**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>
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</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></td>
</tr>
<tr>
<td></td>
<td>Refrigerated</td>
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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
Test Definition: BLACT
Beta Lactamase

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 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
87185

LOINC® Information

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