MAYO CLINIC LABORATORIES

# Test Definition: ANAE

Bacterial Culture, Anaerobic, Varies

## Overview

### Useful For

Diagnosing anaerobic bacterial infections

### Reflex Tests

| Test Id | Reporting Name | Available Separately | Always Performed |
|---|---|---|---|
| RMALA | Id MALDI-TOF Mass Spec Anaerobe | No, (Bill Only) | No |
| ISAN | Anaerobe Ident by Sequencing | No, (Bill Only) | No |
| TISSR | Tissue Processing | No, (Bill Only) | No |
| ANAID | Anaerobe Ident | No, (Bill Only) | No |
| PCRID | Identification by PCR | No, (Bill Only) | No |

### Testing Algorithm

When this test is ordered, the reflex tests may be performed at an additional charge.

### Method Name

Conventional Culture Technique

### NY State Available

Yes

## Specimen

### Specimen Type

Varies

### Shipping Instructions

**Specimen should arrive within 72 hours of collection.**

### Necessary Information

**Specimen source is required.**

### Specimen Required

**Supplies:** Anaerobe Transport Tube (T588)

**Specimen Types:** Deep tissues, sterile body fluids, abscesses, percutaneous transtracheal aspirates, suprapubic aspirations, or wounds

**Collection Instructions:** Specimen should be obtained by using a needle and syringe from a source not normally

colonized by anaerobes.

### Reject Due To

| | |
|---|---|
| Swab | Reject |

### Specimen Stability Information

| Specimen Type | Temperature | Time | Special Container |
|---|---|---|---|
| Varies | Ambient | 72 hours | |

## Clinical & Interpretive

### Clinical Information

Anaerobic bacteria are the greatest component of the human body's normal bacterial flora colonizing the skin, oral cavity, and genitourinary and lower gastrointestinal tracts and generally do not cause infection. Their presence is important for vitamin and other nutrient absorption and in preventing infection with pathogenic bacteria.

When usual skin and mucosal barriers are penetrated as well as in an anaerobic environment, these bacteria can behave as pathogens. Typical anaerobic infections include periodontitis, abdominal or pelvic abscesses, endometritis, pelvic inflammatory disease, aspiration pneumonia, empyema and lung abscesses, sinusitis, brain abscesses, gas gangrene, and other soft tissue infections.

Anaerobes grow aggressively in the body under anaerobic conditions and may possess a variety of virulence factors including capsules and extracellular enzymes. They also can develop resistance to antimicrobials by producing beta-lactamase and other modifying enzymes as well as by alterations in membrane permeability and structure of penicillin-binding proteins. Because anaerobic bacteria are a significant cause of human infection and are often resistant to commonly used antimicrobials, susceptibility testing results are useful to clinicians. *Bacteroides* and *Parabacteroides* species produce beta-lactamases. Ertapenem, metronidazole, and clindamycin are generally effective agents although resistance to clindamycin, and occasionally ertapenem, is increasing.

### Reference Values

No growth
Identification of probable pathogens

### Interpretation

Isolation of anaerobes in significant numbers from well-collected specimens including blood, other normally sterile body fluids, or closed collections of purulent fluid, indicates infection with the identified organisms.

### Cautions

Specimens should be collected by needle and syringe aspiration or surgical drainage to avoid contamination with normal-flora anaerobes; such contamination would make interpretation of culture results impossible.

Specimens must be transported in anaerobic transport vials.

### Clinical Reference

1. Summanen P, Baron EJ, Citron DM, et al. Wadsworth Anaerobic Bacteriology Manual. 6th ed. Star Publishing Co; 2002
2. Schuetz AN, Carpenter DE. Susceptibility test methods: anaerobic bacteria. In: Carroll KC, Pfaller MA, eds. Manual of Clinical Microbiology. 12th ed. ASM Press; 2019:1377-1397
3. Hall GS. Anaerobic bacteriology. In: Leber AL, ed. Clinical Microbiology Procedures Handbook. Vol 1. 4th ed. ASM Press; 2016: chap 44

## Performance

### Method Description

Appropriate specimens are inoculated onto blood agar, phenylethyl alcohol agar, lysed blood agar containing gentamicin and vancomycin, and into thioglycollate broth tubes which are incubated anaerobically for 48 hours. Colonies are subcultured to determine aerotolerance, and obligately anaerobic organisms may be identified by Gram stain and/or use of various differential media, conventional biochemical tests, matrix-assisted laser desorption/ionization time-of-flight mass spectrometry, real-time polymerase chain reaction (PCR), or 16S ribosomal RNA gene sequencing (rRNA).(Procop GW, Church DL, Hall GS, et al. eds: The anaerobic bacteria. In: Koneman's Color Atlas and Textbook of Diagnostic Microbiology. 7th ed. Wolters Kluwer Lippincott Williams and Wilkins; 2017:983-1073)

### PDF Report

No

### Day(s) Performed

Monday through Sunday

### Report Available

14 to 20 days

### Specimen Retention Time

7 days

### Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

## Fees & 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 account representative. For assistance, contact Customer Service.

### Test Classification

This test has been cleared, approved, or is exempt by the US 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

87075-Bacterial Culture, Anaerobic
87076-Id MALDI-TOF Mass Spec Anaerobe (if appropriate)
87153-Anaerobe Ident by Sequencing (if appropriate)
87176-Tissue Processing (if appropriate)
87150-Identification by PCR (if appropriate)

### LOINC® Information

| Test ID | Test Order Name | Order LOINC® Value |
|---|---|---|
| ANAE | Bacterial Culture, Anaerobic | 635-3 |

| Result ID | Test Result Name | Result LOINC® Value |
|---|---|---|
| ANAE | Bacterial Culture, Anaerobic | 635-3 |