Overview

Useful For
Detecting effects of chronic or remote (months) past exposure to cholinesterase inhibitors (organophosphate insecticide poisoning)

Method Name
Spectrophotometric-ThiocholineProduction

NY State Available
Yes

Specimen

Specimen Type
Whole Blood EDTA

Advisory Information
For testing succinylcholine sensitivity to anesthesia, order PCHE1 / Pseudocholinesterase, Total, Serum.

Shipping Instructions
Specimen must arrive within 72 hours of collection.

Necessary Information
Date of collection is required.

Specimen Required
Container/Tube: Lavender top (EDTA)

Specimen Volume: 4 mL

Specimen Minimum Volume
2.5 mL

Reject Due To

<table>
<thead>
<tr>
<th>Gross hemolysis</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross lipemia</td>
<td>OK</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>Whole Blood EDTA</td>
<td>Refrigerated</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Clinical and Interpretive
Clinical Information
Erythrocyte acetylcholinesterase (AChE) activity is measured to evaluate possible exposure to organophosphate insecticides. Organophosphates act by irreversible inhibition of AChE. Inhibition of AChE in humans causes a variety of acute symptoms including dizziness, nausea, difficulty breathing, and even death. The presence and severity of these symptoms depend, in part, on the degree of AChE depression.

Occupational pesticide handlers are at an elevated risk for exposure to these chemicals through skin contact, inhalation, or accidental ingestion. Organophosphate intoxication can be a result of one or more high exposure events or through chronic lower-level exposure.

Both serum and erythrocyte cholinesterase activity are inhibited by these insecticides, which are among the most commonly used pesticides in the United States. The half-life of serum cholinesterase (eg. pseudocholinesterase) is about 8 days, while the half-life of AChE in erythrocytes is between 2 and 3 months. Therefore, erythrocyte AChE is an indicator of chronic and temporally distant exposures to organophosphates.

Reference Values
31.2-61.3 U/g of hemoglobin

Interpretation
Activities less than normal are suspect for exposure to certain insecticides. For occupational high-risk individuals, a pre-exposure “baseline” is recommended.

Cautions
Make sure the potential offending agent is, indeed, an acetylcholinesterase inhibitor.

Clinical Reference


Performance
Method Description
Acetylcholinesterase (AChE) activity is determined by automated photometric method and hemoglobin is measured by spectrophotometric analysis of lysates from washed packed erythrocytes.(Package insert: Roche Cholinesterase,
Test Definition: ACHS
Acetylcholinesterase, RBC

Roche Diagnostics Corp; V10.0, 02/2017)

PDF Report
No

Day(s) and Time(s) Test Performed
Friday; 10 a.m.

Analytic Time
4 days

Maximum Laboratory Time
6 days

Specimen Retention Time
7 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 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
82482

LOINC® Information

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACHS</td>
<td>Acetylcholinesterase, RBC</td>
<td>49230-6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Result ID</th>
<th>Test Result Name</th>
<th>Result LOINC Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACHSR</td>
<td>Acetylcholinesterase, RBC</td>
<td>49230-6</td>
</tr>
</tbody>
</table>