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*PAML Offers Latest Technology for Allergen-Specific IgE Testing*

## ImmunoCAP: A Major Advance in Diagnosis and Treatment of Allergy

*Lawrence M. Killingsworth, Ph.D., DABCC, Chief Science & Technical Officer*

LABORATORY TESTS for allergen-specific IgE have been available for almost thirty years. The first analytical technique, known as RAST, enabled physicians to assess allergy status by a blood test, rather than through skin testing. Although widely used, RAST testing had limitations that made it less than ideal as a clinical tool. Recently, the RAST test has been replaced by ImmunoCAP,<sup>™</sup> a new technology with markedly improved clinical sensitivity and specificity. Beginning in January 28, 2002, PAML will offer ImmunoCAP testing for a wide range of allergens.

### Current Trends in Allergy Testing

*Rising Rates of Allergy and Asthma.* Allergy is on the rise in the United States. The latest survey by the American College of Allergy, Asthma and Immunology found that almost 40% of Americans suffer from allergies – twice as many as experts previously thought. Up to 20% of patients with allergies go on to develop asthma. Proper diagnosis and treatment requires better and more widely-available testing methods.

*Consumer-Driven Health Care.* The American public is more aware of health issues, and individuals are taking a more active role in their own health care. This activist mindset, coupled with heavy advertising for allergy-related drugs such as Claritin,<sup>™</sup> Allegra,<sup>™</sup> and Zyrtec,<sup>™</sup> has led patient/consumers to demand that their physicians prescribe allergy medication. A recent study, however, showed that only about 30% of patients who presented with upper respiratory symptoms and believed they were allergic, were actually suffering from allergies. “Test before you treat” was the theme of several articles in the national press on this subject. Specific allergen testing not only makes for good medical practice by prescribing anti-allergy drugs only for those patients who are allergic, but it could also help to reduce the cost of medical care.

### Applications for ImmunoCAP Testing

*Primary Care.* ImmunoCAP can be a powerful tool for the primary care physician in evaluating patients who present with rhinitis, sinusitis, or other allergic symptoms. When added to the traditional methods of history and physical exam, ImmunoCAP can add objective data on specific sensitivities for either drug therapy or allergen avoidance. ImmunoCAP also offers solid evidence to rule out allergy. A flow diagram for upper respiratory disease management that incorporates specific allergen testing is included with this Test Update.

*Asthma.* Asthma overlaps many medical specialties. Primary care physicians, allergy specialists, and managed care organizations all have an interest in controlling the morbidity associated with the disease and controlling the costs of treatment. Asthma treatment guidelines from the NIH state that clinicians should “identify allergen exposures.” The use of ImmunoCAP, a well-standardized and reproducible blood assay, allows clinicians to meet this standard of care with relative ease.

