



Reference : 01-068

Scharlau Microbiology - Technical data sheet

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 7.1 ±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 à 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.



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Quality control

Incubation temperature: 30 - 35 °C

Incubation time: 24 - 48 h

Inoculum: Streak isolation or $\geq 10^9$ CFU (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



Escherichia coli ATCC 8739



Escherichia coli ATCC 8739
"Detail"



Salmonella typhimurium ATCC 14028

References

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- USP 43 – NF 38 (2019) 1st Suppl. <61> Microbial Tests. USP Con. Inc. Rockville, MD, USA

Storage

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