



Reference : 01-047

Scharlau Microbiology - Technical data sheet

Product :
CLED AGAR



Also known as

Cystine Lactose Electrolyte Deficient agar; Brolacin agar

Specification

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

Formula * in g/L

Peptone.....	4,000
Tryptone.....	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..)



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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

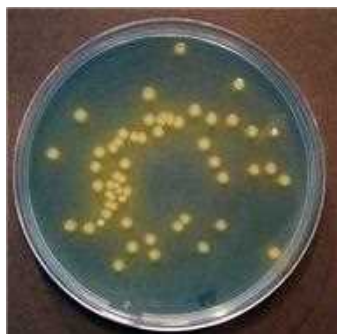
Blue colonies

Opaque yellowish colonies

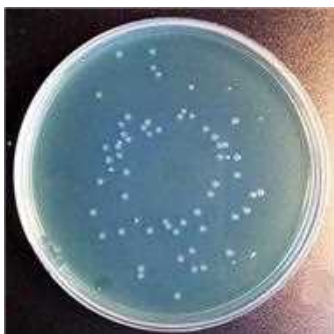
Blue colonies without swarming waves

Blue colonies without swarming waves

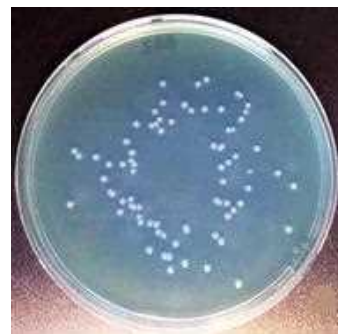
Blue colonies w. moderate swarming waves



Escherichia coli ATCC 25922



Proteus mirabilis ATCC 12453



Proteus mirabilis ATCC 43071

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.
- MACKAY, 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).