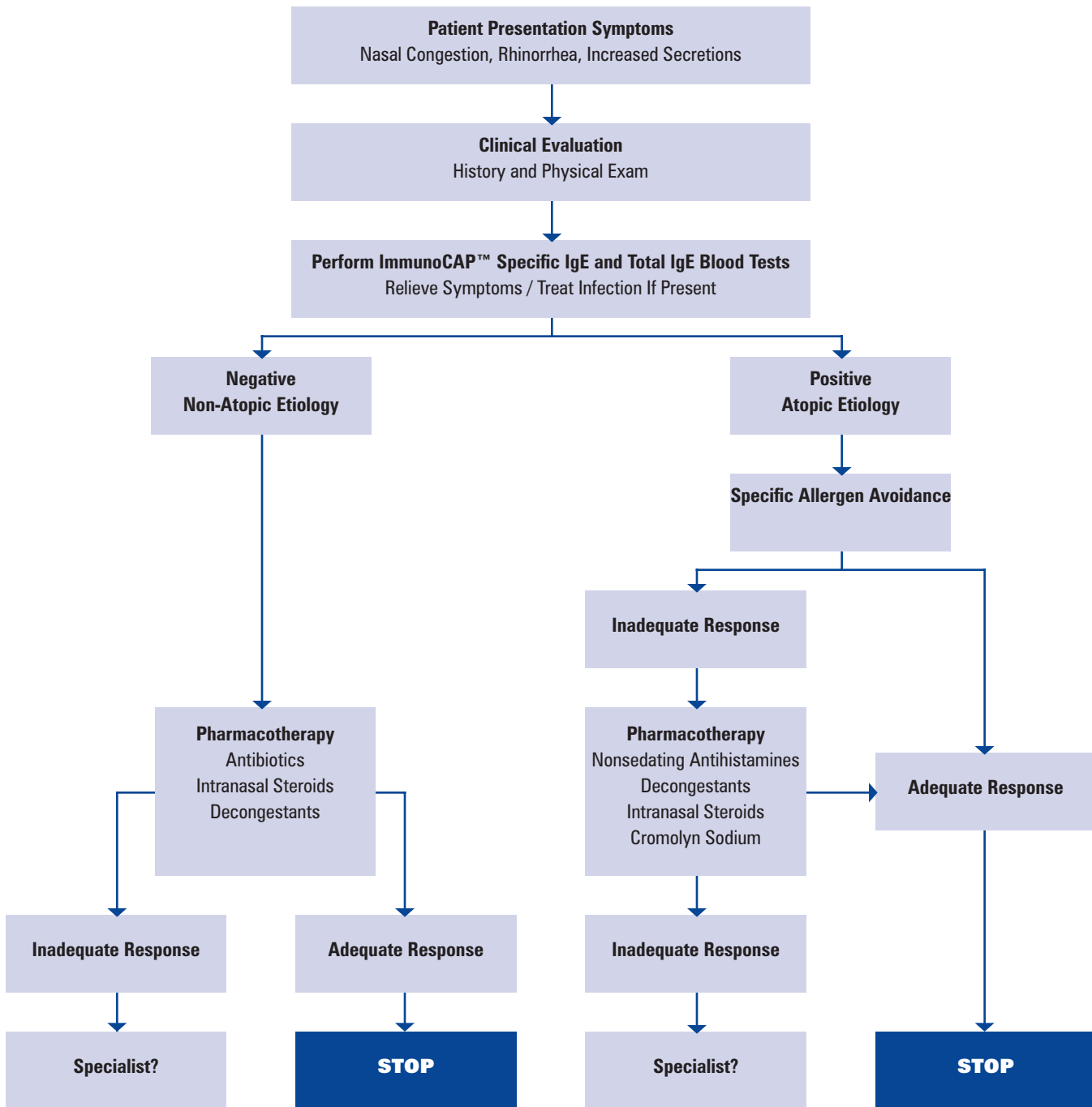
As shown on the following pages, PAML offers a broad menu of panels aimed at ruling in or ruling out specific allergies as the cause of a patient’s symptoms. Individual allergens can also be ordered from the wide range available. Physicians may “mix and match” any combination that meets their needs for an individual patient.

### FAST FACTS

#### ImmunoCAP and Allergy Testing

- ▶ ImmunoCAP replaces outdated RAST testing.
- ▶ ImmunoCAP markedly improves clinical sensitivity and specificity of allergen-specific IgE testing.
- ▶ Almost 40% of Americans suffer from allergies.
- ▶ Up to 70% of patients being treated with allergy-related drugs are not allergic.
- ▶ PAML offers a broad menu of panels for common allergens.
- ▶ Physicians can order any combination of allergens to meet the needs of an individual patient.

# Upper Respiratory Disease Patient Management



## Selected References

1. Poon AW, et al. In vitro and skin testing for allergy: Comparable clinical utility and costs. *Am J Managed Care* 1998;4:969-85.
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3. Yunginger JW, et al. Quantitative IgE antibody assays in allergic diseases. *J Allergy Clin Immunol* 2000;105:1077-84.
4. Williams PB, et al. Analytic precision and accuracy of commercial immunoassays for specific IgE: Establishing a standard. *J Allergy Clin Immunol* 2000;105:1221-30.
5. Szeinbach SL, et al. Precision and accuracy of commercial laboratories' ability to classify positive and/or negative allergen-specific IgE results. *Ann Allergy, Asthma & Immunol* 2001;86:373-81.
6. Parker-Pope T. Little-Used Simple Blood Test Can Help Screen for Allergies. *The Wall Street Journal*. September 15, 2000.
7. Parker-Pope T. Many Treat Their Symptoms With Unnecessary Allergy Drugs. *The Wall Street Journal*. May 18, 2001.
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## Test Information

