

LEVINE EMB Agar (Eosin Methylene-blue Lactose Agar acc. to LEVINE)

For the isolation and differentiation of *Escherichia coli* and *Enterobacter* and for the rapid identification of *Candida albicans* according to LEVINE (1918, 1921).



In Vitro Diagnostic Medical Device –

For professional use only



Version 17-10-2008
Merck KGaA, 64271 Darmstadt

Principle

Microbiological method.

General Information

The culture medium complies with the recommendations of the APHA Standard Methods for the Examination of Water and Wastewater (1998) and the United States Pharmacopeia XXVI (2003).

Mode of Action

The dyes contained in this medium inhibit the growth of many accompanying Gram-positive microorganisms. According to WELD (1952, 1953) and VOGEL and MOSES (1957), LEVINE EMB Agar can be used to identify *Candida albicans* in clinical specimens, if chlorotetracycline hydrochloride is added to inhibit the entire accompanying bacterial flora. LEVINE EMB Agar can also be utilized for the identification of coagulase-positive staphylococci which grow characteristically as colourless "pin-point" colonies and which show good agreement with the results of the coagulase test (MENOLASINO et al. 1960).

Typical Composition (g/litre)

Peptone from gelatine 10.0; lactose 10.0; di-potassium hydrogen phosphate 2.0; eosin, yellowish 0.4; methylene blue 0.065; agar-agar 13.5.

Preparation

Suspend 36 g/litre, autoclave (15 min at 121 °C), and pour plates. pH: 7.1 ± 0.2 at 25 °C.

The plates are clear and red-brown.

If cultivating *Candida*, add 0,1 mg tetracycline hydrochloride/litre after autoclaving and mix homogeneously. The culture medium then is blue.

Storage

Usable up to the expiry date when stored dry and tightly closed at +15 to +25 °C. Protect from light.

After first opening of the bottle the content can be used up to the expiry date when stored dry and tightly closed at +15 to +25 °C.

Specimen

e.g. Stool.

Clinical specimen collection, handling and processing, see general instruction of use.

See also General Instruction for Use „How to use Dehydrated Culture Media“

For MSDS, warnings and precautions see our website: www.merck-chemicals.com

Experimental Procedure and Evaluation

Inoculate by thinly spreading the sample material on the surface of the culture medium.

Incubation: 1-2 days at 35 °C aerobically.

To obtain a primary culture of *Candida*, incubate the plates containing chlorotetracycline in a 10 % carbon dioxide atmosphere (e.g. with Anaerocult® C or C mini).

Appearance of Colonies	Microorganisms
Diameter 2-3 mm, greenish metallic sheen in reflected light, dark or even black centre in transmitted light	<i>Escherichia coli</i>
Diameter 4-6 mm, graybrown centre in transmitted light, no metallic sheen	<i>Enterobacter</i>
Transparent, amber-coloured	<i>Salmonella</i> and <i>Shigella</i>
Colourless, "pin-point" colonies	Coagulase-positive staphylococci
"Spidery" - or "feathery"	<i>Candida albicans</i>
Yeast-like, round, smooth	Other <i>Candida</i> species. Sometimes <i>Nocardia</i>

Literature

American Public Health Association, American Water Works Association and Water Pollution Control Federation: Standard Methods for the Examination of Water and Wastewater, 20th ed., Washington 1998.

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MENOLASINO, N.I., GRIEVES, B., a PAYNE, P.: Isolation and Identification of coagulase-positive staphylococci on Levine's eosin-methylene blue agar. - *J. Lab. Clin. Med.*, 56 (6); 908-910 (1960).

VOGEL, R.A., a MOSES, M.R.: Welds method for the rapid identification of *Candida albicans* in clinical materials. - *Am. J. Clin. Path.*, 28 (1); 103-106 (1957).

WELD, J.T.: *Candida albicans*. Rapid identification in pure cultures with carbon dioxide on modified eosin-methylene blue medium. - *Arch. Dermat. Syph.*, 66; 691-694 (1952).

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United States Pharmacopeia XXVI, Chapter "Microbial Limit Tests", 1985.

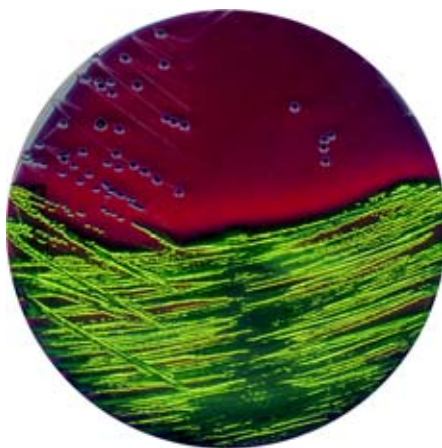
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Ordering Information

Product	Ordering No.	Pack size
LEVINE EMB Agar (Eosin Methylene-blue Lactose Agar acc. to LEVINE)	1.01342.0500	500 g
Anaerobic jar	1.16387.0001	1 ea
Anaeroclip®	1.14226.0001	1 x 25
Anaerocult® C	1.16275.0001	1 x 10
Anaerocult® C mini	1.13682.0001	1 x 25
Plate basket	1.07040.0001	1ea
Tetracycline hydrochloride	EMD Biosciences	

Quality control

Test strains	Growth	Colonies	
		Blue	Metallic sheen
Escherichia coli ATCC 25922	good / very good	+	+
Escherichia coli ATCC 11775	good / very good	+	+
Escherichia coli 194	good / very good	+	+
Enterobacter cloacae ATCC 13047	good / very good	pale blue	-
Shigella sonnei ATCC 11060	good / very good	-	-
Salmonella typhimurium ATCC 14028	good / very good	-	-
Proteus mirabilis ATCC 14273	good / very good	-	-
Staphylococcus aureus ATCC 25923	none / poor	-	-



Escherichia coli ATCC 11775