HiCrome™ UTI Agar, Modified / HiCrome™ UTI Selective Agar

M1418/
M1505

A 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 potentially pathogenic gram - postive organisms.

Composition **

	M1418	M1505
Ingredients	Grams/Litre	Grams/Litre
Peptone	18.00	18.00
Tryptone	4.00	4.00
HM peptone B#	6.00	6.00
Chromogenic mixture	12.44	12.44
Bile salts	-	1.50
Agar	15.00	15.00

Final pH (at 25°C) 7.2 ± 0.2
** Formula adjusted, standardized to suit performance parameters
#Equivalent to Beef extract

Directions

Suspend 56.94 grams of M1505 or 55.44 grams of M1418 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. Mix well and pour into sterile Petri plates.

Principle and Interpretation

HiCrome™ UTI Agar, Modified/ HiCrome™ UTI Selective Agar is formulated on the basis of work carried out by Pezzlo (4), Wilkie et al (6), Friedman et al (1), Murray et al (3), Soriano and Ponte (5) and Merlino et al (2). These media are the modifications 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.

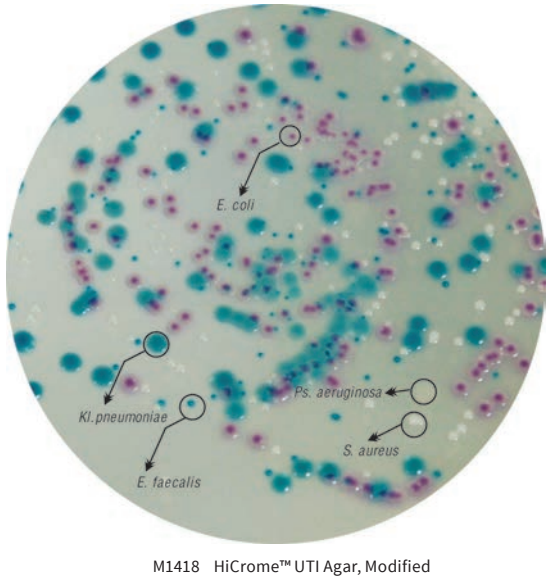
Enzymes produced by *Enterococcus* species, *Escherichia coli* and coliforms cleave the chromogenic substrates incorporated in the medium. Presence of rich source of phenylalanine and tryptophan from peptone and tryptone provides an indication of tryptophan deaminase activity, revealed with TDA Reagent (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 to 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 TDA reagent between *Proteus mirabilis* and other species. Coliforms produce purple coloured colonies due to cleavage of both the chromogenic substrates. Peptone, HM peptone B and Tryptone provides nitrogenous and carbonaceous compounds, long chain amino acids and other essential growth nutrients. HiCrome™ UTI Selective Agar is made selective by the addition of bile salts, which selectively inhibits gram-positive bacteria.

Type of specimen

Clinical samples

Specimen Collection and Handling

For clinical samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (7, 8). After use, contaminated materials must be sterilized by autoclaving before discarding.



M1418 HiCrome™ UTI Agar, Modified

HiCrome™ Veg™ Single Streak Rapid Differentiation Series *Freedom from BSE / TSE worries*

HiCrome™ UTI Agar, Modified / HiCrome™ UTI Selective Agar (M1418/M1505) is also available as HiCrome™ UTI HiVeg™ Agar, Modified / HiCrome™ UTI Selective HiVeg™ Agar(MV1418/MV1505) wherein all the animal origin nutrients have been replaced by vegetable based nutrients.

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M1418/ M1505

A 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 potentially pathogenic gram - postive organisms.

Warning and Precautions

In Vitro diagnostic use only. Read the label before opening the container. Wear protective gloves/protective clothing/eye protection/face protection. Follow good microbiological lab practices while handling specimens and culture. Standard precautions as per established guidelines should be followed while handling clinical specimens. Safety guidelines may be referred in individual safety data sheets

Limitations

1. Some strains of *Enterobacter cloacae* lacking β-glucosidase show pink colonies indistinguishable from *E. coli*.
2. TDA reagent between *Proteus mirabilis* and other species.

Performance and Evaluation

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

Quality Control

Appearance of Powder : Cream to yellow coloured, 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 5.54% w/v of M1418 or 5.69% w/v of M1505 aqueous solution at 25°C. pH:7.2 ± 0.2.

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

Organisms (ATCC)	Inoculum (CFU)	Growth «	Recovery «	Growth ««	Recovery ««	Colour of colony	TDA #	DMACA ##
Escherichia coli (25922) (00013*)	50-100	luxuriant	≥70%	luxuriant	≥50%	purple-magenta	-	+
Proteus mirabilis (12453)	50-100	luxuriant	≥70%	luxuriant	≥50%	light brown	+	-
Klebsiella pneumoniae (13883) (00097*)	50-100	luxuriant	≥70%	luxuriant	≥50%	blue to purple, mucoid	-	-
Pseudomonas aeruginosa (27853) (00025*)	50-100	luxuriant	≥70%	luxuriant	≥50%	colour-less greenish pigment may be observed	-	-
Enterococcus faecalis (29212) (00087*)	50-100	luxuriant	≥70%	fair	20-30%	blue - blue green (small)	-	-
Staphylococcus aureus subsp aureus (25923) (00034*)	50-100	luxuriant	≥70%	inhibited	0%	golden yellow*	-	-

Key : TDA + : Tryptophan deaminase present , TDA - : Tryptophan deaminase absent
DMACA + : Indole positive, DMACA - : Indole negative,
«: on HiCrome UTI Agar, Modified «« : on HiCrome UTI Selective Agar
: Add 1-2 drops of TDA reagent directly on suspected colony. Brown colouration-positive.
: Transfer suspected colony on filter paper, dipped in DMACA reagent. Bluish purple colouration- positive.
* = corresponding WDCM Numbers

Storage and Shelf-life

Store between 2-8°C in a tightly closed container and the prepared medium at 2-8°C. Use before expiry date on the label. On opening, product should be properly stored dry, after tightly capping the bottle inorder to prevent lump formation due to the hygroscopic nature of the product. Improper storage of the product may lead to lump formation. Store in dry ventilated area protected from extremes of temperature and sources of ignition Seal the container tightly after use. 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 clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (8, 9).

References

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