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

Container/Tube: Sterile container

Specimen Volume: 1 mL

Collection Instructions: Centrifuge to remove any cellular material.

Specimen Minimum Volume
0.5 mL

Reject Due To

<table>
<thead>
<tr>
<th>Hemolysis</th>
<th>Mild OK; Gross OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lipemia</td>
<td>Mild OK; Gross OK</td>
</tr>
<tr>
<td>Icterus</td>
<td>NA</td>
</tr>
<tr>
<td>Other</td>
<td>NA</td>
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</table>

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
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<tbody>
<tr>
<td>CSF</td>
<td>Frozen (preferred)</td>
<td>60 days</td>
</tr>
<tr>
<td></td>
<td>Refrigerated</td>
<td>24 hours</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) and Time(s) Test Performed
Monday through Sunday; Continuously

Analytic Time
Same day/1 day

Maximum Laboratory Time
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 or approved 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>Order LOINC Value</th>
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<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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