacia CAP System RAST[®] FEIA
(Allergen ImmunoCAP k82, Latex)

Common or Usual Name: Fluorescence Enzyme Immunoassay
(Allergen for detection of IgE Specific
antibodies, latex)

Classification: Class II device

Substantially Equivalent to: The clinical diagnosis of latex allergy
and
AlaSTAT[®] Microplate Latex-Specific
Diagnostic Products Corporation
5700 West 96th Street
Los Angeles, CA 90045

K953014

VII. SUMMARY OF SAFETY AND EFFECTIVENESS (continued)

Intended Use: Pharmacia CAP System RAST^R FEIA is an *in vitro* test which measures the concentration of circulating allergen specific IgE in human blood samples.

For *in vitro* Diagnostic Use Only.

The Specific Allergen in this submission is k82, Latex, which is an additional allergen being added to the Pharmacia CAP System RAST FEIA.

Summary and Explanation of the Test:

Since 1967, when the first assays for serum immunoglobulin E and allergen specific IgE antibodies in serum were described, these measurements have become well established components of the investigation of allergic patients. Pharmacia CAP System RAST FEIA is an *in vitro* test system, based on ImmunoCAP technology for determination of circulating specific IgE antibodies.

Principle of the Assay:

The allergen of interest (Latex), covalently coupled to ImmunoCAP, reacts with the specific IgE in the patient serum specimen. After washing away non-specific IgE, enzyme labeled antibodies against IgE are added to form a complex. Anti-IgE raised in rabbits and labeled with Beta-galactosidase is the enzyme system used. After incubation, unbound enzyme anti-IgE is washed away and the bound complex is then incubated with the developing agent, 4-methylumbelliferyl- β -D-galactoside. After stopping the reaction with 4% sodium carbonate, the fluorescence of the eluate is measured in the Fluorcount 96 according to the User Manual for the instrument. The higher the fluorescence value, the greater the quantity of specific IgE present in the specimen. To classify test results, fluorescence (FU) of patient samples are compared directly with FU for the standards run in parallel.

VII. SUMMARY OF SAFETY AND EFFECTIVENESS (continued)

Specific Performance Characteristics:

Summary of Clinical Studies:

Serum samples from a total of 207 patients from three clinical sites were tested by Pharmacia CAP System RAST FEIA, Allergen ImmunoCAP k82, Latex. One hundred and eleven (111) of these patients were diagnosed as clinically allergic to latex and had a positive latex skin test, while the remaining 96 patients were clinically negative and had negative latex skin test. All samples were also tested in parallel by a predicate, 510(k) cleared, commercially available, latex specific IgE assay.

Overall, the Pharmacia Allergen ImmunoCAP k82 Latex demonstrates a clinical sensitivity of 74.8% (95% Confidence Interval: 63.5 - 83.2%) and a clinical specificity of 93.8% (95% Confidence Interval: 86.4 - 97.7%). The total agreement with clinical diagnosis and latex skin test on these patient sera is 83.6% (95% Confidence Interval: 77.1 - 88.6%) Table 1. These numbers demonstrate that the Pharmacia Allergen ImmunoCAP k82 Latex has an excellent clinical performance when compare to the clinical diagnosis and *in vivo* skin testing. In addition, the Pharmacia Allergen ImmunoCAP k82 Latex in comparison studies is equivalent to the predicate device. Table 2 shows the relative clinical sensitivity and specificity of the Pharmacia Allergen ImmunoCAP k82 Latex and the predicate device, IgE specific latex assay.

Table 1
Pharmacia Allergen ImmunoCAP k82 Latex
and Predicate Latex-Specific IgE Assay vs clinically diagnosis^{a,b}
N = 207

Clinical Diagnosis/ Skin Test	Pharmacia Allergen ImmunoCAP k82 Latex				Predicate Device Latex-specific Assay				
	Pos.	Neg.	Clinical Sensitivity	Clinical Specificity	Pos.	Neg.	Clinical Sensitivity	Clinical Specificity	
Positive	83	28	<u>74.8%</u>		77	34	<u>69.4%</u>		
Negative	6	90		<u>93.8%</u>	6	90		<u>93.8%</u>	
Agreement: 83.6%				Agreement: 80.7%					
95% Confidence Intervals:									
Sensitivity:	63.5 - 83.2%			57.2 - 78.8%					
Specificity:	86.4 - 97.7%			86.4 - 97.7%					
Agreement:	77.1 - 88.6%			73.7 - 86.2%					

a = Clinical Diagnosis as defined by clinical history and latex skin test results

b = Data on file at Pharmacia and Upjohn

VII. SUMMARY OF SAFETY AND EFFECTIVENESS (continued)**Specific Performance Characteristics:****Summary of Clinical Studies:**

Table 2

Comparison of Pharmacia Allergen ImmunoCAP k82 Latex with a 510(k) cleared latex-specific assay (predicate device) on 207 clinically characterized patient samples.

Predicate Device	<u>Pharmacia Allergen ImmunoCAP k82 Latex</u>	
	Positive	Negative
Positive	76	7
Negative	13	111

	<u>95% Confidence Interval</u>	
Overall Agreement:	90.3%	85.1 - 94.1%
Relative Sensitivity:	91.6%	82.6 - 96.6%
Relative Specificity:	89.5%	82.1 - 94.4%

Precision:

To determine the reproducibility (precision) of Pharmacia Allergen ImmunoCAP k82 Latex, two positive control samples (concentrations: 3.5 kUA/L and 7.6 kUA/L) and a negative control sample were tested in duplicate, twice (two runs) per day, for three days.

The calculated intraassay (within-run) variation was 3.7 - 4.6%, the interassay (between-run within day) variation was 5.6 - 6.1% and the lot-to-lot variation was 5.0 - 7.6%. The within-run variation and between-run variation were within the ranges of 7 - 10% and 6 - 9%, respectively, specified in the Directions for Use for Pharmacia CAP System RAST[®] FEIA.