
UREA BROTH FOR AFB

INTENDED USE

Remel Urea Broth for AFB is a liquid medium recommended for use in qualitative procedures to differentiate *Mycobacterium* species based on urea hydrolysis.

SUMMARY AND EXPLANATION

In 1979, Steadham developed a urease test to aid in the identification of mycobacteria.¹ This broth test was formulated to achieve more consistent results when testing for urease activity. The determination of urea hydrolysis (release of ammonia) is an aid in the characterization of mycobacterial strains, in particular, for distinguishing scotochromogens and nonphotochromogens.²⁻⁵

PRINCIPLE

Urea Broth for AFB is a highly buffered medium which aids in the differentiation of mycobacterial strains after 7 days incubation. Peptone and dextrose supply essential nutrients required for growth of mycobacteria. Polysorbate 80 is a surfactant which aids in the dispersion of aggregates. The low pH of 5.8 serves to facilitate a clear-cut differentiation of positive and negative results. When urea is hydrolyzed ammonia is released. The resulting alkalinity is evidenced by the phenol red indicator changing from yellow to dark pink or red.

REAGENTS (CLASSICAL FORMULA)*

Urea	20.0 g	Monopotassium Phosphate.....	0.4 g
Sodium Chloride.....	5.0 g	Phenol Red 1%.....	10.0 mg
Dextrose.....	1.0 g	Polysorbate 80.....	0.1 ml
Gelatin Peptone	1.0 g	Deminerlized Water.....	1000.0 ml

pH 5.8 ± 0.2 @ 25°C

*Adjusted as required to meet performance standards.

PROCEDURE

1. Inoculate a spadeful of growth from a young, actively growing culture of mycobacteria into Urea Broth for AFB and vigorously mix against the bottom and sides of the tube. Positive and negative control tubes should be inoculated with each test run.
2. Incubate tubes aerobically (not in CO₂) at 33-37°C for up to 7 days. Incubate an uninoculated control tube with each test run.
3. Observe the broth for a pink-red color development at 1, 3, and 7 days.

INTERPRETATION OF THE TEST

Positive Test - A dark pink to red color development

Negative Test - No color change, broth remains yellow

QUALITY CONTROL

All lot numbers of Urea Broth for AFB have been tested using the following quality control organisms and found to be acceptable. Testing of control organisms should be performed in accordance with established laboratory quality control procedures. If aberrant quality control results are noted, patient results should not be reported.

CONTROL

Mycobacterium fortuitum ATCC® 6841
Mycobacterium gordonae ATCC® 14470

INCUBATION

Aerobic, 3-7 days @ 33-37°C
Aerobic, 3-7 days @ 33-37°C

RESULTS

Positive
Negative

BIBLIOGRAPHY

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4. Kent, P.T. and G.P. Kubica. 1985. Public Health Mycobacteriology-A Guide for the Level III Laboratory. U.S. Dept. of H.H.S. and CDC, Atlanta, GA.
5. Isenberg, H.D. 2004. Clinical Microbiology Procedures Handbook. 2nd ed., Vol. 2. ASM Press, Washington, D.C.

Refer to the front of Remel *Technical Manual of Microbiological Media* for **General Information** regarding precautions, product storage and deterioration, specimen collection, storage and transportation, materials required, quality control, and limitations.

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