

Also known as

Cystine Lactose Electrolyte Deficient agar; Broclacin agar

Specification

Cystine, lactose, electrolyte deficient medium, recommended for the isolation and identification of urinary pathogenic bacteria.

Formula * in g/L

Peptone.....	4,000
Casein peptone.....	4,000
Meat extract.....	3,000
Lactose.....	10,000
L-Cystine.....	0,128
Bromothymol blue.....	0,020
Agar.....	15,000

Final pH 7,4 ±0,2 at 25 °C

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

Directions

Add 36 g of powder to 1 L of distilled water and bring to the boil. Sterilize in the autoclave at 121°C for 15 minutes.

Description

This general purpose medium has been recommended for bacteriological analysis. The current formulation is a modification of the original reported by Sandys, that achieves excellent colony differentiation without inhibitors. This fact, and also the careful selection of nutritive components, makes this medium a substrate able to support growth of most urinary pathogenic bacteria.

Presence of lactose as a fermentable sugar allows classic differentiation and, at the same time, lack of electrolytes suppresses swarming waves by members of the *Proteus* and occasionally *Shigella* species.

Typical colony characteristics after 18 hours of incubation:

- *Escherichia coli*: Yellowish colonies, opaque, with a core, 1,25 mm in diameter. Non fermentative strains give rise to blue colonies.
- *Klebsiella spp.*: mucoid colonies of variable colour, from yellow to blue-white.
- *Salmonella spp.*: Plain and blue colonies.
- *Enterococcus faecalis*: Yellow colonies. 0,5 mm diameter.
- *Staphylococcus aureus*: Convex yellow colonies. 0,75 mm diameter.
- Coagulase negative staphylococci: White or light yellow colonies, with haloes and the same size as those of enterococci.
- *Proteus spp.*: Blue, translucent and smaller than *E.coli*.
- *Pseudomonas aeruginosa*: Plain, matt and wrinkled colonies with green colour and irregular border.
- Corynebacteria: Pointed and grey colonies.
- Lactobacilli: Matt colonies, similar to corynebacteria.

Technique

Use inoculation methods, standardised in the laboratory (inoculation by streak, spiral plate methods, etc..)

Quality control

Incubation temperature: 37 °C ±1.0 **Incubation time:** 21 ± 3h

Inoculum: Practical range 100 ± 20 CFU. min. 50 CFU (productivity) according to ISO 11133:2014/Amd 1:2018.

Microorganism

Escherichia coli ATCC® 25922
Salmonella typhimurium ATCC® 14028
Staphylococcus aureus ATCC® 25923
Proteus mirabilis ATCC® 12453
Proteus mirabilis ATCC® 43071
Proteus mirabilis ATCC® 29906

Growth

Productivity > 0.70
Productivity > 0.70
Productivity > 0.70
Productivity > 0.70
Productivity > 0.70
Productivity > 0.70

Remarks

Opaque yellowish colonies
Blue colonies
Opaque yellowish colonies
Blue colonies without swarming waves
Blue colonies without swarming waves
Blue colonies w. moderate swarming waves

References

- ATLAS, R.M., L.C. PARKS (1993) Handbook of Microbiological Media. CRC Press, Inc. London.
- BARON, E.J., L.R. PETERSON & S.M. FINEGOLD (1994) Bailey & Scott's Diagnostic Microbiology. 9th ed. Mosby-Year Book Inc. St Lous. MO. USA.
- ISENBERG, H.D. (1992) Clinical Microbiology Procedures Handbook. ASM Washington. DC. USA.
- ISO 11133:2014/ Adm 1:2018. Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.
- MACKEY, J.P. & G.H. SANDYS (1966) Diagnosis of urinary tract infections. Brit. Med. J. 3:1.173.
- MURRAY, P.R., E.J. BARON, M.A. PFALLER, F.C. TENOVER & R.H. YOLKEN (1995) Manual of Clinical Microbiology 6th ed. ASM Washington. DC. USA.
- SANDYS, G H. (1960) A new method of preventive swarming of Proteus sp. J. Med. Lab. Tech. 17:224.

Storage

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