



HiCrome UTI Selective Agar

M1505

HiCrome UTI Selective Agar is chromogenic differential medium for identification, differentiation and confirmation of enteric bacteria from specimens such as urine, which may contain large number of *Proteus* species as well as potentially pathogenic gram-positive organisms.

Composition**

Ingredients	Gms / Litre
Peptone	18.000
Casein enzymic hydrolysate	4.000
Meat extract B#	6.000
Bile salts	1.500
Chromogenic mixture	12.440
Agar	15.000
Final pH (at 25°C)	7.2±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 56.94 grams in 1000 ml distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 45-50°C and pour into sterile Petri plates.

Principle And Interpretation

HiCrome UTI Selective Agar is formulated on the basis of work carried out by Pezzlo (1), Wilkie et al (2), Friedman et al (3), Murray et al (4), Soriano and Ponte (5) and Merlino et al (6). These media is a modification of HiCrome UTI Agar (M1353), which can be used in place of MacConkey Agar for isolation, and confirmation 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 species specific enzymes with two chromogenic substrates.

Enzymes produced by *Enterococcus* species, *Escherichia coli* and coliforms cleave the chromogenic substrates incorporated in the medium. Presence of rich source of phenylalanine and tryptophan from peptone and casein enzymic hydrolysate provides an indication of tryptophan deaminase activity, revealed with TDA Reagent (R036) indicating the presence of *Proteus* species, *Morganella* species and *Providencia* species, which appear brown. One chromogenic substrate is cleaved by β -glucosidase possessed by Enterococci resulting in formation of blue colonies. *E.coli* produce purple-magenta colonies due to the enzyme β -D-galactosidase which cleaves the other chromogenic substrate. Further confirmation of *E.coli* can be done by performing indole test using DMACA Reagent (R035). Also some strains of *Enterobacter cloacae* lacking β -glucosidase show pink-colonies indistinguishable from *E.coli*. The DMACA reagent for indole test (should be performed on filter paper) distinguishes between *E.coli* and *Enterobacter*, and also between *Proteus mirabilis* and other species. Coliforms produce purple coloured colonies due to cleavage of both the chromogenic substrates.

Peptone, meat extract B and casein enzymic hydrolysate provides nitrogenous, carbonaceous compounds and other essential growth nutrients. HiCrome UTI Selective Agar is made selective by the addition of bile salts, which selectively inhibits gram-positive bacteria.

Quality Control

Appearance

Cream to yellow homogeneous free flowing powder

Gelling

Firm, comparable with 1.5% Agar gel

Colour and Clarity of prepared medium

Light amber coloured, clear to slightly opalescent gel forms in Petri plates

Reaction

Reaction of 5.69% w/v aqueous solution at 25°C. pH : 7.2±0.2

pH

7.00-7.40

Cultural Response

M1505: Cultural characteristics observed after an incubation at 35 - 37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth	Recovery	Colour of Colony	TDA (add 1-2 drops of TDA reagent)	DMACA (transfer colony on filter paper dipped in DMACA reagent)
<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	≥50%	purple-magenta	negative reaction	positive reaction, formation of blue purple colour around growth
<i>Enterococcus faecalis</i> ATCC 29212	50-100	fair	20-30%	blue-blue green (small)	negative reaction	negative reaction
<i>Klebsiella pneumoniae</i> ATCC 13883	50-100	luxuriant	≥50%	blue to purple, mucoid	negative reaction	negative reaction
<i>Proteus mirabilis</i> ATCC 12453	50-100	luxuriant	≥50%	light brown	positive reaction development of brown colouration	negative reaction
<i>Pseudomonas aeruginosa</i> ATCC 27853	50-100	luxuriant	≥50%	colourless (greenish pigment may be observed)	negative reaction	negative reaction
<i>Staphylococcus aureus</i> ATCC 25923	≥10 ³	inhibited	0%			

Storage and Shelf Life

Store dehydrated powder and prepared medium at 2-8°C. Use before expiry period on the label.

Reference

1. Pezzlo M., 1998, Clin. Microbiol. Rev., 1:268-280
2. Wilkie M. E., Almond M. K. and Marsh F. P., 1992, British Medical Journal, 305:1137-1141.
3. Friedman M. P. et al, 1991, J. Clin. Microbiol., 29:2385-2389.
4. Murray P. R., Tenover F. C. and Tenover F. C., 1992, J. Clin. Microbiol., 30:1600-1601.
5. Soriano F. and Ponte C., 1992, J. Clin. Microbiol., 30:3033-3034.
6. Merlino et al, 1995, Abstr. Austr. Microbiol., 16(4):17-3.

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