Overview

Method Name
Electrochemiluminescence

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

<table>
<thead>
<tr>
<th>Gross hemolysis</th>
<th>OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross lipemia</td>
<td>Reject</td>
</tr>
<tr>
<td>Gross icterus</td>
<td>Reject</td>
</tr>
</tbody>
</table>

Specimen Stability Information

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

Clinical and Interpretive
Clinical Information

Vascular endothelial growth factor (VEGF) is a critical modulator of angiogenesis (the growth of new blood vessels). (1) In mammals, there are 5 members of the VEGF family, with VEGF-A being the most well-studied. VEGF-A promotes angiogenesis by inducing migration of endothelial cells, promoting mitosis of endothelial cells, and upregulating matrix metalloproteinase activity. (2) VEGF-A is regulated by hypoxia, with increased expression when cells detect an environment low in oxygen. Physiologically, VEGF induces new blood vessel formation during embryonic development, after tissue injury, and in response to blocked vessels.

VEGF also regulates pathological vessel formation, such as in tumor growth and metastases. Angiogenesis during tumor development is complex, although it is clear that VEGF plays a key role. VEGF also regulates angiogenesis in other disease states including rheumatoid arthritis (RA), osteoarthritis, diabetes, and age-related macular degeneration. (3) In addition, circulating concentrations of VEGF are elevated in patients with polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy, and skin changes (POEMS) syndrome, a monoclonal plasma cell disorder. (4) Although the pathologic role of VEGF in POEMS is unclear, it is a useful diagnostic marker for assessing response to therapy.

Reference Values

< or =96.2 pg/mL

Cautions

Elevated circulating concentrations of vascular endothelial growth factor (VEGF) may be observed in a variety of disease states, especially those associated with angiogenesis. Elevated concentrations of VEGF must be interpreted within the clinical context of the patient.

Normal concentrations of VEGF do not exclude the diagnosis of POEMS (polyneuropathy, organomegaly, endocrinopathy, monoclonal gammopathy, and skin changes) syndrome.

VEGF 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 vascular endothelial growth factor (VEGF) 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, VEGF 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 VEGF 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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<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>VEGF</td>
<td>Vascular Endothelial Growth Fctr, P</td>
<td>34694-0</td>
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</table>

<table>
<thead>
<tr>
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<td>VEGF, P</td>
<td>34694-0</td>
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