CLED Agar (Cystine Lactose Electrolyte Deficient)

Cat. 1016

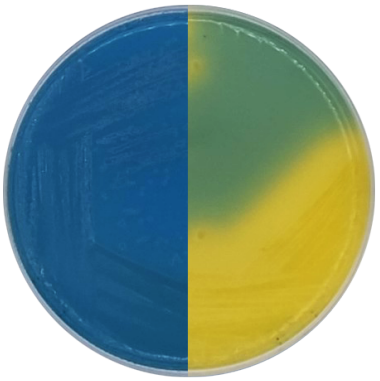
For the inhibition of Proteus swarming in the cultivation of Gram-positive and Gram-negative urinary tract bacteria.

Practical information

Aplications	Categories
Selective isolation	Urinary tract pathogens

Industry: Clinical

CE
IVD



Principles and uses

CLED Agar (Cystine Lactose Electrolyte Deficient) 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 the vast 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.

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.

Beef Extract and Casein peptone provide nitrogen, vitamins, minerals and amino acids essential for growth. Lactose is the fermentable carbohydrate providing carbon and energy. L-Cystine is added as a growth supplement for cystine dependent coliforms. Differentiation of lactose fermenters and lactose non fermenters is achieved using bromothymol blue as a pH indicator. Organisms that ferment lactose will lower the pH and change the color of the medium from green to yellow. Bacteriological agar is the solidifying agent.

Formula in g/L

Bacteriological agar	15	Bromothymol blue	0,02
Casein peptone	4	Gelatin peptone	4
Lactose	10	L-Cystine	0,128
Beef extract	3		

Typical formula g/L * Adjusted and/or supplemented as required to meet performance criteria.

Preparation

Suspend 36 grams of the medium in one liter of distilled water. Mix well and dissolve by heating with frequent agitation. Boil for one minute until complete dissolution. Sterilize in autoclave at 121 ºC for 15 minutes. Cool to 50 ºC, mix well and dispense into plates.

Instructions for use

For clinical diagnosis, the type of samples are urine.

- Inoculate on the surface 0,1 ml of the dilution 10^-2 of the urine sample.
- Incubate in aerobic conditions at 35±2 °C for 24-48 hours.
- Reading and interpretation of results.
- Report the number of colonies per ml of urine.
- A count of 100.000 (10^5) CFU/ml or more is an indication of a significant clinical urinary tract infection.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Greenish beige	Green	7,3±0,2

Microbiological test

Incubation conditions: (35±2 ºC / 24-48 h)

Microorganisms	Specification	Characteristic reaction
Klebsiella aerogenes ATCC 13048	Good growth	Light yellow-blue medium
Proteus vulgaris ATCC 13315	Good growth (swarming inhibited)	Blue-blue green medium
Klebsiella pneumonieae ATCC 13883	Good growth	
Enterococcus faecalis ATCC 19433	Good growth	Light yellow medium
Escherichia coli ATCC 25922	Good growth	Yellow medium
Staphylococcus aureus ATCC 25923	Good growth	Light yellow medium

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Bebis, T. D. J. Med. Lab. Technol, 26-38-41. 1968. Mackey, J. R. and Sandys, G.H. 1965.
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