**DESCRIPTION ALLERGEN, SINGLE**  
(See accompanying list for specific single allergens.)

**METHOD FEIA**

**CPT CODE 86003**

**SPECIMEN 0.5 mL serum (red-top tube).** Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

**COMMENTS** *Minimum volume: 0.25 mL*

*Stability: 24 hours at room temperature, 1 week refrigerated, 1 year frozen.*

**SCHEDULE Monday – Friday**

**TURNAROUND 1-3 days**

**RANGES LT 0.35 kU/L**

**DESCRIPTION ALLERGEN BATTERIES**  
(See accompanying list for batteries and components.)

**METHOD FEIA**

**CPT CODE 86003 for each allergen, plus 82785 for accompanying IgE**

**SPECIMEN** Separate serum from cells and put in separate plastic tube. Store and transport refrigerated. (See individual batteries for volumes.)

**COMMENTS** *Stability: 24 hours at room temperature, 1 week refrigerated, 1 year frozen for allergens; 8 hours at room temperature, 1 week refrigerated, 6 months frozen for IgE.*

**SCHEDULE Monday – Friday**

**TURNAROUND 1-3 days**

**RANGES Allergens LT 0.35 kU/L**

<b>IgE</b>	0-11 months	1.4-52.3 IU/mL
	1-4 years	0.4-351.6
	5-10 years	0.5-393.0
	11-15 years	1.9-170.0
	16+ years	0.0-158.0

Minimum detectable concentration is 2.0 IU/mL.

