Lowenstein-Jensen Medium
SKU: 700003632, 700003633, 700003634, 700003635
NCM0276

Intended Use
Lowenstein - Jensen Medium is used with fresh egg and glycerol for the isolation and differentiation of *Mycobacterium* spp. in a laboratory setting. Lowenstein - Jensen Medium is not intended for use in the diagnosis of disease or other conditions in humans.

Description
The use of egg-based media for primary isolation of mycobacteria have two significant advantages. First, egg-based media support a wide variety of mycobacteria. Second, growth of mycobacteria on egg media can be used for niacin testing. Liquefaction of Lowenstein-Jensen Medium can occur if contaminated with proteolytic organisms.

Lowenstein-Jensen Medium is a modification of Lowenstein Medium, modified by Jensen. Jensen modified the medium by alternating the citrate and phosphate contents, eliminating congo red dye, and increasing malachite green concentration. Lowenstein-Jensen Medium is commonly used in the clinical laboratory to isolate acid-fast organisms from sterile and nonsterile sources.

Typical Formulation (in 600 mL)

L-Asparagine	3.6 g
Monopotassium Phosphate	2.5 g
Magnesium Sulfate	0.24 g
Sodium Citrate	0.6 g
Malachite Green	0.4 g
Potato Flour	30.0 g

Formula is adjusted and/or supplemented as required to meet performance specifications.

Supplements
Glycerol, 12 mL
Egg Suspension, 1000 mL

Precaution
Refer to SDS

Preparation
1. Dissolve 37.3 g of the medium in 600 mL of purified water containing 12 mL of glycerol.
2. Heat with frequent agitation to completely dissolve the medium.
3. Autoclave at 121°C for 15 minutes.
4. Prepare 1000 mL of a uniform suspension of fresh eggs under aseptic conditions. Avoid whipping air into suspension during the collection and mixing.
5. Aseptically mix the 1000 mL of egg suspension with 600 mL of the sterile Lowenstein-Jensen Medium cooled to 50 - 60°C, avoiding air bubbles.
6. Dispense the finished medium into sterile screw-cap test tubes. Place the tubes in a slanted position and heat at 85°C for 45 minutes.

Quality Control Specifications
Dehydrated Appearance: Powder is homogeneous, free flowing, and light to medium blue-green.

Prepared Appearance: Prepared medium with egg suspension is light to medium greenish-blue and opaque.

Expected Cultural Response: Cultural response on Lowenstein-Jensen Medium at 35 ± 2°C under 7 – 10% CO_2 and examined for growth up to 21 days incubation.

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Microorganism	Approx. Inoculum (CFU)	Expected Results
Escherichia coli ATCC® 25922	10^3	Partial to complete inhibition
Mycobacterium fortuitum Group IV ATCC® 6841	Heavy	Good to excellent
Mycobacterium intracellulare Group III ATCC® 13950	Heavy	Good to excellent
Mycobacterium kansasii Group I ATCC® 12478	Heavy	Good to excellent
Mycobacterium scrofulaceum Group II ATCC® 19981	Heavy	Good to excellent
Mycobacterium tuberculosis H37Ra ATCC® 25177	Heavy	Good to excellent

The organisms listed are the minimum that should be used for quality control testing.

Test Procedure

Refer to specific procedures for a complete discussion of the isolation and identification of *Mycobacterium* spp.

Results

Observe for colonies that may or may not be pigmented. Colony morphology depends on the species isolated.

Expiration

Refer to expiration date stamped on the container. Dehydrated medium should be discarded if not free flowing, or if appearance has changed from original color. Expiry applies to medium in its intact container when stored as directed.

Limitations of the Procedure

1. Due to nutritional variation, some strains may be encountered that grow poorly or fail to grow on this medium. Further tests are necessary for confirmation of *Mycobacterium* spp.

Storage

Store dehydrated culture media at 2-30°C away from direct sunlight. Once opened and recapped, place container in a low humidity environment at the same storage temperature. Protect from moisture and light by keeping container tightly closed.

References

1. Lowenstein, E. 1931. Die Zachtung der Tuberkelbazillen aus dem stramenden Blute. Zentralb. Bakteriol Parasitenkd. infektionskr. hyg. Abt. I orig., 120:127.
2. Jensen, K. A. 1932. Rinzuchtung und Typenbestimmung von Tuberkelbazillentamen. Zentralb. Bakteriol Parasitenkd. infektionskr. hyg. Agt. I Orig., 125:222.
3. MacFaddin, J. F. 1985. Media for isolation-cultivation-identification-maintenance of medical bacteria, vol. 1. Williams & Wilkins, Baltimore, MD.
4. Isenberg, H. D. (ed.). 1992. Clinical microbiology procedures handbook, vol. 1 American Society for Microbiology, Washington, D.C.

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