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 (MALDI-TOF) mass spectrometry, real-time polymerase chain reaction (RT 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