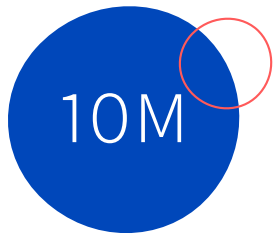


Stinging Insect Venom Allergen Component Testing

Enhance Patient Assessment With Stinging Insect Whole Allergen and Component Testing

Nearly 10 million people in the U.S. have a history of systemic anaphylactic reactions to insect stings.¹



Venom IgE Component Testing Offers Improved Diagnosis for Successful Immunotherapy

Venoms from the Hymenoptera order of insects—including bees, wasps (vespids), hornets and/or yellow jackets—may cause allergic reactions, including anaphylaxis, which can be severe and fatal.²

After an initial sting, a person’s immune system may respond by producing allergen-specific IgE (sIgE) antibodies which can trigger a more rapid inflammatory response if a subsequent sting occurs. This IgE response offers a quantifiable way to identify and understand the insect venom allergen to which a patient is reacting.^{2,3}

Up to 59% of venom patients test positive for both bee and wasp venom. Component-resolved diagnostic testing may improve specificity and lead to a more precise diagnosis that supports successful venom immunotherapy, minimizes side effects and lowers treatment costs.⁴


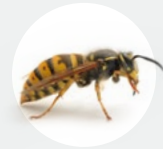

Stinging Insect Component-Specific IgE Testing Can Help Identify the Type of Sting

It’s common for patients to be uncertain as to which type of insect inflicted the sting, which makes component testing particularly important as it can:

- Discriminate between species specific sensitization and cross-reactivity⁵
- Identify culprit venom(s)^{5,6}
- Facilitate accurate prescription of venom immunotherapy (VIT)⁶

Distinguish Between Double Species Sensitization and Cross-Reactivity

Certain markers are specific for honey bee venom versus the common wasp:

| Honey Bee <i>Apis mellifera</i> | Yellow Jacket <i>Vespula vulgaris</i> | Paper Wasp <i>Polistes dominula</i> |
|---|--|---|
|  |  |  |
| Differentiating marker allergens | | |
| Api m 1 Phospholipase A2 | | Ves v 1 Phospholipase A1 |
| Api m 3 Acid phosphatase | | Ves v 5 Antigen 5 |
| Api m 10 Icarapin | | Pol d 5 Antigen 5 |
| Cross-reactive allergens | | |
| Api m 2 Hyaluronidase | | |
| Api m 5 Dipeptidyl peptidase | | |

- Honey bee sensitization: When positive to one or several of these components Api m 1, Api m 3 and Api m 10.⁵
- Common wasp (yellow-jacket) sensitization: When positive to one or both components Ves v 1 and Ves v 5.⁵
- Paper wasp sensitization: When positive for Pol d 5.⁷

Labcorp Interpretative Reporting for Assessment and Treatment Suggestions

Our convenient Litholink report provides test interpretation that can help enhance patient interactions and sharing of information.

Patient Report

Specimen ID: 000-000-0000-0 Acct #: 00000000 Phone: (310) 434-2651 Rev: 00
 Control ID: LCA Test Master Testing
 Test Master
 3060 South Church Street
 Burlington, NC 27215

Case 11

Patient Details
 DOB: 01/01/1980
 Age: 41y 10m 20d 10h 0m 0s
 Gender: F
 Patient ID:

Specimen Details
 Date collected: 03/01/2022 0000 Local
 Date received: 03/01/2022
 Date entered: 03/01/2022
 Date reported: 03/01/2022 0000 EST

Physician Details
 Ordering Referring ID: N/A

General Comments & Additional Information
 Clinical Use: CASE 11
 Hymenoptera Venom Allergy Prof