## SINGLE ALLERGENS

CODE ALLERGEN

### DRUGS

ICDRP Allergen, Penicilloyl G IgE

### DUST MITES

ICDM2 Allergen, *D. farinae* (mite) IgE

ICDM1 Allergen, *D. pteronyssinus* (mite) IgE

### EPIDERMALS & ANIMAL PROTEINS

ICECE Allergen, Cat epithelium IgE

ICECD Allergen, Cow dander IgE

ICEDD Allergen, Dog dander IgE

ICEDE Allergen, Dog epithelium IgE

ICEGF Allergen, Goose feathers IgE

ICEHH Allergen, Horse dander IgE

### FOOD

ICFAL Allergen, Almond IgE

ICFAP Allergen, Apple IgE

ICFBN Allergen, Banana IgE

ICFBA Allergen, Barley IgE

ICFBF Allergen, Beef IgE

ICFBR Allergen, Broccoli IgE

ICFCA Allergen, Carrot IgE

ICFCS Allergen, Casein IgE

ICFCW Allergen, Cashew nut IgE

ICFCC Allergen, Cheese, cheddar type IgE

ICFMC Allergen, Cheese, mold type IgE

ICFCK Allergen, Chicken meat IgE

ICFCH Allergen, Chocolate/cacao IgE

ICFCI Allergen, Cinnamon IgE

ICFCL Allergen, Clam IgE

ICFCD Allergen, Codfish (whitefish) IgE

ICFCN Allergen, Corn (maize) IgE

ICFCM Allergen, Cows' milk IgE

ICFCR Allergen, Crab IgE

ICFEW Allergen, Egg white IgE

ICFEY Allergen, Egg yolk IgE

ICFEG Allergen, Egg (whole) IgE

ICFGA Allergen, Garlic IgE

ICFGT Allergen, Gluten IgE

ICFGR Allergen, Grape (raisin) IgE

ICFHZ Allergen, Hazel nut (filbert) IgE

ICFLE Allergen, Lettuce IgE

ICFLB Allergen, Lobster IgE

ICFML Allergen, Malt IgE

ICFMS Allergen, Mustard IgE

ICFOT Allergen, Oat IgE

ICFON Allergen, Onion IgE

ICFOG Allergen, Orange IgE

ICFOY Allergen, Oyster IgE

ICFGP Allergen, Pea, green IgE

ICFPN Allergen, Peanut IgE

ICFPR Allergen, Pear IgE

ICFPE Allergen, Pecan nut IgE

Continued

## SINGLE ALLERGENS continued

### CODE ALLERGENS

ICFPA	Allergen, Pineapple IgE
ICFPK	Allergen, Pork IgE
ICFPT	Allergen, Potato (white) IgE
ICFRC	Allergen, Rice IgE
ICFRY	Allergen, Rye IgE
ICFSA	Allergen, Salmon IgE
ICFSH	Allergen, Shrimp IgE
ICFSB	Allergen, Soybean IgE
ICFSP	Allergen, Spinach IgE
ICFST	Allergen, Strawberry IgE
ICFTM	Allergen, Tomato IgE
ICFTU	Allergen, Tuna IgE
ICFTR	Allergen, Turkey meat IgE
ICFWL	Allergen, Walnut IgE
ICFWM	Allergen, Watermelon/honeydew IgE
ICFWT	Allergen, Wheat IgE
ICFWB	Allergen, White/navy bean IgE
ICFBY	Allergen, Yeast (bakers' or brewers') IgE

### GRASSES

ICGBM	Allergen, Bermuda grass IgE
ICGBR	Allergen, Brome grass IgE
ICGJO	Allergen, Johnson grass IgE
ICGKB	Allergen, June (Kentucky blue) grass IgE
ICGMF	Allergen, Meadow fescue IgE
ICGCO	Allergen, Oat cultivated IgE
ICGOG	Allergen, Orchard grass (Cocksfoot) IgE
ICGPR	Allergen, Perennial rye grass IgE
ICGBG	Allergen, Redtop Bentgrass IgE
ICGSV	Allergen, Sweet vernal grass IgE
ICGTM	Allergen, Timothy grass IgE

### HOUSE DUST

ICHDG	Allergen, House dust (Greer) IgE
ICHDS	Allergen, House dust (Hollister-Steir) IgE

### INSECTS and VENOM

ICICR	Allergen, Cockroach IgE
ICIH B	Allergen, Honeybee venom IgE
ICIPW	Allergen, Paper wasp venom IgE
ICIWF	Allergen, White-faced hornet venom IgE
ICIFY	Allergen, Yellow-faced hornet venom IgE
ICIYJ	Allergen, Yellow jacket venom IgE

### OCCUPATIONAL

ICOLT	Allergen, Latex (Brazilian rubber tree) IgE
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### MOLDS

ICMAL	Allergen, <i>Alternaria tenuis</i> (alternata) IgE
ICMAF	Allergen, <i>Aspergillus fumigatus</i> IgE
ICMAN	Allergen, <i>Aspergillus niger</i> IgE
ICMPU	Allergen, <i>Aureobasidium pullulans</i> (Pullularia) IgE
ICMCA	Allergen, <i>Candida albicans</i> IgE
ICMCP	Allergen, <i>Cephalosporium acremonium</i> IgE

### CODE ALLERGENS

ICMCH	Allergen, <i>Cladosporium herbarum</i> IgE
ICMHL	Allergen, <i>Helminthosporium halodes</i> IgE
ICMMR	Allergen, <i>Mucor racemosus</i> IgE
ICMPN	Allergen, <i>Penicillium notatum</i> IgE

### TREES

ICTAC	Allergen, Acacia tree IgE
ICTAB	Allergen, American Beech tree IgE
ICTBR	Allergen, Birch tree IgE
ICTBE	Allergen, Box elder IgE
ICTCW	Allergen, Cottonwood IgE
ICTEL	Allergen, Elm tree IgE
ICTEU	Allergen, Eucalyptus (Gum) tree IgE
ICTAL	Allergen, Grey alder tree IgE
ICTHZ	Allergen, Hazel nut tree IgE
ICTRW	Allergen, Japanese cedar IgE
ICTSY	Allergen, Maple leaf sycamore tree IgE
ICTMC	Allergen, Mountain cedar (Juniper) tree IgE
ICTML	Allergen, Mulberry tree IgE
ICTOK	Allergen, Oak tree IgE
ICTOL	Allergen, Olive tree IgE
ICTPE	Allergen, Pecan (White hickory) tree IgE
ICTWL	Allergen, Walnut tree IgE
ICTWP	Allergen, White pine tree IgE

