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 ºC

* 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:** 18-24 h

Inoculum: Practical range 100 ± 20 CFU. min. 50 CFU (productivity)/ 10^4-10^6 CFU (selectivity)/ 10^3-10^4 CFU (specificity), according to ISO 11133:2014/Amd 1:2018.

Microorganism	Growth	Remarks
Escherichia coli ATCC® 25922	Good (Specificity)	Opaque yellowish colonies
Salmonella typhimurium ATCC® 14028	Productivity > 0.70	Blue colonies
Staphylococcus aureus ATCC® 25923	Productivity > 0.70	Opaque yellowish colonies
Proteus mirabilis ATCC® 12453	Productivity > 0.70	Blue colonies without swarming waves
Proteus mirabilis ATCC® 43071	Productivity > 0.70	Blue colonies without swarming waves
Proteus mirabilis ATCC® 29906	Productivity > 0.70	Blue colonies w. moderate swarming waves

References

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· 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 ºC to 30 ºC).