Lowenstein Jensen Medium Base w/o M.Green

Cat. 1439

For the cultivation of Mycobacterium tuberculosis and other Mycobacteria.

Practical information

Aplications	Categories
Growth	Mycobacteria
Selective isolation	Mycobacteria

Industry: Clinical

Principles and uses

Lowenstein Jensen Medium Base w/o M.Green can be used, with whole egg, glycerol and malachite green, to cultivate and isolate a wide variety of mycobacteria other than M. leprae from clinical samples. The growth of mycobacteria on egg media can be used for niacin testing.

Glycerol and egg mixture provide fatty acids and protein necessary for the metabolism of mycobacteria. The coagulation of the egg albumin during sterilization gives a solid medium for inoculation purposes. Monopotassium phosphate acts as a buffer system. Magnesium sulfate is a magnesium ion required in a large variation of enzymatic reactions, including DNA replication. Malachite green suppresses the growth of contaminating bacteria.

With 5% sodium chloride, Lowenstein Jensen Medium can be used as an aid in the differentiation of rapid-growing mycobacteria from slow growers on the basis of salt tolerance.

M. fortuitum, M. triviale, M. chelonei and some strains of M. flavescens grow on this medium while most other mycobacteria strains are inhibited.

Lowenstein Jensen Medium in a deep-butt tube may be used to aid the differentiation of mycobacteria on the basis of the catalase test. Lowenstein Jensen Medium with antibiotics can be used to selectively isolate mycobacteria and inhibit contaminating flora. The addition of ribonucleic acid to the Lowenstein Jensen Medium may increase percentage of tubercle bacilli recovered from clinical specimens compared to recovery on the standard Lowenstein Jensen Medium.

M. bovis will not grow on Lowenstein Jensen Medium containing glycerol.

Formula in g/L

Magnesium citrate	0,6	Magnesium sulfate	0,24
Monopotassium phosphate	2,4	Asparagine	3,6
Potato flour	30		

Preparation

Suspend 36,9 grams of the medium in 550 ml of distilled water, with 12 ml of glycerol (do not add glycerol if bovine bacilli or other glycerophobic organisms are to be cultivated) Heat with frequent agitation and boil for one minute. Autoclave at 121 ºC for 15 minutes. Cool to 50 ºC. Meanwhile, prepare one liter of whole egg, aseptically obtained and mixed without introducing air bubbles. Add slowly the egg to the base to obtain a homogeneous mixture. Add to the previous mix 0,40 g of Malachite Green (previously dissolved in 50 ml of water/ sterilize and cool) and mixed. Distribute into sterile screw capped tube. Place the tubes in a slanted position. Tyndallise to inspissate at 85-90 ºC for 45 minutes.

Instructions for use

Inoculate and incubate at a temperature of 35±2 ºC for up to 28 days. Confirmation should be made with biochemical test.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	White	Bluish green	7,0±0,2

Microbiological test

The microbiological test should be carried out by the end-user laboratory.

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Bailey and Scott. Diagnostic Microbiology. The C.V. Mosby Company, Saint Louis, 1978. Diagnostic Procedures and Reagents., APHA. Fifth Ed. 1970. New York. Raiza Nikolajuk of Irurzum and A.J.F., Irurzum. The Laboratory in the Diagnostics of Tuberculosis. Ed. Medical Panamericana, Buenos Aires, 1972.