### WEEDS

ICWCB	Allergen, Cocklebur IgE
ICWEP	Allergen, English plantain (Ribwort) IgE
ICWFR	Allergen, False ragweed IgE
ICWGR	Allergen, Giant ragweed IgE
ICWGD	Allergen, Goldenrod IgE
ICWKO	Allergen, Kochia (Firebush) IgE
ICWLQ	Allergen, Lamb's quarters (Goosefoot) IgE
ICWME	Allergen, Marsh elder (Povertyweed) IgE
ICWMW	Allergen, Mugwort IgE
ICWNT	Allergen, Nettle IgE
ICWPG	Allergen, Pigweed IgE
ICWRT	Allergen, Russian thistle (Saltwort) IgE
ICWSC	Allergen, Scale (Lenscale) IgE
ICWSO	Allergen, Sheep sorrel (Yellow dock) IgE
ICWRG	Allergen, Short (common) ragweed IgE
ICWWR	Allergen, Western ragweed IgE
ICWSG	Allergen, Worm wood (Sagebrush) IgE

## BATTERIES

	CODE	ALLERGENS
	<b>SCRN32</b>	<b>ALLERGENS, 32 WITH IGE</b>
VOLUME	4 mL	Immunoglobulin E, Total
MINIMUM	2 mL	Allergen, <i>D. farinae</i> (mite) IgE
		Allergen, <i>D. pteronyssinus</i> (mite) IgE
		Allergen, Cat epithelium IgE
		Allergen, Dog dander IgE
		Allergen, Dog epithelium IgE
		Allergen, Goose feathers IgE
		Allergen, Horse dander IgE
		Allergen, Bermuda grass IgE
		Allergen, Johnson grass IgE
		Allergen, Perennial rye grass IgE
		Allergen, Timothy grass IgE
		Allergen, <i>Aspergillus fumigatus</i> IgE
		Allergen, <i>Alternaria tenuis</i> (alternata) IgE
		Allergen, <i>Cladosporium herbarum</i> IgE
		Allergen, <i>Cephalosporium acremonium</i> IgE
		Allergen, <i>Helminthosporium halodes</i> IgE
		Allergen, <i>Penicillium notatum</i> IgE
		Allergen, Acacia tree IgE
		Allergen, Elm tree IgE
		Allergen, Eucalyptus (Gum) tree IgE
		Allergen, Mulberry tree IgE
		Allergen, Oak tree IgE
		Allergen, Olive tree IgE
		Allergen, Maple leaf sycamore tree IgE
		Allergen, Walnut tree IgE
		Allergen, English plantain (Ribwort) IgE
		Allergen, Lamb's quarters (Goosefoot) IgE
		Allergen, Mugwort IgE
		Allergen, Pigweed IgE
		Allergen, Russian thistle (Saltwort) IgE
		Allergen, Sheep sorrel (Yellow dock) IgE
		Allergen, Western ragweed IgE

	CODE	ALLERGENS
	<b>SCRN37</b>	<b>ALLERGENS, 37 WITH IGE</b>
VOLUME	5 mL	Immunoglobulin E, Total
MINIMUM	2.5 mL	Allergen, <i>D. farinae</i> (mite) IgE
		Allergen, Cat epithelium IgE
		Allergen, Dog dander IgE
		Allergen, Dog epithelium IgE
		Allergen, Goose feathers IgE
		Allergen, Horse dander IgE
		Allergen, Yeast (bakers' or brewers') IgE
		Allergen, Cows' milk IgE
		Allergen, Corn (maize) IgE
		Allergen, Egg white IgE
		Allergen, Egg yolk IgE
		Allergen, Malt IgE
		Allergen, Peanut IgE
		Allergen, Soybean IgE
		Allergen, Tomato IgE
		Allergen, Wheat IgE
		Allergen, Bermuda grass IgE

