

**Product :
EOSIN METHYLENE BLUE AGAR (EMB
AGAR)**
Also known as

EMB Agar

Specification

Selective differential medium for the isolation and enumeration of coliforms according to ISO 21150 standard and USP.

Formula * in g/L

Peptone.....	10,000
Lactose.....	10,000
Dipotassium phosphate.....	2,000
Eosin Y	0,400
Methylene blue.....	0,065
Agar.....	15,000

Final pH 6,90 ±0,2 at 25 °C

* Adjusted and /or supplemented as required to meet performance criteria

Directions

Add 37,5 g to 1 L of distilled water. Bring to the boil and distribute in suitable containers. Sterilize in the autoclave at 121°C for 15 minutes.

Description

 A very versatile medium originally developed for the differentiation of *E.coli* and *Enterobacter aerogenes*. It has also proved very effective in the rapid identification of *Candida albicans* and demonstrates a high correlation with the coagulase test for staphylococci.

It has been repeatedly recommended for the detection, enumeration and differentiation of members of the coliform group of bacteria.

Technique

 The Weld method for the identification of *Candida albicans* uses this medium with chlortetracycline (100 mg/L) in a 10% CO₂ environment. The method's efficacy has been tested with a variety of samples, such as sputum, oral secretions, faeces, nails and vaginal secretions, all of which provide definitive results within 24-48 hours. Staphylococci are also easily identified, particularly coagulase-positive strains. These have a very characteristic appearance: small colourless colonies with a central red nucleus. The medium's prevailing application is in the differentiation of *E. coli* and *E. aerogenes*.

The medium should be sterilized once distributed into tubes containing 20 mL of product each, and then refrigerated. Melt in a boiling water bath before use and stir until it acquires a dark purple colour. Pour a tube into each sterile plate and allow it to solidify. It is advisable to dry the medium's surface before use, leaving the plate open but inverted.

For each doubtful lactose broth tube, inoculate one plate by streaking, and incubate for 24 hours at 35±2°C.

- *Escherichia coli* and *Citrobacter* form flat colonies of 2-3 mm in diameter and are dark violet in colour with a black centre which produces a distinctive green metallic sheen when light is reflected on it.
- *Enterobacter* and *Klebsiella* form convex colonies which are twice as big as the very smooth *E. coli*, have no metallic sheen and are pink in colour with a dark blue centre. Non-lactose fermenting organisms produce colourless colonies.
- *Candida albicans* colonies incubated in a CO₂ atmosphere have a very peculiar cotton-like appearance which distinguishes them from other *Candida* species that produce classical yeast like colonies.

Quality control
Incubation temperature: 35-37 °C

Incubation time: 18-24 h

Inoculum: Streak isolation or 10³-10⁴CFU (Specificity) according to ISO 11133:2014/Amd 1:2018. Spiral plate Methods or Loop spreading.

Microorganism

Salmonella abony NCTC® 6017
Escherichia coli ATCC® 11775
Escherichia coli ATCC® 25922
Escherichia coli ATCC® 8739
Salmonella typhimurium ATCC® 14028
Pseudomonas aeruginosa ATCC® 27853
Candida albicans ATCC® 10231

Growth

Good to very good
 Good to very good
 Good to very good
 Good to very good
 Good to very good
 Good to very good
 Good

Remarks

Colorless colonies w/o green metallic shine
 Dark violet colonies w. green metallic shine
 Dark violet colonies w. green metallic shine
 Dark violet colonies w. green metallic shine
 Colorless colonies w/o green metallic shine
 Colorless colonies w/o green metallic shine
 Cotton-like colonies in CO₂

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References

- CLESCERI, L.S., A.E. GREENBERG & A.D. EATON (1998) Standard Methods for the Examination of Water and Wastewater. 20th ed. APHA-AWWA-WEF. Washington. DC.
- HOLT-HARRIS, J. E. & TEAGUE O.A. (1916) A New Culture Medium for the Isolation of Bacillus typhosus from Stools J. Infect. Dis. 18:596-600.
- ISO STANDARD 21150 (2006) Cosmetics. Microbiology - Detection of Escherichia coli.
- ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
- LEVINE, M (1918) Differentiation of E. coli and A. aerogenes on simplified Eosin-ethylene Blue Agar. J. Infect. Dis. 23:43-47.
- MENOLASINO, N.I., GRIEVES B. Y PAYNE P. (1960) Isolation and Identification of Coagulase Positive Staphylococci on Levine's Eosin-Methylene Blue Agar. J. Lab. Clin. Med. 56(6) 908-910.
- USP 31 - NF 26 (2008) <61> Microbial Tests. USP Con. Inc. Rockville. MD. USA.
- WELD, J. (1953) Candida albicans: Rapid Identification in Cultures made directly from Human materials Arch. Dermat. Syph. 67(5):473-478.
- WINDLE TAYLOR, E. (1958) The Examination of Water and Water Supplies. Churchill Ltd. 7th ed. London.

Storage

For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 °C to 30 °C).