

Product Information

55420 CLED Agar (Cystine-Lactose-Electrolyte Deficient Agar; Bromothymol-blue Lactose Cystine Agar)

CLED Agar is recommended for isolation, enumeration and identification of urinary pathogens on the basis of lactose fermentation

Composition:

Ingredients	Grams/Litre
Peptic digest of animal tissue	4.0
Casein enzymic hydrolysate	4.0
Beef extract	3.0
Lactose	10.0
L-Cystine	0.128
Bromo thymol blue	0.02
Agar	15.0
Final pH 7.3 +/- 0.2 at 25°C	

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Directions:

Suspend 36.15g in 1000ml distilled water. Boil to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes.

Principle and Interpretation:

Peptic digest of animal tissue, beef extract and casein hydrolysate act as a source of nitrogen, carbon and amino acids. Lactose is the fermentable carbohydrate. Bromothymol blue change to yellow in case of acid production during fermentation of lactose or change to deep blue in case of alkalisation. Lactose-positive bacteria build yellow colonies. Bacteria which decarboxylate L-Cystine cause an alkaline reaction and build deep blue colonies. The lack of electrolytes suppresses the swarming of *Proteus* (3).

Bacteriuria may be quantitated by inoculating the surface of an solid medium by proper dilution. Inoculate the medium immediately after urine collection. *Shigella* species may not grow on this media. When the sample is collected after an antibiotic therapy or the urine pH is less than may suppress the grow and give a lower bacterial count.

Cultural characteristics after 24 hours at 35°C.

Organisms (ATCC)	Growth	Appearance of colony
<i>Escherichia coli</i> (25922)	+++	yellow, opaque, center slightly deeper yellow
<i>Klebsiella pneumoniae</i> (13883)	+++	yellow to whitish blue
<i>Citrobacter freundii</i> (8090)	+++	yellow
<i>Salmonella serotype Typhi</i> (6539)	+++	bluish
<i>Shigella flexneri</i> (29903)	+++	blue
<i>Proteus vulgaris</i> (13315)	+++	blue
<i>Pseudomonas aeruginosa</i> (27853)	+++	blue
<i>Enterococcus faecalis</i> (29212)	+++	Slight yellowish or greenish
<i>Streptococcus cremoris</i> (19527)	+++	yellow, small, opaque
<i>Staphylococcus aureus</i> (25923)	+++	deep yellow

References:

1. W. Graninger, et al., Rapid screening for bacteriuria, *Infection* 20, 9 (1992)
2. P. Munoz, et al., *Diagn. Microbiol. Infect. Dis.*, 15, 287 (1992)
3. G.H. Sandys, A new method of preventing swarming of *Proteus* sp. with a description of a new medium suitable for use in routine laboratory practice, *J. Med. Lab. Technol.*, 17, 224 (1960)