Urinary Tract Infections Chromogenic Agar (UTIC)

Cat. 1424

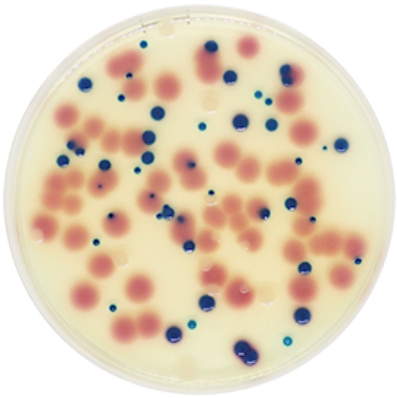
For the presumptive detection and differentiation of organisms causing urinary tract infections

Practical information

Aplications	Categories
Detection	Urinary tract pathogens

Industry: Clinical

CE
IVD



Principles and uses

Urinary Tract Infections Chromogenic Agar (UTIC) is a chromogenic medium for the presumptive identification and confirmation of microorganisms causing urinary tract infections. The microorganisms which cause infections in the urinary tract are generally abundant and of only one species: E. coli is the organism most frequently isolated.

Peptone mixture provides nitrogen, vitamins, minerals and amino acids essential for growth. The medium includes two chromogenic substrates which are cleaved by enzymes produced by Enterococcus spp, Escherichia coli and coliforms. It also includes phenylalanine and tryptophane providing a presumptive indication of the tryptophane deaminase activity, which illustrates the presence of Proteus spp., Morganella spp, and Providencia spp. (brown colonies). This is based on CLED Agar. Bacteriological agar is the solidifying agent.

One of the chromogenes is metabolised by ß-glucosidase enzyme activity, allowing the specific detection of enterococci which form blue or turquoise colonies. The other chromogen is cleaved ß-galactosidase, an enzyme produced by E. coli which grows as pink colonies. (In case of unreliable colony results, carry out Indol test).

When bacteria cleaves both chromogenic substrates, it results in dark blue - purple colonies, characteristical of coliforms bacteria as E. aerogenes, K.pneumoniae and .

It should be noted that, as with all chromogenic media, microorganisms with atypical enzyme patterns may give anomalous reactions. For example 45% of Enterobacter cloacae do not contain ß-glucosidase, therefore resulting in pink colonies like C. freundii, not distinguishable from E. coli. For confirmation, the Indol test must be performed.

Formula in g/L

Bacteriological agar	16	Peptone mixture	16
Tryptophan	2	Growth factors	13
Chromogenic Substrate	0,5		

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

Preparation

Suspend 47,5 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 45-50 ºC, mix well and dispense into plates.

Instructions for use

For clinical diagnosis, the type of sample is urine. Urine from the middle part of urination, from the catheter or collection can be used by suprapubic bladder puncture.
- Inoculate on the surface. Parallel striae with the handle or hyssop.

- Incubate in aerobic conditions at 35±2 °C for 18-24 hours.
- Reading and interpretation of results.

Quality control

Solubility	Appareance	Color of the dehydrated medium	Color of the prepared medium	Final pH (25ºC)
w/o rests	Fine powder	Beige	Amber, slightly opalescent	7,2±0,2

Microbiological test

Incubation conditions: (35±2 ºC / 18-24 h).

Microorganisms	Specification	Characteristic reaction
Klebsiella aerogenes ATCC 13048	Good growth	Dark Blue colony
Klebsiella pneumoniae ATCC 13883	Good growth	Dark Blue colony
Salmonella typhimurium ATCC 14028	Good growth	Amber colony
Enterococcus faecalis ATCC 19433	Good growth	Light blue colony
Escherichia coli ATCC 25922	Good growth	Pink colony
Staphylococcus aureus ATCC 25923	Good growth	(natural pigmentation) White cream colony
Proteus mirabilis ATCC 25933	Good growth	Light brown colony
Pseudomonas aeruginosa ATCC 27853	Good growth	Amber colony

Storage

Temp. Min.:2 ºC
Temp. Max.:25 ºC

Bibliography

Samra Z, Heifetz M, Talmor J, Bain E and Bahar J. Evaluation of use of a new chromogenic agar in detection of urinary tract pathogens. J Clin Microbiol. 1998;36(4]: 990-4.