	CODE	ALLERGENS
		Allergen, Johnson grass IgE
		Allergen, Perennial rye grass IgE
		Allergen, Timothy grass IgE
		Allergen, <i>Aspergillus fumigatus</i> IgE
		Allergen, <i>Alternaria tenuis</i> (alternata) IgE
		Allergen, <i>Cladosporium herbarum</i> IgE
		Allergen, <i>Cephalosporium acremonium</i> IgE
		Allergen, <i>Helminthosporium halodes</i> IgE
		Allergen, Elm tree IgE
		Allergen, Mulberry tree IgE
		Allergen, Oak tree IgE
		Allergen, Olive tree IgE
		Allergen, Maple leaf sycamore tree IgE
		Allergen, Walnut tree IgE
		Allergen, English plantain (Ribwort) IgE
		Allergen, Lamb's quarters (Goosefoot) IgE
		Allergen, Mugwort IgE
		Allergen, Pigweed IgE
		Allergen, Russian thistle (Saltwort) IgE
		Allergen, Western ragweed IgE

	CODE	ALLERGENS
	<b>ADFP23</b>	<b>ALLERGENS, ADULT FOOD PROFILE</b>
VOLUME	3 mL	Immunoglobulin E, Total
MINIMUM	1.5 mL	Allergen, Beef IgE
		Allergen, Yeast (bakers' or brewers') IgE
		Allergen, Codfish (whitefish) IgE
		Allergen, Chocolate/cacao IgE
		Allergen, Cinnamon IgE
		Allergen, Clam IgE
		Allergen, Cow's milk IgE
		Allergen, Corn (maize) IgE
		Allergen, Egg white IgE
		Allergen, Garlic IgE
		Allergen, Pea, green IgE
		Allergen, Mustard IgE
		Allergen, Orange IgE
		Allergen, Pork IgE
		Allergen, Peanut IgE
		Allergen, Potato (white) IgE
		Allergen, Rice IgE
		Allergen, Shrimp IgE
		Allergen, Soybean IgE
		Allergen, Tomato IgE
		Allergen, Tuna IgE
		Allergen, Walnut IgE
		Allergen, Wheat IgE

	CODE	ALLERGENS
	<b>FOOD 10</b>	<b>ALLERGENS, FOOD ALLERGY PROFILE</b>
VOLUME	2.5 mL	Immunoglobulin E, Total
MINIMUM	1.5 mL	Allergen, Egg white IgE
		Allergen, Cow's milk IgE
		Allergen, Codfish (whitefish) IgE
		Allergen, Wheat IgE
		Allergen, Corn (maize) IgE
		Allergen, Peanut IgE
		Allergen, Soybean IgE
		Allergen, Shrimp IgE
		Allergen, Walnut IgE
		Allergen, Clam IgE

Continued

**BATTERIES continued**

CODE ALLERGENS

**GRASS9 ALLERGENS, GRASS PROFILE**

VOLUME 1.5 mL Immunoglobulin E, Total  
 MINIMUM 0.75 mL Allergen, Redtop bentgrass IgE  
 Allergen, Bermuda grass IgE  
 Allergen, Brome grass IgE  
 Allergen, Meadow kentucky blue grass IgE  
 Allergen, Meadow fescue IgE  
 Allergen, Orchard grass IgE  
 Allergen, Perennial rye grass IgE  
 Allergen, Sweet vernal grass IgE  
 Allergen, Timothy grass IgE  
 Allergen, English plantain (Ribwort) IgE  
 Allergen, Lamb's quarters (Goosefoot) IgE

**VENOM5 ALLERGENS, HYMENOPTERA PANEL**

VOLUME 0.75 mL Immunoglobulin E, Total  
 MINIMUM 0.5 mL Allergen, Honeybee venom IgE  
 Allergen, Paper wasp venom IgE  
 Allergen, White-faced hornet venom IgE  
 Allergen, Yellow-faced hornet venom IgE  
 Allergen, Yellow jacket venom IgE

