

CLED Agar

(Cystine Lactose Electrolyte Deficient)

For the cultivation of gram positive and gram negative urinary tract bacteria.
It inhibits the Proteus swarming

Formula in grams per liter:

Lactose	10,00	Casein Peptone	4,00
Gelatin peptone	4,00	Beef Extract	3,00
L-Cystine	0,128	Bromothymol Blue	0,02
Bacteriological Agar	15,00		

Final pH: 7,3 ± 0,2 at 25 °C

Preparation:

Suspend 36 grams of the medium in one litre of distilled water. Soak 10-15 minutes and mix well. Heat slowly while stirring frequently boil for a minute. Sterilize in the autoclave at 121°C (15 lbs. of sp.) for 15 minutes. Pour into Petri dishes. When the medium is solidified, invert the plates to avoid excess moisture.

Uses:

CLED Agar is a non selective differential plating medium for the growth and enumeration of urinary tract microorganisms. Omitting sodium chloride inhibits the Proteus swarming and supports the growth of a great majority of bacteria causing urinary tract infections and is used to differentiate and identify them. The presence of bacterial contaminants like diphtheroids, lactobacilli and other microbes indicate the degree of care taken with the handling of the urine specimen.

Urinary cultures should be performed with the first early morning sample after careful cleansing of the genital area. Do not use the first portion of the urine stream but collect the sample from the midstream. The microorganisms which cause infection in the urinary tract are generally abundant and of only one species. E. coli is the organism most frequently isolated. The seeding of the sample can be made by the dilution method or by streaking on the surface of agar with a calibrated loop. Count the colonies after 18 hours of incubation at 35°C. Report the number of colonies per ml. of urine. Remember that a count of 100.000 (10)⁵/ml. or more is an indication of a significant clinical urinary tract infection.

CHARACTERISTICS OF THE COLONIES

Escherichia coli: are large, elevated yellow, opaque, with a center slightly darker. The agar is yellow. **Enterobacter:** are similar to E. coli: are but mucoid and larger in size. Yellow agar.

Klebsiella: are large, yellow or yellowish-white. Highly mucoid and elevated. It can present a light blue shade. Yellow agar. **Proteus:** are Blue, translucent with irregular edges. Slightly elevated.

Pseudomonas: are Pale blue-green. Typical matte surface and irregular edges. "Sweet" odor. Blue-green agar. **Salmonella, Shigella, Serratia, and Providencia:** are From blue to intense blue.

Streptococcus faecalis: are Very small, from 0.4 mm, yellow, opaque. Yellow agar.

Staphylococcus: are small, yellow intense colors, opaque. Yellow agar. **Corynebacteria:** are Very small, gray.

Microbiological Tests:

Microorganisms	Growth	Color of the medium
<i>Enterobacter aerogenes</i> ATCC 13048	Satisfactory	Light yellow-blue
<i>Escherichia coli</i> ATCC 25922	Satisfactory	Yellow
<i>Proteus vulgaris</i> ATCC 13315 (swarming inhibited)	Satisfactory	Blue-blue green
<i>Staphylococcus aureus</i> ATCC 13315	Satisfactory	Light yellow - •
<i>Streptococcus faecalis</i> ATCC 19433	Satisfactory	Light yellow - •

• = without changes

