

Middlebrook 7H9 Broth

Liquid medium for cultivating mycobacteria.

TYPICAL FORMULA	(g/l)
Ammonium Sulfate	0.5
L-Glutamic Acid	0.5
Sodium Citrate	0.1
Pyridoxine	0.001
Biotin	0.0005
Disodium Phosphate	2.5
Monopotassium Phosphate	1.0
Ferric Ammonium Citrate	0.04
Magnesium Sulfate	0.05
Calcium Chloride	0.0005
Zinc Sulfate	0.001
Copper Sulfate	0.001
Glycerol	2 ml
Sodium Chloride	0.85
Glucose	2.0
Bovine Albumin (Fraction V)	5.0
Catalase	0.003
Final pH 6.6 ± 0.2	

DESCRIPTION

Middlebrook 7H9 Broth is a liquid medium used for the cultivation of mycobacteria and in the preparation of inocula for drug susceptibility testing.

PRINCIPLE

Glutamic acid, sodium citrate, pyridoxine, biotin and ammonium sulfate supply growth factors. Ferric ammonium citrate and magnesium sulfate are sources of trace ions. Phosphates help maintaining the pH of the medium. Glycerol and glucose are energy sources. Sodium chloride maintains the osmotic equilibrium. Albumin protects the tubercle bacilli against toxic agents. Catalase destroys toxic peroxides that may be present in the medium.

TECHNIQUE

For primary isolation, inoculate the medium with the specimen as recommended in test procedures by the Centers for Disease Control and Prevention (CDC) or consult appropriate references. Incubate at $35 \pm 2^\circ\text{C}$ for up to 8 weeks in aerobic atmosphere enriched with 5-10% carbon dioxide. Keep the caps of the tubes loosened for at least 1 week to permit circulation of CO_2 but tighten the caps thereafter to prevent dehydration, loosening briefly once a week to replenish CO_2 .

For susceptibility testing according to the CLSI agar proportion method, use Middlebrook 7h9 to prepare inocula equivalent to 1 McFarland turbidity standard.

INTERPRETATION OF RESULTS

Examine weekly for growth and/or use for laboratory test procedures as required.

N.B. Negative culture results do not rule-out active infection by mycobacteria. Some factors that may lead to unsuccessful cultures are:

- The specimens was not representative of the infectious materials; i.e. saliva instead of sputum.
- The mycobacteria were destroyed during digestion and decontamination of the specimen.
- Gross contamination interfered with the growth of mycobacteria.
- Proper aerobic conditions and increased CO_2 tension were not provided during incubation.

STORAGE

10-25°C away from light, until the expiry date on the label or until signs of deterioration or contamination are evident.

WARNING AND PRECAUTIONS

The product does not contain hazardous substances in concentrations exceeding the limits set by current legislation and therefore is not classified as dangerous. It is nevertheless recommended to consult the safety data sheet for its correct use. The product is designed for *in vitro* diagnostic use only and must be used by properly trained operators. All aerosol-generating activities must be conducted in a Class I or II biological safety cabinet.

DISPOSAL OF WASTE

Disposal of waste must be carried out according to the national and local regulations in force.

REFERENCES

1. Clinical and Laboratory Standards Institute (2004) Quality Control for Commercially Prepared Microbiological Culture Media; Approved Standard, 3rd ed. M22-A3. CLSI, Wayne, PA.
2. National Committee for Clinical Laboratory Standards(2003) Document M24-A. Testing of Mycobacteria, Nocardiae, and Other Aerobic Actinomycetes; Approved Standard. NCCLS, Wayne, PA.
3. Kent, P.T. and G.P. Kubica (1985) Public Health Mycobacteriology, A Guide for the Level III Laboratory. Dept. of H.H.S. and Centers for Disease Control (CDC), Atlanta, GA.
4. Middlebrook, G., M.L. Cohn, W.E. Dye, Russell, Jr., and D. Levy (1960) Microbiologic procedures of value in tuberculosis. Acta. Tuberc. Scand. 38:66-81.



LIOFILCHEM® S.r.l.

Via Scozia, Zona Ind.le - 64026, Roseto degli Abruzzi (TE) - ITALY
Tel +39 0858930745 Fax +39 0858930330 Website: www.liofilchem.net E-mail: liofilchem@liofilchem.net



PRODUCT SPECIFICATIONS

NAME

Middlebrook 7H9 Broth

PRESENTATION

Glass tubes containing 10 ml of medium

STORAGE

10-25°C

PACKAGING

Ref.	Content	Packaging
24436	20 x 10 ml tubes	20 tubes in cardboard box

pH OF THE MEDIUM

6.6 ± 0.2

USE

Middlebrook 7H9 Broth is a liquid medium used for the cultivation of mycobacteria and in the preparation of inocula for drug susceptibility testing

TECHNIQUE

Refer to technical sheet of the product

APPEARANCE OF THE MEDIUM

Colourless to very light amber, clear

SHELF LIFE

1 year

QUALITY CONTROL

- Control of general characteristics, label and print
- Sterility control
7 days at 22 ± 2°C, in aerobiosis
7 days at 35 ± 2°C, in aerobiosis
- Microbiological control
Inoculum for productivity: 100-300 CFU
Incubation Conditions: 35 ± 2°C for up to 21 days in aerobic atmosphere with 5-10% CO₂








Microorganism

Mycobacterium intracellulare ATCC® 13950
Mycobacterium scrofulaceum ATCC® 19981

Growth

Good
Good

TABLE OF SYMBOLS

LOT Batch code	IVD In vitro Diagnostic Medical Device	 Manufacturer	 Use by	 Fragile, handle with care
REF Catalogue number	 Temperature limitation	 Contains sufficient for <n> tests	 Caution, consult instruction for use	 Do not reuse



LIOFILCHEM® S.r.l.

Via Scozia, Zona Ind.le - 64026, Roseto degli Abruzzi (TE) - ITALY
Tel +39 0858930745 Fax +39 0858930330 Website: www.liofilchem.net E-mail: liofilchem@liofilchem.net