**INHAL9 ALLERGENS, INHALANT 9 WITH IGE**

VOLUME 1.5 mL Immunoglobulin E, Total  
 MINIMUM 0.75 mL Allergen, *D. farinae* (mite) IgE  
 Allergen, Cat epithelium IgE  
 Allergen, Dog epithelium IgE  
 Allergen, Perennial rye grass IgE  
 Allergen, *Alternaria tenuis* (alternata) IgE  
 Allergen, Elm tree IgE  
 Allergen, Olive tree IgE  
 Allergen, English plantain (Ribwort) IgE  
 Allergen, Short (Common) ragweed IgE

**INW17 ALLERGENS, INLAND NORTHWEST 17 WITH IGE**

VOLUME 3 mL Immunoglobulin E, Total  
 MINIMUM 1 mL Allergen, *D. farinae* (mite) IgE  
 Allergen, *D. pteronyssinus* (mite) IgE  
 Allergen, Cat dander IgE  
 Allergen, Dog dander IgE  
 Allergen, Redtop bentgrass IgE  
 Allergen, Cockroach IgE  
 Allergen, *Alternaria tenuis* (alternata) IgE  
 Allergen, *Aspergillus fumigatus* IgE  
 Allergen, *Cladosporium herbarum* IgE  
 Allergen, Grey alder tree IgE  
 Allergen, Box elder IgE  
 Allergen, Birch tree IgE  
 Allergen, Cottonwood IgE  
 Allergen, Oak tree IgE  
 Allergen, Mugwort IgE  
 Allergen, Pigweed IgE  
 Allergen, Russian thistle (Saltwort) IgE

CODE ALLERGENS

**IMW14 ALLERGENS, INTERMOUNTAIN WEST 14 WITH IGE**

VOLUME 2.5 mL Immunoglobulin E, Total  
 MINIMUM 1 mL Allergen, *D. farinae* (mite) IgE  
 Allergen, Cat epithelium IgE  
 Allergen, Dog dander IgE  
 Allergen, Redtop bentgrass IgE  
 Allergen, Bermuda grass IgE  
 Allergen, Cockroach IgE  
 Allergen, *Alternaria tenuis* (alternata) IgE  
 Allergen, Grey alder tree IgE  
 Allergen, Box elder IgE  
 Allergen, Birch tree IgE  
 Allergen, Cottonwood IgE  
 Allergen, Pigweed IgE  
 Allergen, Mugwort IgE  
 Allergen, Russian thistle (Saltwort) IgE

**MOLD5 ALLERGENS, MOLD PROFILE 5**

VOLUME 0.75 mL Immunoglobulin E, Total  
 MINIMUM 0.5 mL Allergen, *Alternaria tenuis* (alternata) IgE  
 Allergen, *Aspergillus fumigatus* IgE  
 Allergen, *Candida albicans* IgE  
 Allergen, *Cladosporium herbarum* IgE  
 Allergen, *Penicillium notatum* IgE

**NUT6 ALLERGENS, NUT PROFILE 6**

VOLUME 1 mL Immunoglobulin E, Total  
 MINIMUM 0.75 mL Allergen, Almond IgE  
 Allergen, Cashew IgE  
 Allergen, Hazelnut IgE  
 Allergen, Pecan IgE  
 Allergen, Peanut IgE  
 Allergen, Walnut IgE

**PNW14 ALLERGENS, PACIFIC NORTHWEST 14 WITH IGE**

VOLUME 2.5 mL Immunoglobulin E, Total  
 MINIMUM 1 mL Allergen, *D. pteronyssinus* (mite) IgE  
 Allergen, Cat dander IgE  
 Allergen, Cockroach IgE  
 Allergen, Dog dander IgE  
 Allergen, Timothy grass IgE  
 Allergen, *Alternaria tenuis* (alternata) IgE  
 Allergen, Grey alder tree IgE  
 Allergen, Box elder IgE  
 Allergen, Birch tree IgE  
 Allergen, Oak tree IgE  
 Allergen, Walnut tree IgE  
 Allergen, Pigweed IgE  
 Allergen, Russian thistle (Saltwort) IgE  
 Allergen, Western ragweed IgE



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