Levine Agar (EMB) BAM

Cat. 1050

For the isolation and differentiation of Enterobacteria.

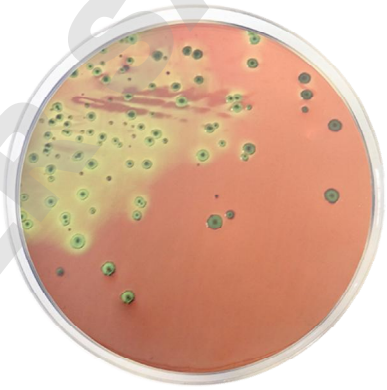
Practical information

Aplications	Categories
Differentiation	Enterobacteria

Industry: Clinical / Food / Dairy products

Regulations: BAM

CE
IVD



Principles and uses

Levine Agar (EMB) is a slightly selective medium for the investigation and differentiation of lactose-fermenting and lactose non-fermenting Enterobacteria in foods, dairy products and clinical samples. It is used for the examination of samples of sanitary importance for the presence of coliforms.

Gelatin Peptone provides nitrogen, vitamins, minerals and amino acids essential for growth. Lactose is the fermentable carbohydrate providing carbon and energy. Eosin Y and Methylene blue are inhibitors of Gram positive bacteria. Bacteriological agar is the solidifying agent.

Coliforms, being lactose-fermenting organisms, are identified as blue-black colonies. Lactose non-fermenters, such as Salmonella and Shigella, show colorless colonies, transparent or amber.

Formula in g/L

Bacteriological agar	15	Dipotassium phosphate	2
Eosin Y	0,4	Gelatin peptone	10
Lactose	10	Methylene blue	0,065

Preparation

Suspend 37,5 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 ºC for 15 minutes. Cool to 45-50 ºC, mix well and dispense into plates.

Instructions for use

» For clinical diagnosis, the type of sample is oral expectoration, vaginal secretions, skin and nasal scrapes.

- Inoculate over the surface in parallel striae with the inoculating loop or hyssop.
- Incubate in aerobic conditions at 35±2 ° C for 18-24 hours.
- Reading and interpretation of the results.

» For other uses not covered by the CE marking:

For the confirmation of E. coli in food samples according to the BAM:
- Transfer a loopful of each gas positive LST tube (Cat. 1310) to an EC tube (Cat. 1522). A positive result in the EC broth is indicative of fecal coliforms presence.
- Inoculate each gas positive EC tube in an Levine Agar (EMB) agar plate and incubate at 35±0,5 ºC for 18-24 hours.
- Suspicious E. coli colonies are dark centered and flat, with or without metallic sheen.
- Transfer up to 5 suspicious colonies from each Levine Agar (EMB) plate to PCA (Cat. 1056) slants, incubate them for 18-24 h at 35±0,5 °C and use for confirmation by biochemical tests.

Characteristics of the colonies:
- Escherichia coli: 2 - 3 mm in diameter. Blue-black in the center, with edges clear to transmitted light, often with a metallic green sheen with reflected light.
- Salmonella and Shigella: Transparent, amber to colorless.
- Staphylococcus: (coagulase-positive): Punctiform, colorless.
- Enterobacter aerogenes: Large, 4 - 6 mm in diameter. Elevated and mucoid. Grayish-brown in the center to transmitted light. Generally does not have a metallic sheen.
- Proteus: When there is no swarming, similar to Salmonella or Shigella.

Quality control

Solubility	Appearance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Pink-reddish	Purple-blue	7,1±0,2

Microbiological test

Incubation conditions: (35±2 ºC / 18-24 h)

Microrganisms	Specification	Characteristic reaction
Enterobacter aerogenes ATCC 13048	Good growth	Pink colony
Salmonella typhimurium ATCC 14028	Good growth	Colorless colony
Proteus mirabilis ATCC 14273	Good growth	Colorless colony
Escherichia coli ATCC 25922	Good growth	Blue-black with green sheen, black center
Staphylococcus aureus ATCC 25923	Inhibited growth	

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

BAM Media M80: Levine's Eosin-Methylene Blue (L-EMB) Agar
Levine, J. Inf. Dis. 22:43. 1981. J. Bact. 45:471. 1943. Vogel, R.A. and Moses, R.M. Weld's Method for the Rapid Identification of Candida albicans in Clinical Materials. Am. J. Clin. Path. 28:103-106. 1957.