

Michrom™ UTI Agar Plate

Intended Use

Michrom UTI Agar Plate is used for presumptive identification of microorganisms mainly causing urinary tract infections.

Summary

Urinary tract infections are bacterial infections affecting parts of urinary tract. The common symptoms of urinary tract infection are urgency and frequency of micturition, with associated discomfort or pain. The common condition is cystitis, due to infection of the bladder with an 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 faecalis*.

Michrom UTI Agar has broader application as a general nutrient agar for isolation of various microorganisms. It 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 specific enzymes with two chromogenic substrates.

Principle

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 substrates is cleaved by β -glucosidase possessed by *Enterococci* resulting in formation of blue colonies. *E. coli* produce pink colonies due to the enzyme β -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 and other essential growth nutrients.

Formula*

Ingredients	g/L
Peptone Special	15.0
Chromogenic Mixture	2.45
Agar	15.0

*Adjusted to suit performance parameters.

Additional Material Required

Bacteriological Incubator.

Instructions for use

1. Open the sterile pack and remove Michrom UTI Agar Plate aseptically.
2. Inoculate/streak the plate and incubate in inverted position as per standard procedure.

Reading and interpretation

1. After incubation, observe the microbial growth and count the colonies.
2. Interpretation is assured by user.

Quality Control

Appearance: Gel with smooth and even surface, without any cracks, bubbles and drying or shrinking of media.

Colour of Medium: Light yellow coloured, very slightly opalescent gel in petriplates.

Quantity of Medium: 27 ± 2 g in 90 mm petriplate.

pH at $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$: 6.8 ± 0.2

Cultural Response: Cultural characteristics observed after an incubation at 30°C - 35°C for 18-24 hours.

Organism (ATCC)	Growth	Colour of Colony
<i>Escherichia coli</i> (25922)	Good	Dark Pink
<i>Enterococcus faecalis</i> (29212)	Good	Blue, small
<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i> (10031)	Good	Indigo, mucoid
<i>Pseudomonas aeruginosa</i> Strain Boston 41501 (27853)	Good	Transparent with halo may have green fluorescence
<i>Staphylococcus aureus</i> subsp. <i>aureus</i> (25923)	Good	Cream
<i>Proteus mirabilis</i> (25933)	Good	Orangish brown with halo

Precautions/Limitations

- Michrom UTI Agar Plates are used for the direct identification, differentiation and enumeration of common urinary tract pathogens. The medium is suitable for the isolation of many aerobically growing micro-organisms, such as *Enterobacteriaceae*, *Pseudomonas* and other non-fermenting Gram negative rods, enterococci, staphylococci, and many others from urine specimens.
- It has advantages over other differential media used in the isolation, differentiation and enumeration of UTI pathogens, such as CLED Agar and MacConkey Agar.
- It allows for the differentiation and identification of *E. coli* and enterococci without confirmatory testing.
- Since most of the common urinary tract infections are caused by *E. coli* and/or enterococci, the use of this medium significantly reduces the workload and time for inoculating and reading identification systems which are necessary when conventional media are used.

Storage and Shelf Life

1. Store between 2°C-8°C to avoid water condensation. Condensation can be prevented by avoiding quick temperature shifts and mechanical stress.
2. Under optimal conditions, the medium has a shelf life of 3 months. Use before expiry mentioned on the label.

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. Friedman M. P. et al., 1991, J. Clin. Microbiol., 29:2385-2389.
4. Murray P., Traynor P. Hopson D., 1992, J. Clin. Microbiol., 30:1600- 1601.
5. Soriano F., Ponte C., 1992, J. Clin. Microbiol., 30:3033-3034.
6. Merlino et al., 1995, Abstr. Austr. Microbiol. 16(4):17-3.
7. Data on file: Microxpress®, A Division of Tulip Diagnostics (P) Ltd.

Product Presentation:

Cat No.	Product	Pack Size
205130940020	Michrom UTI Agar Plate	20 Plates
205130940100	Michrom UTI Agar Plate	100 Plates

Disclaimer

Information provided is based on our inhouse technical data on file, it is recommended that user should validate at his end for suitable use of the product.