MAYO CLINIC LABORATORIES

Test Definition: ACT

Actinomyces Culture

Overview

Useful For

Diagnosing anaerobic *Actinomyces* involved in infections

Testing Algorithm

When this test is ordered, the reflex tests may be performed and charged separately.

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
ISAN	Anaerobe Ident by Sequencing	No	No
TISSR	Tissue Processing	No	No
RMALA	Id MALDI-TOF Mass Spec Anaerobe	No	No

Method Name

ConventionalCultureTechniques

NY State Available

Yes

Specimen

Specimen Type

Varies

Shipping Instructions

Specimen should arrive within 72 hours of collection.

See Infectious Specimen Shipping Guidelines in Special Instructions for shipping information. Specimens must be transported in anaerobic transport vials.

Necessary Information

Specimen source is required.

Specimen Required

Supplies: Anaerobe Transport Tube (T588)

Specimen Type: Abscesses, intrauterine devices, percutaneous transtracheal aspirates, sterile body fluids, suprapubic aspirations, wounds

Specimen Volume: Entire specimen

Reject Due To

Other	Swab Refrigerated or frozen specimen

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Varies	Ambient (preferred)		

Clinical & Interpretive

Clinical Information

Anaerobic *Actinomyces* are nonsporeforming, thin branching, gram-positive bacilli that are part of the normal flora of the human oral cavity and may also colonize the gastrointestinal and female genital tracts. Their presence is important in preserving the usual bacterial populations of the mouth and in preventing infection with pathogenic bacteria. *Actinomyces* are generally of low pathogenicity but may be an important factor in the development of periodontal disease and may cause soft tissue infections in colonized areas of the body following trauma (surgical or otherwise). The typical lesion consists of an outer zone of granulation around central purulent loculations containing masses of tangled organisms ("sulfur granule"). Chronic burrowing sinus tracts develop. Typical actinomycotic infections occur around the head and neck, in the lung and chest wall, and in the peritoneal cavity and abdominal wall. Actinomycosis of the female genital tract occurs in association with the use of intrauterine contraceptive devices. Purulent collections containing "sulfur granules" may drain from some sinus tracts opening to the skin.

Reference Values

No growth
Identification of probable pathogens

Interpretation

Isolation of anaerobic *Actinomyces* 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 organism.

Cautions

Specimens should be collected by needle and syringe aspiration or surgical drainage to avoid contamination with normal-flora *Actinomyces*, especially in and around the oral cavity; such contamination would make interpretation of culture results impossible.

Clinical Reference

1. Summanen P, Baron EJ, Citron DM, Jousimies-Somer HR, et al: Wadsworth Anaerobic Bacteriology Manual, Sixth edition. Belmont CA, Star Publishing Co. 2002
2. Butler-Wu SM, She RC: Actinomyces, Lactobacillus, Cutibacterium, and Other Non-Spore-Forming Anaerobic Gram-Positive Rods. In Manual of Clinical Microbiology. 12th edition. Edited by KC Carroll, MA Pfaller. Washington DC, ASM Press, 2019 Chapters 54, pp 938-967
3. Hall, GS: Anaerobic Gram-Positive Bacilli. In Clinical Microbiology Procedures Handbook. Fourth edition. Vol. 1. Edited by AL Leber. Washington DC, ASM Press, 2016

Performance

Method Description

Appropriate specimens are inoculated onto blood agar and into thioglycollate broth which are incubated under anaerobic conditions. Cultures are examined after 48 hours of incubation and thereafter (maximum of 14 days) for the presence of organisms that have characteristic colonial and Gram-stain morphologies. Definitive identification is made using MALDI-TOF mass spectrometry or 16S rRNA sequencing.(Procop GW, Church DL, Hall GS, et al: The Anaerobic Bacteria. In Color Atlas and Textbook of Diagnostic Microbiology, Seventh edition. Philadelphia, Wolters Kluwer|Lippincott, Williams and Wilkins, 2017, pp 984-1073)

PDF Report

No

Specimen Retention Time

7 days

Performing Laboratory Location

Rochester

Fees & Codes

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-*Actinomyces* culture

62258-Id MALDI-TOF Mass Spec Anaerobe (if appropriate)

87153-Anaerobe identification by sequencing (if appropriate)

87176-Tissue processing (if appropriate)