# URINARY TRACT INFECTIONS CHROMOGENIC AGAR (UTIC)

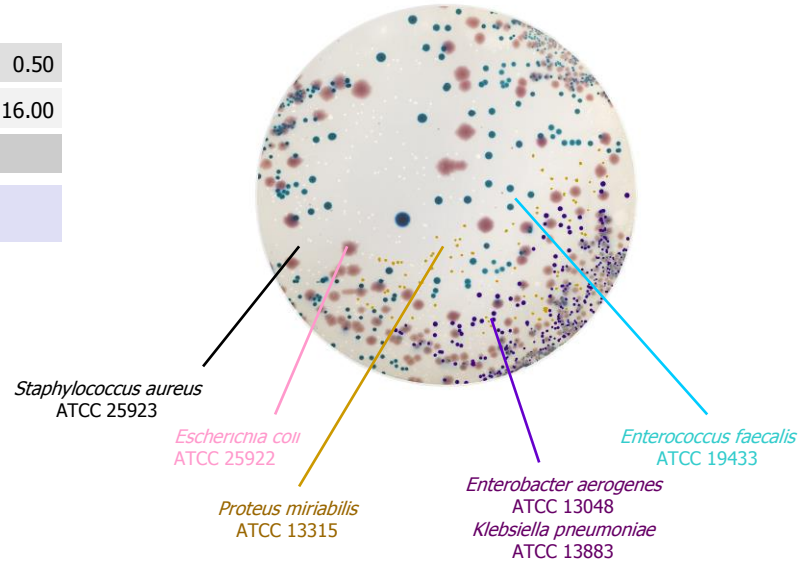
**CAT Nº: 1424**

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

## FORMULA IN g/l

| | | | |
|---|---|---|---|
| Peptone Mixture | 16.00 | Chromogenic Substrate | 0.50 |
| Growth factors | 13.00 | Bacteriological Agar | 16.00 |
| Tryptophan | 2.00 | | |

**Final pH 7.2 ± 0.2 at 25ºC**




## 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 121ºC for 15 minutes. Cool to 45-50ºC, mix well and dispense into plates. The medium should be stored at 8-15°C. The color of the prepared medium is amber, slightly opalescent.

The dehydrated medium should be homogeneous, free-flowing and beige in color. If there are any physical changes, discard the medium.

## USES

URINARY TRACT INFECTION 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 β-glucosidase enzyme activity, allowing the specific detection of enterococci which form blue or turquoise colonies. The other chromogen is cleaved β-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 *C. freundii.*

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 β-glucosidase, therefore resulting in pink colonies not distinguishable from *E. coli*. For confirmation, the Indol test must be performed.

## MICROBIOLOGICAL TEST

The following results were obtained in the performance of the medium from type cultures after incubation at a temperature of 35 ± 2ºC and observed 18-24 hours.

| Microorganisms | Growth | Colony color |
|---|---|---|
| *Escherichia coli* ATCC 25922 | Good | Pink |
| *Enterobacter aerogenes* ATCC 13048 | Good | Dark Blue |
| *Klebsiella pneumonieae* ATCC 13883 | Good | Dark Blue |
| *Proteus miriabilis* ATCC 13315 | Good | Light Brown |
| *Staphylococcus aureus* ATCC 25923 | Good | (natural pigmentation] White Cream |
| *Enterococcus faecalis* ATCC 19433 | Good | Light Blue |
| *Pseudomonas aeruginosa* ATCC 27853 | Good | Amber |
| *Salmonella typhi* ATCC 6539 | Good | Amber |
| *Salmonella typhimurium* ATCC 14028 | Good | Amber |

## 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.

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## STORAGE

Once opened keep powdered medium closed to avoid hydration.