Lab Dept: Microbiology

Test Name: ASPERGILLUS ANTIGEN

General Information

Lab Order Codes:	ASPAG
Synonyms:	Galactomannan; Aspergillosis
CPT Codes:	87305 – Infectious agent detection by enzyme immunoassay technique, qualitative or semiqualitative, multiple-step method
Test Includes:	Aspergillus antigen reported as an index value.

Logistics

Test Indications:	As an aid in the diagnosis of invasive aspergillosis and assessing response to therapy.
Lab Testing Sections:	Microbiology – Sendouts
Referred to:	Mayo Medical Laboratories (MML Test: ASPAG)
Phone Numbers:	MIN Lab: 612-813-6280 STP Lab: 651-220-6550
Test Availability:	Daily, 24 hours
Turnaround Time:	1 – 4 days
Special Instructions:	**A separate red top tube must be drawn for this test alone and cannot be combined with other testing requiring an SST (gold/marble) tube.**

Specimen

Specimen Type:	Blood
Container:	Gold (serum gel tube preferred/SST)
Draw Volume:	4.5 mL (Minimum: 3 mL) blood
Processed Volume:	1.5 mL (Minimum: 1 mL) serum
Collection:	Routine venipuncture

Special Processing:	Lab Staff: Centrifuge specimen. Send in original red top collection container, do not open or aliquot. Store and send at refrigerated temperatures.
Patient Preparation:	None
Sample Rejection:	Gross hemolysis; gross lipemia; mislabeled or unlabeled specimens

Interpretive

Reference Range: <0.5 index

Interpretation: A positive result supports a diagnosis of invasive aspergillosis (IA). Positive results should be considered in conjunction with other diagnostic procedures, such as microbiologic culture, histological examination of biopsy specimens, and radiographic evidence. See Limitations.

A negative result does not rule out the diagnosis of IA. Repeat testing is recommended if the result is negative but IA is suspected. Patients at risk of IA should have a baseline serum tested and should be monitored twice a week for increasing galactomannan antigen levels.

Galactomannan antigen levels may be useful in the assessment of therapeutic response. Antigen levels decline in response to antimicrobial therapy.

Critical Values: N/A

Limitations: False-positive results are reported to occur at rates 8 – 14% with this assay. For all positive patients, it is recommended that a new aliquot of the same specimen be repeated, as well as collection of a new specimen from the patient for follow-up testing. Two or more consecutive positive results should be obtained from separately drawn specimens before the patient is considered to have a positive *Aspergillus* antigen test.

Numerous foods (pasta, rice, etc.) contain galactomannan. It is thought that damage to the gut wall by cytotoxic therapy, irradiation, or graft-versus-host disease enables translocation of the galactomannan from the gut lumen into the blood and may be partially responsible for the high false-positive rate of this assay.

Other genera of fungi such as *Penicullium* and *Paecilomyces* have shown reactivity with the rat EBA-2 monoclonal antibody used in the assay. These species are rarely implicated in invasive fungal disease. Cross reactivity with *Alternaria* species has also been reported.

Semisynthetic antibiotics such as piperacillin, amoxicillin, and augmentin, which are based on natural compounds derived from the genus *Penicillium*, have been demonstrated to cross-react with the rat EBA-2 monoclonal antibody used in the assay.

The specificity of the assay for *Aspergillus* species cannot exclude the

involvement of other fungal pathogens with similar clinical presentations such as *Fusarium*, *Alternaria*, and *Mucorales*.

The performance of the assay for has not been evaluated with neonate serum specimens or for use with plasma or other specimen types such as urine or cerebrospinal fluid.

The assay may exhibit reduced detection of galactomannan in patients with chronic granulomatous disease and Job's syndrome.

The concomitant use of antifungal therapy in some patients with invasive aspergillosis may result in reduced sensitivity of the assay.

False-positive galactomannan results are possible in patients receiving PLASMA-LYTE is used for bronchoalveolar lavage.

Specimens containing *Histoplasma* antigen may cross-react in the *Aspergillus* galactomannan assay.

Methodology: Enzyme Immunoassay (EIA)

References: Mayo Medical Laboratories August 2016

Updates: 8/3/2016: Update tube Gold SST.