LOWENSTEIN JENSEN MEDIUM W/ GLYCEROL

INTENDED USE:

Lowenstein-Jensen Medium is commonly used in the clinical laboratory for the isolation and differentiation of Mycobacterium spp.

PRINCIPLE AND INTERPRETATION:

L-Asparagine and Potato Flour are sources of nitrogen and vitamins in Lowenstein-Jensen Medium. Monopotassium Phosphate and Magnesium Sulfate enhance organism growth and act as buffers. Glycerol and the Egg Suspension provide fatty acids and protein required for the metabolism of mycobacteria. The coagulation of the egg albumin during sterilization provides a solid medium for inoculation purposes. Sodium Citrate and Malachite Green are selective agents to prevent growth of most contaminants and allow early growth of mycobacteria.

COMPOSITION:

Ingredients	Gr/1600 ml
L-Asparagine	3,6 gr
Monopotassium Phosphate	2,5 gr
Magnesium Sulfate	0,24 gr
Sodium Citrate	0,6 gr
Malachite Green	0,4 gr
Potato Flour	30 gr
Glycerol	12 ml
Egg Suspension	1000 ml
Deionize water	600 ml

***Formula adjusted, standardized to suit performance parameters

pH: 7,0 ± 0,2

PRECAUTIONS:

For professional use only. Do not use tubes if they show evidence of microbial contamination, discoloration, or other signs of deterioration.

TEST PROCEDURE:

Material Provided: Lowenstein Jensen Medium w/Glycerol

Materials Required but Not Provided	Quantity
Suspension Tube	1
10 $^{-2}$ dilution tube (10ml)	1
10 $^{-4}$ dilution tube (10ml)	1

1.Suspend the sample in a sterile screw-capped glass tube containing sterile glass beads.
2.Vortex well (several minutes) until suspension is free of large clumps.
3.Compare this suspension to 1 McFarland. The suspension should be more turbid than the standard.
4.Take 100 µl from 1 McFarland suspension tube and pour in to 10^{-2} dilution tube and vortex.
5.Take 100 µl from 10^{-2} dilution tube and pour in to 10^{-4} dilution tube and vortex.
6.Take 100 µl from 10^{-4} dilution tube and inoculate in to Lowenstein Jensen Medium w/ Glycerol
7.Incubate tubes with loosened caps at 35 ± 2 °C in an aerobic atmosphere supplemented with 5–10% carbon dioxide.
8.Examine tubes after 7, 14, and if necessary, 21 days for amount of growth and inhibition.
9.The growths are evaluated according to below table:

R (resistant); the bacteria are resistant and it are growing.
S (sensitive); the bacteria are sensitive and are not growing.

QUALITY CONTROL:

1.Sterility Control:
30-35°C / 21 d: NO GROWTH

2.Phsical/Chemical Control
pH: 7,0 ± 0,2
Apperance: Blue-Green

3.Microbiological Control: Incubation at 35±2°C and examine tubes after 7, 14, and 21 days.

Microorganism	Results	
	Growth	Reaction
M. tuberculosis H37Ra ATCC 25177	Good	Resistant
M. smegmatis ATCC 607	Good	Resistant
Escherichia coli 25922	Partial inhibition	Partial inhibition

**Incubate uninoculated representative tubes aerobically at 20–25 °C and 30–35 °C and examine after 7 and 14 days for microbial contamination.

LIMITATIONS OF THE PROCEDURE:
For identification, organisms must be in pure culture. Morphological, biochemical, and/or serological tests should be performed for final identification.

STORAGE CONDITIONS AND SHELF LIFE:
Store the prepared medium at 2-12°C. Use before expiry date on the label. Do not use beyond stated expiry date.

DISPOSAL:
Incubated medium may contain active bacteria and micro-organisms. Do not open infected medium. Infected tube should be autoclaved, incinerated or opened and soaked in a chlorine-based disinfectant (liquid bleach) for 20 minutes prior to disposal.

PACKAGING:
Katalog Number: 04007
Content/Packaging: 17x115mm Polycarbonate Tube, 100 tubes/box

REFERENCES:
1. Musser, J. M. 1995. Antimicrobial resistance in Mycobacteria: molecular genetic insights. Clinical Microbiology Reviews. 8:496-514.
2. Murray, P. R., E. J. Baron, M. A. Pfaller, F. C. Tenover, and R. H. Yolken (eds.). 1995. Manual of clinical microbiology, 6th ed. American Society for Microbiology, Washington, D.C.
3. Lowenstein, E. 1931. Die Zachtung der Tuberkelbazillen aus dem stramenden Blute. Zentralb. Bakteriol Parasitenkd. infektionskr. hyg. Abt. I orig., 120:127.
4. Jensen, K. A. 1932. Rinzuchtung und Typenbestimmung von Tuberkelbazillentamen. Zentralb. Bakteriol Parasitenkd. infektionskr. hyg. Agt. I Orig., 125:222.
5. MacFaddin, J. F. 1985. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. 1. Williams & Wilkins, Baltimore, MD.
6. Isenberg, H. D. (ed.). 1992. Clinical microbiology procedures handbook, vol. 1 American Society for Microbiology, Washington, D.C.