Overview

Useful For
Evaluation of patients with disorders known to be associated with hypereosinophilia

Method Name
Electrochemiluminescence (ECL)

NY State Available
Yes

Specimen

Specimen Type
Plasma EDTA

Specimen Required
Collection Container/Tube: Lavender top (EDTA)
Submission Container/Tube: Plastic vial

Specimen Volume: 0.5 mL

Collection Instructions:
1. Immediately after specimen collection, place the tube on wet ice.
2. Centrifuge at 1,500 x g for 10 minutes and aliquot plasma.
3. Freeze specimen within 30 minutes.

Specimen Minimum Volume
0.3 mL

Reject Due To

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Gross hemolysis</td>
<td>Reject</td>
</tr>
<tr>
<td>Gross lipemia</td>
<td>OK</td>
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<tr>
<td>Gross icterus</td>
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Specimen Stability Information

<table>
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<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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<tbody>
<tr>
<td>Plasma EDTA</td>
<td>Frozen (preferred)</td>
<td>21 days</td>
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</tr>
<tr>
<td></td>
<td>Refrigerated</td>
<td>24 hours</td>
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Clinical and Interpretive

Clinical Information
Interleukin-5 (IL-5) is a homodimer composed of two 20-kD subunits. It is expressed primarily by CD4+ Th2 (helper T cells, subset 2) cells and, to a lesser extent, by activated mast cells. IL-5 acts on mature eosinophils, leading to proliferation, activation, and differentiation. IL-5 is a critical part of the immune response to helminths. Eosinophils activated by IL-5 will bind, through Fc receptors, to helminths that have been opsonized by IgG or IgA.

Elevations in IL-5 may be observed in conditions associated with hypereosinophilia. Hypereosinophilia is most commonly seen in various forms of atopic disease, including urticaria, asthma, allergic bronchopulmonary aspergillosis, and drug allergies. Elevated numbers of eosinophils may also be observed in certain vasculitides, specifically eosinophilic granulomatosis with polyangiitis (EGPA). EGPA is characterized by asthma, pulmonary infiltrates, history of allergies, and hypereosinophilia usually above 1500/mL. Hypereosinophilia may also be observed in certain primary immunodeficiencies (such as Job syndrome), leukemias, and lymphomas. IL-5 is thought to be important in driving eosinophil proliferation in these various conditions. Recently, an advisory committee of the FDA has recommended that mepolizumab, a monoclonal anti-IL-5 antibody, be approved for the treatment of severe eosinophilic asthma in adults. Other IL-5 blocking antibodies (reslizumab and benralizumab) are also in development, with clinical trials designed to determine specific clinical utility.

Reference Values
< or =1.0 pg/mL

Interpretation
Elevated concentrations of interleukin-5 (IL-5) may indicate an expanded Th2 (helper T cells, subset 2)-immune response, which may be associated with hypereosinophilia.

Cautions
Interleukin-5 (IL-5) is a nonspecific marker associated with a Th2 (helper T cells, subset 2)-immune response, and is not diagnostic for any specific disease or disease process. Elevated concentrations of IL-5 must be interpreted within the clinical context of the patient.

Normal concentrations of IL-5 do not exclude the possibility of a Th2-immune response or hypereosinophilia.

IL-5 has limited stability. Following centrifugation, plasma must be either immediately frozen or refrigerated. Samples can only be stored at refrigerated temperatures for 24 hours, after which time samples must be frozen. Storage of plasma for any length of time at room temperature is not acceptable.

Clinical Reference
Performance

Method Description
The interleukin-5 (IL-5) cytokine assay measures human cytokines in a 96-well spotted plate. The assay employs a sandwich immunoassay format where capture antibodies are coated on a single spot on the bottom of each well. Diluted samples, calibrators, and controls are added and to the plate. If present, IL-5 will bind to the capture antibodies. After incubation, a solution containing detection antibodies conjugated with electrochemiluminescent labels is added. After a final incubation, a buffer is added that creates the appropriate chemical environment for electrochemiluminescence. The plate is then read on the Sector Imager 2400. The machine applies a voltage that causes bound labels to emit measurable light. The Sector Imager 2400 measures the intensity of emitted light and correlates it to a set of standards of known quantity via a 4-point logistics curve fitting method. (Package insert: Human IL-5 V-plex, Mesoscale Discovery, Rockville, MD 20850 USA, 18095-v2-2014 Jan)

PDF Report
No

Day(s) and Time(s) Test Performed
Thursday; 3 p.m.

Analytic Time
1 day

Maximum Laboratory Time
8 days

Specimen Retention Time
14 days

Performing Laboratory Location
Rochester

Fees and 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 Regional Manager. 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. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information
83520

LOINC® Information
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