Urinary Tract Infections Chromogenic (UTIC) Agar Plate (M1100)

Recommended for presumptive identification and confirmation of microorganisms mainly causing urinary tract infections.

Composition

Ingredients	g/ L
Peptone mixture	15.000
Chromogenic mixture	2.450
Agar	15.000

Description

Urinary Tract Infections Chromogenic Agar (UTIC) is a chromogenic medium for the presumptive identification and confirmation of microorganisms causing urinary tract infections.
The common condition is cystitis, due to infection of the bladder with a uropathogenic bacterium, which most frequently is Escherichia coli, but sometimes Staphylococcus saprophyticus or especially in hospital-acquired infections, Klebsiella species, Proteus mirabilis, other coliforms, Pseudomonas aeruginosa or Enterococcus.
UTIC agar facilitates and expedites the identification of some gram-negative bacteria and some gram-positive bacteria on the basis of different contrasted colony colours produced by reactions of genus or species specific enzymes with two chromogenic substrates. The chromogenic substrates are specifically cleaved by enzymes produced by Enterococcus species, E.coli and coliforms. Presence of amino acids like phenylalanine and tryptophan from peptones helps for detection of tryptophan deaminase activity, indicating the presence of Proteus species, Morganella species and Providencia species.
One of the chromogenic substrate is cleaved by ß-glucosidase possessed by Enterococci resulting in formation of blue colonies. E.coli produce pink colonies due to the enzyme ß-D-galactosidase that cleaves the other chromogenic substrate.
Further confirmation of E.coli can be done by performing the indole test. Coliforms produce purple coloured colonies due to cleavage of both the chromogenic substrate. Colonies of Proteus, Morganella and Providencia species appear brown because of tryptophan deaminase activity. Peptone special provides nitrogenous, carbonaceous compounds, long chain amino acids,vitamins and other essential growth nutrients.

Specimen Collection and Handling

For clinical samples follow appropriate techniques for handling specimens as per established guidelines. After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use only. For professional use only. Follow good microbiological lab practices while handling specimens and culture.

Limitations

1. Since it is an enzyme-substrate based reaction, the intensity of colour may vary with isolates.
2. Each lot of the medium has been tested for the organisms specified on the COA.
3. The surface of the medium should be dry when inoculated.

Performance and Evaluation

Performance of the medium is expected when used as per the direction on the label within the expiry period when stored at recommended temperature.

Quality control

Physical/Chemical control

Color : Cream to yellow pH: 6.60-7.20

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Microbiological activity

Organisms	Inoculum CFU/ml	Growth
Escherichia coli ATCC 25922	50-100	Good growth, Purple to magenta colonies
Klebsiella pneumonia ATCC 700603	50-100	Good growth, blue to purple mucoid colonies
Pseudomonas aeruginosa ATCC 27853	50-100	Good growth, colourless colonies (greenish pigment may be observed)
Proteus mirabilis ATCC 12453	50-100	Good growth, light brown colonies
Enterococcus faecalis ATCC 29212	50-100	Good growth, blue-green small colonies
Staphylococcus aureus ATCC 25923	50-100	Good growth, golden yellow colonies

Storage and Shelf Life

Store between 2-8°C. Use before expiry date on the label. Product performance is best if used within stated expiry period.

Disposal

User must ensure safe disposal by autoclaving and/or incineration of used or unusable preparations of this product. Follow established laboratory procedures in disposing of infectious materials and material that comes into contact with sample must be decontaminated and disposed of in accordance with current laboratory techniques.

Reference

1. Collee J. G., Fraser A. G., Marmion B. P., Simmons A., (Eds.), Mackie and McCartney, Practical Medical Microbiology, 1996, 14th Edition, Churchill Livingstone.
2. Pezzlo M., 1998, Clin. Microbiol. Rev., 1:268-280.
3. Wilkie M. E., Almond M. K., Marsh F. P., 1992, British Medical Journal 305:1137-1141.
4. Friedman M. P. et al, 1991, J. Clin. Microbiol., 29:2385-2389.
5. Murray P., Traynor P. Hopson D., 1992, J. Clin. Microbiol., 30:1600- 1601.