

DUBOS POLYSORBATE 80 ALBUMIN BROTH

INTENDED USE

Remel Dubos Polysorbate 80 Albumin Broth is a liquid medium recommended for use in qualitative procedures for cultivation of *Mycobacterium* species.

SUMMARY AND EXPLANATION

In 1946, Dubos and Davis described a liquid medium in which growth of the tubercle bacillus was obtained from dilute inocula in 3 to 5 days.¹ In 1947, Dubos and Middlebrook studied the use of this medium and modifications of it for the cultivation of *Mycobacterium tuberculosis*.² Dubos, Fenner, and Pierce modified the original formulation in 1950.³ They incorporated a strong buffering system and an acid pH which provided dispersed growth from a small inoculum. Dubos Polysorbate 80 Albumin Broth is used for subculturing stock strains of mycobacteria and preparing inoculum for other *in vitro* tests.⁴

PRINCIPLE

Casein peptone and asparagine supply carbon and nitrogen for the growth of mycobacteria. Disodium and monopotassium phosphates are buffers. Inorganic salts supply ions required for the metabolism of mycobacteria. Polysorbate 80 is an oleic acid ester which serves as a nutritional source of essential fatty acids for mycobacteria and as a dispersing agent which facilitates homogenous growth from a small inoculum. Bovine plasma albumin (serum factor V) enhances the growth of mycobacteria and protects against the bacteriostatic and bactericidal action of toxic agents.

REAGENTS (CLASSICAL FORMULA)*

Disodium Phosphate (anhydrous).....	2.5 g	Magnesium Sulfate.....	10.0 mg
Asparagine.....	1.0 g	Calcium Chloride.....	0.5 mg
Monopotassium Phosphate.....	1.0 g	Copper Sulfate.....	0.1 mg
Casein Peptone.....	0.5 g	Zinc Sulfate.....	0.1 mg
Polysorbate 80 (10%).....	0.2 g	Bovine Plasma Albumin (Serum Fraction V) 5%.....	100.0 ml
Ferric Ammonium Citrate.....	50.0 mg	Demineralized Water.....	900.0 ml

pH 6.6 ± 0.2 @ 25°C

*Adjusted as required to meet performance standards.

PROCEDURE

1. Inoculate the medium from a pure culture of the mycobacterial test isolate.
2. Incubate with loosened cap in 5-10% CO₂ at 33-37°C for up to 14 days or as recommended by laboratory procedures.
3. Refer to appropriate references for instructions on individual procedures and for further use of this product.^{4,6}

QUALITY CONTROL

All lot numbers of Dubos Polysorbate 80 Albumin Broth have been tested using the following quality control organisms and have been 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 kansasii ATCC® 12478
Mycobacterium tuberculosis ATCC® 25177

INCUBATION

CO₂, up to 14 days @ 33-37°C
CO₂, up to 14 days @ 33-37°C

RESULTS

Growth
Growth

LIMITATIONS

1. Polysorbate 80 is an *in vitro* indicator of mycobacterial virulence. Virulent cultures have been demonstrated to form cords in media containing oleic acid or its esters, whereas nonvirulent cultures tend to grow more diffusely.³⁻⁵
2. When good growth is evident, subculture to appropriate media to confirm the viability of the *Mycobacterium* spp. harvested.⁴

BIBLIOGRAPHY

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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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