EMB Agar, Levine Plate

Intended Use
EMB Agar, Levine Plate is used for isolation, enumeration and differentiation of members of *Enterobacteriaceae.*

Summary
EMB Agar, Levine was developed by Levine and is used for the differentiation of *Escherichia coli* and *Enterobacter aerogenes*. This medium is recommended for the isolation, enumeration and differentiation of members of the coliform group by American Public Health Association. This formulation gives a sharp and distinct differentiation between the colonies of lactose fermenting and nonlactose fermenting microorganisms.

Principle
The media contain Eosin Y and Methylene Blue dyes that inhibit Gram-positive bacteria to a limited degree. In addition, these dyes also serve as differential indicators in response to lactose fermentation by the microorganisms. Lactose is added to the media as a carbohydrate source for typical lactose-fermenting Gram-negative bacilli. Lactose fermenters will drop the pH of the media which results in the formation of purplish black colonies due to absorption of methylene blue-eosin dye complex, while Lactose nonfermenters probably raise the pH of surrounding medium by oxidative deamination of protein, which solubilizes the methylene blue-eosin complex resulting in colourless colonies.

Formula*
Ingredients	**g/L**
Pancreatic Digest of Gelatin	10.0
Lactose	10.0
Dibasic Potassium Phosphate	2.0
Eosin Y	0.4
Methylene Blue	0.065
Agar	15.0

*Adjusted to suit performance parameters.

Additional Material Required
Bacteriological Incubator.

Instructions for use
1. Open the sterile pack and remove the plate aseptically.
2. Inoculate/streak the plate as per standard procedure.
3. Incubate the plates as per standard guidelines.
4. The plates must be incubated in inverted position.

Reading and interpretation
1. After incubation, observe the microbial growth and count the colonies.
2. Interpretation is assured by user.

Quality Control
Appearance: Gel with smooth, even surface without any cracks, bubbles and drying or shrinking of media.
Colour of Medium: Reddish purple coloured, opalescent gel with fine dispersed precipitate, forms in petriplates.
Quantity of Medium: 27 ± 2 g media in 90 mm petriplate.
pH at 25°C ± 2°C: 7.1 ± 0.2
Growth Promotion Test: Growth promotion is carried out in accordance with USP and growth is observed after an incubation at 30°C-35°C for 24 hours.
Growth Promoting Properties: The test results observed are within the specified temperature and shortest period of time specified in the test inoculating ≤100 cfu of appropriate microorganism.

Growth Promoting Organism (ATCC)	Growth	Colour of Colony
Escherichia coli (25922)	Good	Purple with black center and green metallic sheen
Pseudomonas aeruginosa Strain Boston 41501 (27853)	Good	Colourless
Proteus mirabilis (25933)	Good	Colourless
Klebsiella aerogenes (13048)	Good	Pinkish purple
Klebsiella pneumoniae subsp. *pneumoniae* (10031)	Good	Pinkish purple, mucoid
Salmonella enterica subsp. *enterica* serovar *Abony* NCTC (6017)	Good	Colourless
Salmonella enterica subsp. *enterica* serovar *Typhimurium* (14028)	Good	Colourless
Enterococcus faecalis (29212)	Partial Inhibition	Pinkish purple

Storage and Shelf Life

1. Store between 15°C-25°C to avoid water condensation. Condensation can be prevented by avoiding quick temperature shifts and mechanical stress.
2. Under optimal conditions, the medium has a shelf life of 3 months. Use before expiry mentioned on the label.

Reference

1. LEVINE, M (1918) Diferentation of E. coli and A. aerogenes on simplified Eosin-ethylene Blue Agar. J. Infect. Dis. 23:43-47.
2. Holt-Harris, J.E., and O. Teague. (1916). A new culture medium for isolation of Bacikllus typhosa from stools. J. Infect. Dis. 18: 596- 600.
3. Greenberg A. E., Trussell R. R. and Clesceri L. S. (Eds.), 1998, Standard Methods, for the Examination of Water and Wastewater, 20th ed., APHA, Washington, D.C.
4. Marshall R. (Ed.), 1992, Standard Methods for the Examination of Dairy, Products, 16th ed., APHA Inc., New York.
5. Downes F. P and Ito K. (Ed.), 2001, Compendium of Methods for the Microbiological Examination of Foods, 4th ed., APHA, Washington, D.C.
6. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product	Pack Size
205050310100	EMB Agar, Levine Plate	100 Plates