Overview

**Useful For**
Detection of aerobic bacterial pathogens in specimens from patients with cystic fibrosis

**Reflex Tests**

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Reporting Name</th>
<th>Available Separately</th>
<th>Always Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM</td>
<td>Identification Commercial Kit</td>
<td>No, (Bill Only)</td>
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<tr>
<td>RMALD</td>
<td>Ident by MALDI-TOF mass spec</td>
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<tr>
<td>GID</td>
<td>Bacteria Identification</td>
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<td>ISAE</td>
<td>Aerobe Id by Sequencing</td>
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<td>REFID</td>
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<tr>
<td>SALS</td>
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<tr>
<td>EC</td>
<td>Serologic Agglut Method 2 Ident</td>
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<tr>
<td>SHIG</td>
<td>Serologic Agglut Method 3 Ident</td>
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<tr>
<td>STAP</td>
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<tr>
<td>STRP</td>
<td>Identification Streptococcus</td>
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<td>BLA</td>
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<td>SIDC</td>
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<td>PCRID</td>
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</table>

**Testing Algorithm**
When this test is ordered, the reflex tests may be performed and charged.

**Method Name**
ConventionalCultureTechnique

**NY State Available**
Yes

**Specimen**

**Specimen Type**
Test Definition: CFRC
Bacterial Culture, Cystic Fibrosis

Varies

Advisory Information
If susceptibilities are desired when this test is ordered, also order ZMMLS / Antimicrobial Susceptibility, Aerobic Bacteria, MIC.

Shipping Instructions
Specimen must arrive within 48 hours of collection.

Necessary Information
Specimen source is required.

Specimen Required
Submit only 1 of the following specimens:

Preferred:
Specimen Type: Sputum, expectorated or induced
Container/Tube: Sterile container
Specimen Volume: Entire collection

Acceptable:
Specimen Type: Bronchial aspirate or washing, bronchoalveolar lavage, endotracheal, or tracheal
Container/Tube: Sterile container
Specimen Volume: Entire collection
Specimen Type: Throat swab
Supplies: Culturette (BBL Culture Swab) (T092)
Container/Tube: Culture transport swab (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium)
Specimen Volume: Swab

2 mL

Reject Due To
Other

Dry swab

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</td>
<td>48 hours</td>
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Document generated September 9, 2020 at 11:22pm CDT
Clinical and Interpretive

Clinical Information

Life expectancy of patients with cystic fibrosis (CF) has increased steadily over the past 50 years, in large part due to improvements in the management of lung disease in this patient population. Still, chronic lung infection is responsible for 75% to 85% of deaths in patients with CF. Appropriate treatment for the causative organism can reduce morbidity and mortality.

The number of microbial species associated with CF lung disease is relatively limited. These include *Pseudomonas aeruginosa* (mucoid and nonmucoid), *Staphylococcus aureus*, *Burkholderia cepacia* complex, *Stenotrophomonas maltophilia*, other nonfermenting gram-negative rods, *Haemophilus influenzae*, and *Streptococcus pneumoniae*. Nontuberculous mycobacteria and *Aspergillus* species may also play a role in CF lung disease, in addition to common respiratory viruses. This culture, which is specifically designed for CF patients, utilizes conventional and additional selective media (compared to non-CF respiratory cultures) to isolate bacteria commonly associated with pulmonary disease in CF patients.

In selected centers, lung transplantation is performed on CF patients. This test is appropriate for lung transplant patients with underlying CF because they can continue to harbor the same types of organisms as they did pretransplantation. CF patients may be colonized or chronically infected by these organisms over a long period of time.

Reference Values

No growth or usual flora

Identification of probable pathogens

Interpretation

A negative test result is no growth of bacteria or growth of only usual flora. A negative result does not rule out all causes of infectious lung disease (see Cautions).

Organisms associated with lower respiratory tract infections are reported.

For positive test results, pathogenic bacteria are identified. Cystic fibrosis patients may be colonized or chronically infected by some organisms over a long period of time, therefore, positive results must be interpreted in conjunction with previous findings and the clinical picture to appropriately evaluate results.

Cautions

When culture of sputum is delayed, successful isolation of bacterial pathogens is less likely, due to the overgrowth of usual oropharyngeal flora.

Some bacterial agents that cause lower respiratory infections (eg, mycobacteria, *Legionella* species, *Mycoplasma pneumoniae*) are not detected by this assay and require special procedures. If the bacterial culture is negative, clinicians should consider additional testing to detect other bacterial, viral, or fungal agents.

Results must be interpreted in conjunction with clinical findings and previous culture results.

Clinical Reference
Test Definition: CFRC
Bacterial Culture, Cystic Fibrosis

Performance

Method Description

Standard media (5% sheep blood, chocolate, and eosin methylene blue [EMB] agar plates) used for respiratory cultures are inoculated. In addition, 2 selective agar plates are utilized to enable isolation of slower growing pathogens that may be easily overgrown by usual flora and the longstanding colonization by *Pseudomonas aeruginosa*. *Burkholderia cepacia* Selective Agar plate is used for the isolation of *Burkholderia cepacia* complex, which includes 9 distinct species. Isolates of *Burkholderia cepacia* will be forwarded to the University of Michigan's CFF Research Testing and Repository for genotyping. (There is no charge for this shipping/testing). A chromogenic *Staphylococcus aureus* agar is used to enhance the isolation of *Staphylococcus aureus*. Finally, a second chocolate blood agar plate is incubated in an anaerobic atmosphere. The anaerobic atmosphere allows for detection of *Haemophilus* species that may otherwise be overgrown by *Pseudomonas aeruginosa*. Pathogens or possible pathogens are identified using 1 or a combination of the following techniques: commercial identification strips or panels, matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF) mass spectrometry, conventional biochemical tests, carbon source utilization, real-time polymerase chain reaction (PCR), and nucleic acid sequencing of the 16S ribosomal RNA (rRNA) gene.(Gilligan P, Alby K, York MK: Respiratory Cultures from Cystic Fibrosis Patients. In Clinical Microbiology Procedures Handbook, Vol 1, Fourth edition. Edited by AL Leber. Washington DC, ASM Press, 2016, Section 3.11.3)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Sunday

Analytic Time

5 days

Maximum Laboratory Time

12 days

Specimen Retention Time

1 day

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 Definition: CFRC
Bacterial Culture, Cystic Fibrosis

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
87070-Bacteria, culture, cystic fibrosis, respiratory
87077-Identification commercial kit (if appropriate)
87077-Ident by MALDI-TOF mass spec (if appropriate)
87077-Bacteria Identification (if appropriate)
87077-Additional Identification procedure (if appropriate)
87077-Identification Staphylococcus (if appropriate)
87077-Identification Streptococcus (if appropriate)
87147 x 1-3-Serologic agglut method 1 ident (if appropriate)
87147-Serologic agglut method 2 ident (if appropriate)
87147 x 4-Serologic agglut method 3 ident (if appropriate)
87147 x 2-6-Serologic Agglut Method 4 Ident (if appropriate)
87153-Aerobe Ident by sequencing (if appropriate)
87185-Beta lactamase (if appropriate)
87798-Identification by PCR (if appropriate)

LOINC® Information

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<th>Test Order Name</th>
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<tbody>
<tr>
<td>CFRC</td>
<td>Bacterial Culture, Cystic Fibrosis</td>
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<tr>
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