MAYO CLINIC LABORATORIES

Test Definition: SASP

Aspergillus fumigatus, IgG Antibodies, Serum

Overview

Useful For

Evaluation of patients suspected of having hypersensitivity pneumonitis (HP) induced by exposure to *Aspergillus fumigatus*

Evaluation of patients suspected of having HP who have documented environmental exposures to high-humidity environments

Method Name

Fluorescence Enzyme Immunoassay (FEIA)

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Collection Container/Tube:
Preferred: Serum gel
Acceptable: Red top
Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL
Collection Instructions: Centrifuge and aliquot serum into a plastic vial.

Specimen Minimum Volume

0.3 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container

Serum	Refrigerated (preferred)	21 days	
	Frozen	21 days	

Clinical & Interpretive

Clinical Information

Hypersensitivity pneumonitis (HP) is a type of interstitial lung disease caused by an immune-mediated response to inhaled environmental antigens.(1) Patients with HP commonly display symptoms of cough, dyspnea, and midinspiratory squeaks. Patients may present with an acute onset of symptoms (within hours of antigen exposure) or a chronic onset (which may occur over a course of weeks to months). The nature of an individual's disease course will be affected by several factors, including quantity of inhaled antigen, intensity/frequency of exposure, and genetic background. The epidemiology of HP is also challenging to understand, as incidence and prevalence of the disease varies with geographic areas, climate, and local customs. While the immunopathogenesis of HP is not completely understood, it is presumed to involve both type III and type IV hypersensitivity reactions, with the type III reaction characterized by the presence of IgG antibodies specific for the inciting antigen.

There are many antigens, both organic and inorganic, that have been associated with development of HP.(2) Causative organic antigens include a wide array of bacteria, mycobacteria, fungi, and animal proteins. *Aspergillus fumigatus* is a fungus found in locations with high humidity, including soil, greenhouses, and compost heaps. It is fairly ubiquitous and may even be found in household dust. Some individuals exposed to *A fumigatus,* particularly those individuals with routine exposure to high-humidity environments, may develop IgG antibodies against this antigen, which could lead to development of HP.

Clinical practice guidelines for HP include a diagnostic algorithm which focuses on exposure identification, imaging evaluation, and bronchoalveolar lavage/histopathology.(3) Detection of IgG antibodies specific for certain environmental antigens can help to document the causative exposure for an individual. This is critical, as an important treatment for these patients is antigen avoidance. However, IgG testing is only useful as supportive information for the diagnosis of HP; a positive result only indicates sensitization to the antigen and a negative result does not exclude the possibility that a patient with HP may be sensitized to another antigen.

Reference Values

<4 years: not established
> or =4 years: < or =102 mg/L

Interpretation

Positive results for IgG antibodies to *Aspergillus fumigatus,* in patients with signs and symptoms of hypersensitivity pneumonitis, may be consistent with sensitization to this fungus.

Cautions

Positive results for IgG antibodies to *Aspergillus fumigatus* may be found in sera from healthy individuals who are sensitized to this fungus but do not display symptoms consistent with hypersensitivity pneumonitis (HP).

Negative results for IgG antibodies to *A fumigatus* do not exclude HP as a diagnosis; patients with clinical symptoms consistent with HP may be sensitized to a different antigen.

Elevated concentration of antibodies to *A fumigatus* may be also found in patients with invasive aspergillosis and cavitary lung disease.

Clinical Reference

1. Sforza GG, Marinou A: Hypersensitivity pneumonitis: a complex lung disease. Clin Mol Allergy. 2017; Mar 7;15(6). doi: 10.1186/s12948-017-0062-7
2. Costabel U, Miyazaki Y, Pardo A, et al: Hypersensitivity pneumonitis. Nat Rev Dis Primers. 2020 Aug 6;6(1):65. doi: 10.1038/s41572-020-0191-z
3. Raghu G, Remy-Jardin M, Ryerson CJ, et al: Diagnosis of hypersensitivity pneumonitis in adults. An Official ATS/JRS/ALAT Clinical Practice Guideline. Am J Respir Crit Care Med. 2020 August 1;202(3):e36-e69. doi: 10.1164/rccm.202005-2032ST

Performance

Method Description

The Phadia ImmunoCAP System specific IgG fluorescent enzyme immunoassay provides an in vitro method for measuring the concentrations of circulating specific IgG antibodies in human blood samples. Specific IgG from the patient's serum reacts with the antigen of interest, which is covalently coupled to an ImmunoCAP. After washing away nonspecific IgG, enzyme-labeled anti-IgG antibodies are added to form a complex. After incubation, unbound enzyme-anti IgG is washed away, and the bound complex is then incubated with a developing agent. After stopping the reaction, the fluorescence of the eluate is measured. The fluorescence is proportional to the amount of specific IgG, which is present in the patient's sample, ie, the higher the fluorescence value, the more specific IgG antibody is present.(Package insert: ImmunoCAP Aspergillus. Phadia AB; 10/2019)

PDF Report

No

Day(s) Performed

Monday through Friday

Report Available

2 to 4 days

Specimen Retention Time

14 days

Performing Laboratory Location

Rochester

Fees & Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

86606

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
SASP	Aspergillus fumigatus, IgG Ab, S	26954-8

Result ID	Test Result Name	Result LOINC® Value
SASP	Aspergillus fumigatus, IgG Ab, S	26954-8