Overview

Useful For
Identifying microorganisms in normally sterile body fluids
Screening sputum specimens for acceptability for bacterial culture
Guiding initial antimicrobial therapy

Testing Algorithm

Special Instructions
- Infective Endocarditis: Diagnostic Testing for Identification of Microbiological Etiology

Method Name
Conventional Gram Stain Procedure

NY State Available
Yes

Specimen

Specimen Type
Varies

Specimen Required

Sources: Closed/open abscess, lower respiratory, fluid, tissue, or swab

Supplies: Culturette (BBL Culture Swab) (T092)

Container/Tube: Sterile container or culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium)

Specimen Volume: Entire collection

Acceptable:

Slides: Prepared microscope slide

Collection Container/Tube: Sterile container or culture transport swab

Submission Container/Tube: Slide container

Collection Instructions: Apply original sample to surface of standard microscope slide using appropriate application method (determined by consistency of specimen type) to assure adequate transfer of specimen onto slide. Allow specimen to dry and then heat-fix the slide. Place in slide container for transport.

Reject Due To
Test Definition: GRAM
Gram Stain

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Varies</td>
<td>Refrigerated (preferred)</td>
<td>24 hours</td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>24 hours</td>
</tr>
</tbody>
</table>

Clinical and Interpretive

Clinical Information
The Gram stain is a general stain used extensively in microbiology for the preliminary differentiation of microbiological organisms. The Gram stain is one of the simplest, least expensive, and most useful of the rapid methods used to identify and classify bacteria.

The Gram stain is used to provide preliminary information concerning the type of organisms present directly from clinical specimens or from growth on culture plates. This stain is used to identify the presence of microorganisms in normally sterile body fluids (cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid). It is also used to screen sputum specimens to establish acceptability for bacterial culture (<25 squamous epithelial cells per field is considered an acceptable specimen for culture) and may reveal the causative organism in bacterial pneumonia.

Reference Values
No organisms seen or descriptive report of observations.

Interpretation

During the staining process, the crystal violet and iodine form a complex within the heat fixed cell. In gram-negative organisms, this complex is readily washed out by the acetone-alcohol. They appear red because they retain only the safranin dye (counterstain). Gram-positive organisms retain the crystal violet-iodine complex after decolorization and remain purple.

Cells and Organisms will be reported according to the following tables:

<table>
<thead>
<tr>
<th>White Blood Cells</th>
<th>Epithelial Cells</th>
<th>Organisms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Power Field</td>
<td>Rare (R)</td>
<td>Rare (R)</td>
</tr>
<tr>
<td></td>
<td>&lt; or =1</td>
<td>&lt;1</td>
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<tr>
<td>Oil Immersion Field (OIF-100x)</td>
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</table>
Test Definition: GRAM

Gram Stain

<table>
<thead>
<tr>
<th>(LPF-10x)</th>
<th>Few (F)</th>
<th>1-9</th>
<th>Moderate (O)</th>
<th>10-25</th>
<th>Many (M)</th>
<th>&gt;25</th>
<th>Few (F)</th>
<th>1-5</th>
<th>Moderate (O)</th>
<th>6-30</th>
<th>Many (M)</th>
<th>&gt;30</th>
</tr>
</thead>
</table>

Cautions
Over-decolorization may result in the loss of the crystal violet iodine complex from gram-positive organisms and result in a misinterpretation.

Clinical Reference

Performance

Method Description
The specimen is applied directly to the slide or may be concentrated first by centrifugation or cytocentrifugation and then placed on the slide. The slide is stained with crystal violet, stained with Gram iodine solution, decolorized with acetone-alcohol, counterstained with safranin stain, and blotted dry. The slide is examined using the oil immersion objective on the microscope. (Chan WW: Gram Stain. In Clinical Microbiology Procedures Handbook. Vol 1. Fourth edition. Edited by AL Leber. Washington, DC, ASM Press, 2016. Section 3.2.1)

PDF Report
No

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

Analytic Time
Same day/1 day

Maximum Laboratory Time
1 day

Specimen Retention Time
Gram stained slides are retained for 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 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
87205

LOINC® Information

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<tr>
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<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>GRAM</td>
<td>Gram Stain</td>
<td>664-3</td>
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</table>

<table>
<thead>
<tr>
<th>Result ID</th>
<th>Test Result Name</th>
<th>Result LOINC Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRAM</td>
<td>Gram Stain</td>
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</tr>
</tbody>
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