Overview

Useful For
Predicting the resistance of beta-lactamase producing isolates to hydrolysis-susceptible beta-lactam antimicrobials

Special Instructions
- Infectious Specimen Shipping Guidelines

Method Name
Nitrocefin

NY State Available
Yes

Specimen

Specimen Type
Varies

Shipping Instructions
See Infectious Specimen Shipping Guidelines in Special Instructions for shipping information.

Necessary Information
Specimen source and organism identification are required.

Specimen Required
Specimen Type: Pure culture of actively growing Enterococcus species, Haemophilus influenzae, Moraxella catarrhalis, Neisseria gonorrhoeae, or Staphylococcus species

Container/Tube: Slant

Specimen Volume: Entire specimen

Collection Instructions: Send specimen in an approved mailing container and label as an etiologic agent/infectious substance.

Specimen Minimum Volume
NA

Reject Due To

<table>
<thead>
<tr>
<th>Other</th>
<th>Agar plate</th>
</tr>
</thead>
</table>

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varies</td>
<td>Ambient (preferred)</td>
<td>Refrigerated</td>
</tr>
</tbody>
</table>
Clinical and Interpretive

Clinical Information

Various bacteria produce a class of enzymes called beta-lactamases, which may be mediated by genes on plasmids or chromosomes. Production of beta-lactamase may be constitutive or induced by exposure to antimicrobials. Beta-lactamases hydrolyze (and thereby inactivate) the beta-lactam rings of a variety of susceptible penicillins and cephalosporins. Beta-lactamases are classified by their preferred antimicrobial substrate and the effect of various inhibitors (such as clavulanic acid) on them.

Some antimicrobials, such as cefazolin and cloxacillin are resistant to such hydrolysis (at least for staphylococcal beta-lactamases).

Beta-lactamase producing strains of the following are resistant to many types of penicillin: Staphylococcus species, Hemophilus influenzae, Neisseria gonorrhoeae, Bacteroides species, Enterococcus species, and Moraxella catarrhalis.

The above organisms, when isolated from critical specimens such as blood or spinal fluid, should always be tested for beta-lactamase production.

Addition of a beta-lactamase inhibitor to a beta-lactam (such as sulbactam plus ampicillin) restores the activity of the antimicrobials.

Reference Values

Negative (reported as positive or negative)

Interpretation

A positive test indicates production of beta-lactamase.

Cautions

Some beta-lactamase tests (iodometric and acidometric methods) may not detect certain beta-lactamases.

Many bacteria that do not produce beta-lactamase will be resistant to beta-lactams by other mechanisms.

This test should not be used to detect extended-spectrum beta-lactamases.

Clinical Reference


Performance

Method Description

PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Sunday

Analytic Time
1 day

Maximum Laboratory Time
3 days

Specimen Retention Time
1 month

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 uses a standard method. Its performance characteristics were 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
87185

LOINC® Information

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLACT</td>
<td>Beta Lactamase</td>
<td>6985-6</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>BLACT</td>
<td>Beta Lactamase</td>
<td>6985-6</td>
</tr>
</tbody>
</table>