| TESTS | RESULT | FLAG | UNITS | REFERENCE | INTERVAL | LAB |
|---------------------------------------|----------------|----------|--------------|-----------|----------|-----|
| Hymenoptera Venom Allergy Prof | | | | | | |
| Class Description | | | | | | |
| Levels of Specific IgE | | | | | | |
| | < 0.10 | 0 | Negative | | | |
| | 0.10 - 0.35 | I/I | Equi/Hum/Low | | | |
| | 0.35 - 0.55 | I | Low | | | |
| | 0.55 - 1.40 | II | Moderate | | | |
| | 1.41 - 3.90 | III | High | | | |
| | 3.91 - 15.00 | IV | Very High | | | |
| | 15.01 - 100.00 | V | Very High | | | |
| | >100.00 | VI | Very High | | | |
| 1001-IgE Honeybee | <0.10 | | KU/L | Class 0 | | 01 |
| 1208-IgE Api m 1 | <0.10 | | KU/L | Class 0 | | 01 |
| 1214-IgE Api m 2 | 0.80 | Abnormal | KU/L | Class II | | 01 |
| 1215-IgE Api m 3 | <0.10 | | KU/L | Class 0 | | 01 |
| 1216-IgE Api m 5 | 3.00 | Abnormal | KU/L | Class III | | 01 |
| 1217-IgE Api m 10 | <0.10 | | KU/L | Class 0 | | 01 |
| 1003-IgE Yellow Jacket | <0.10 | | KU/L | Class 0 | | 01 |
| 1211-IgE Ves v 1 | <0.10 | | KU/L | Class 0 | | 01 |
| 1209-IgE Ves v 5 | 2.10 | Abnormal | KU/L | Class III | | 01 |
| 1004-IgE Paper Wasp | <0.10 | | KU/L | Class 0 | | 01 |
| 1210-IgE Pol d 5 | 0.90 | Abnormal | KU/L | Class II | | 01 |
| Tryptase | 15.0 | High | ug/L | 2.2-13.2 | | 01 |

Comment: Note

Although the use of component IgE testing may enhance the evaluation of potentially allergic individuals over the use of whole extracts alone, these results should be interpreted in the context of a patient's clinical history.

HONEY BEE ASSESSMENT
 IgE to honey bee venom (HBV) extract is negative. IgEs to

YELLOW JACKET ASSESSMENT
 IgE to yellow jacket venom (YJV) extract is negative, but IgE to the YJV component Ves v 5 is positive. Ves v 5 is considered to be a marker of primary YJV sensitization. This protein is not found in honey bee venom. Ves v 5 has a high amino acid sequence identity to pathogenesis-related proteins from mammals, reptiles, insects, fungi, and plants. Homologous proteins from a large number of different yellow jackets, hornets, and paper wasps are known and patients show varying extents of cross-reactivity to these proteins. Sensitization rates to Ves v 5 in YJV-allergic patients is reported to range between 85 and 98%.

PAPER WASP ASSESSMENT
 IgE to paper wasp venom (PWV) extract is negative, but IgE to the PWV component Pol d 5 and IgE to the yellow jacket venom (YJV) component Ves v 5 are both positive. PWV component Pol d 5 exhibits significant cross-reactivity with the YJV component Ves v 5. The Ves v 5 IgE titer is somewhat higher than the Pol d 5 IgE titer, suggesting primary sensitization to YJV.

TRYPYASE ASSESSMENT
 Patients suffering from mastocytosis and/or elevated baseline serum tryptase are more likely than others to go into anaphylaxis when experiencing an insect sting. Patients with mastocytosis frequently have negative allergy test results despite a clear history of hymenoptera sting induced systemic allergic reaction. Patients with mastocytosis and/or elevated baseline serum tryptase are at risk for more severe reactions following stings.

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Identify Culprit Venom Successful Venom Immunotherapy (VIT)

If one or more are positive for:

- Api m 1
- Api m 2
- Api m 3
- Api m 5
- Api m 10

Treat for:
Honey Bee



If one or more are positive for:

- Ves v 1
- Ves v 5
- Pol d 5

Treat for:
Yellow Jacket



Paper Wasp



Labcorp Hymenoptera Venom Allergy (HVA) with Components Profile

| Test Name | Test No. | Method | Specimen Requirements |
|--|----------|---------------------------------------|---------------------------------|
| Hymenoptera Venom Allergy (HVA) with Components Profile | 606220 | Thermo Fisher ImmunoCAP™ Specific IgE | 2.0 mL serum (room temperature) |
| <ul style="list-style-type: none"> Honey Bee Venom (HBV) IgE plus IgE to HBV components Api m 1, Api m 2, Api m 3, Api m 5, and Api m 10 Yellow Jacket Venom (YJV) IgE plus IgE to YJV components Ves v 1 and Ves v 5 Paper Wasp Venom (PWV) IgE plus IgE to PWV component Pol d 5; Tryptase | | | |
| Reflex criteria: If any of the following are true, Cross-reactive Carbohydrate Determinant (CCD) IgE is performed: <ul style="list-style-type: none"> Honey Bee Venom (HBV) IgE ≥0.10 KU/L and all HBV components negative (<0.10 KU/L) Yellow Jacket Venom (YJV) IgE ≥0.10 KU/L and all YJV components negative (<0.10 KU/L) Paper Wasp Venom (PWV) IgE ≥0.10 KU/L and PWV component Pol d 5 negative (<0.10KU/L) | | | |

For specific information on hymenoptera venom allergy, visit <https://www.labcorp.com/tests/606220/hymenoptera-venom-allergy-hva-with-components-profile>.

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