Overview

Useful For
Aid in differentiating between bacterial and viral meningitis

Aid in identifying increased anaerobic glycolysis or hypoxia associated with bacterial meningitis, cerebral infarction, cerebral arteriosclerosis, intracranial hemorrhage, hydrocephalus, traumatic brain injury, cerebral edema, epilepsy, and inborn errors of metabolism

Method Name
Colorimetric

NY State Available
Yes

Specimen

Specimen Type
CSF

Specimen Required
Specimen Type: Spinal fluid

Collection Instructions: Centrifuge to remove any cellular material.

Specimen Volume: 1 mL

Specimen Minimum Volume
0.5 mL

Reject Due To

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

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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</thead>
<tbody>
<tr>
<td>CSF</td>
<td>Frozen (preferred)</td>
<td>60 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Refrigerated</td>
<td>24 hours</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>3 hours</td>
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Clinical and Interpretive
Clinical Information

Anaerobic glycolysis markedly increases lactate concentrations. Lactate concentrations in cerebrospinal fluid (CSF) are increased in the presence of cerebral glycolysis or hypoxia associated with bacterial meningitis, cerebral infarction, cerebral arteriosclerosis, intracranial hemorrhage, hydrocephalus, traumatic brain injury, cerebral edema, epilepsy, and inborn errors of metabolism. Lactate found in CSF is predominantly produced by central nervous system (CNS) anaerobic glycolysis and is independent of blood lactate. Lactate measurement in CSF has been proposed as a test to differentiate bacterial from viral meningitis.

Reference Values

- 0-2 days: 1.1-6.7 mmol/L
- 3-10 days: 1.1-4.4 mmol/L
- 11 days-17 years: 1.1-2.8 mmol/L
- >17 years: 1.1-2.4 mmol/L

Interpretation

In addition to reference intervals, published meta-analysis of 33 studies concluded concentrations greater than 3.9 mmol/L are suggestive of bacterial meningitis, with lower concentrations suggestive of viral meningitis.(1)

Cautions

Cerebrospinal fluid (CSF) lactate concentrations should be interpreted in conjunction with clinical findings and other laboratory results.

CSF lactate concentrations decrease after treatment with antibiotics; therefore, specimens should be collected prior to initiation of antibiotics in order to differentiate bacterial from aseptic meningitis.

Clinical Reference


Performance

Method Description

Lactate concentration is determined using an enzymatic colorimetric method. L-lactate is oxidized to pyruvate by the specific enzyme lactate oxidase. Peroxidase is used to generate a colored dye using the hydrogen peroxide generated in the first reaction. The intensity of the color formed is directly proportional to the L-lactate concentration. It is determined by measuring the increase in absorbance.(Package insert: Roche Diagnostics Cobas 6000; LACT2 reagent package insert; Indianapolis, IN 46256. 02/2016)

PDF Report

No

Day(s) Performed

Monday through Sunday
Report Available
Same day/1 to 2 days

Specimen Retention Time
1 week

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 has been cleared, approved or is exempt by the U.S. Food and Drug Administration and is used per manufacturer’s instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information
83605

LOINC® Information

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<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>LASF1</td>
<td>Lactic Acid, CSF</td>
<td>2520-5</td>
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<table>
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<tr>
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