



Technical Data Sheet

Format no: RDM/TD/UTI-02

Revision: 01 / 2024

Chromogenic UTI Modified Agar

RDM-UTI-02

Principle

Chromogenic UTI modified agar is used for presumptive identification of microorganisms causing urinary tract infections. The organisms mainly responsible for urinary tract infections are *Escherichia coli*, *Staphylococcus saprophyticus*, *Klebsiella species*, *Pseudomonas aeruginosa*, *Enterococcus faecalis*, *Proteus mirabilis*, and other coliforms. Media is composed of peptone, tryptone, chromogenic mixture and agar. Peptone provides nitrogenous and long chain amino acids. The chromogenic mixture contains chromogens and nutrients, the nutrients provide nitrogenous and carbonaceous compounds, vitamins and essential nutrients including tryptophan. While the chromogenic substance used in this media are X-Glucoside, Red-β-D-galactopyranoside and isopropylthio-β-galactoside. X-Glucoside is a substrate for β-Glucosidase that, upon enzymatic action, gives an insoluble indigo-blue chromophore. Red-β-D-galactopyranoside is used for detection of beta-galactosidase. IPTG (isopropylthio-β-galactoside) is an inducer of β-galactosidase activity in bacteria and is suitable for use with X-gal or Red-gal to detect lac gene activity in *E. coli* or genetically modified microorganisms. The medium also contains tryptophan which acts as an indicator of tryptophan deaminase activity.

The *Escherichia coli*, produce β-galactosidase enzyme activity, cleave red-β-D-galactopyranoside and forms pink color colonies. The enterococci cleave X-glucoside, by producing β-glucosidase enzyme, and result in formation of blue colonies. However, some members of the coliform group, cleaves both the chromogen to form purple colonies. While *Proteus*, *Morganella* and *Providencia* spp. are differentiated on basis of tryptophan deaminase activity and generally forms brown color colonies. Some *Enterobacter cloacae* lack β-glucosidase, resulting in pink colonies, similar to *Escherichia coli*, and further differentiated on basis of indole production by using Kovac's reagent.

Use: Recommended for identification, differentiation and confirmation of enteric bacteria from clinical specimens containing potentially pathogenic gram-positive organisms and *Proteus* species.

Contents*

Ingredients

	Gram/Litre
Special Peptone	18.000
Tryptone	4.000
Chromogenic mixture	17.000
Agar	15.000
pH at 25°C	7.2 ±0.2

* Formula adjusted for optimum performance and parameters

Directions: Dissolve 54.00 grams in 1000 ml distilled water. Boil 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.

Specimens types analyzed

Clinical samples: urine, faeces, Water samples and Food samples.

Precautions to be taken

All the handling, experiments, storage, and discarding should be performed with the help of skilled and knowledgeable technicians and as per the established guidelines. The material should be disposed only after

proper sterilization by autoclaving. Please go through the MSDS of the media to avoid any accidents or in emergency.

Performance and Evaluation

The expected performance of the medium is liable to use as per the direction on the label when stored at optimum conditions and within expiry date.

Quality Control

Appearance	Light beige colored, free-flowing, homogeneous
Reaction of 5.40 % solution	7.2 ±0.2 at 25 °C
pH	7.00- 7.40
Gelling	Firm comparable with 1.5% agar gel
Color and clarity of ready medium	Light beige, clear opalescent gel
Growth Promotion properties	Best at ≤ 100 CFU at 32-37 °C for 18-72 h
Indicative properties	Optimum at ≤ 100 CFU at 32-37 °C for 18-48 h
Negative control	Performed using sterile distilled water

Different Microbial Response: Cultural characteristics observed after an incubation at 35±2°C for 24 hours. Inoculum 50-100 CFU.

Organism	ATCC	Growth	Tryptophan deaminase activity	Colony color
<i>Escherichia coli</i>	8739	Luxuriant	Negative	Pinkish purple
<i>Pseudomonas aeruginosa</i>	27853	Luxuriant	Negative	Colorless or greenish pigment
<i>Salmonella typhimurium</i>	14028	Luxuriant	Negative	colorless
<i>Klebsiella aerogenes</i>	13048	Luxuriant	Negative	Purple
<i>Proteus mirabilis</i>	12453	Luxuriant	Positive	Cream color with brown halo
<i>Staphylococcus aureus</i>	25923	Luxuriant	Negative	Normal pigmentation
<i>Enterococcus faecalis</i>	14506	Luxuriant	Negative	Blue
- Recovery ranges from ≥ 60% for all organisms - Tryptophan deaminase activity, revealed with TDA Reagent indicating the presence of <i>Proteus</i> species				

Storage and Shelf Life: The product is highly hygroscopic; keep the container tightly closed at all times and store it properly as per the conditions mentioned on the label. The declared expiry is valid only when stored as per the conditions mentioned on the label.

Note: Sterilize media immediately after reconstitution.

Disposal: To avoid the contamination or propagation of any hazardous microbes the used, unusable or modified preparation of this product must be disposed after autoclaving after completion of task.

Reference

1. Baird R.B., Eaton A.D., and Rice E.W., (Eds.), (2015), Standard Methods for the Examination of Water and Wastewater, 23rd Ed., APHA, Washington, D.C.
2. Jorgensen, J.H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock, D.W. (2015), Manual of Clinical Microbiology, 11th Edition. Vol. 1 Wastewater, 23rd Ed., APHA, Washington, D.C.
3. Salfinger Y., and Tortorello M.L., (2015), Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
4. Pezzlo M, (1998), Detection of urinary tract infections by rapid methods. Clinical Microbiology Reviews, 1:268-280.

Disclaimer

The information contained in the technical data sheet is to the best of our knowledge is accurate and true based on the research and development work carried out by **ReadyMED®**, Chaitanya Agro Biotech, Malkapur, Maharashtra. The

products are neither intended for any therapeutic use for animal or human nor for any other *in-vivo* applications. The **ReadyMED®** products are only meant to be used for the laboratory, diagnostic, research, or further manufacturing purpose only. These technical outcomes should not be considered as the warranty of any kind expressed or implied, and no liability is accepted for infringement of any patent.

CHAITANYA AGRO BIOTECH PVT. LTD.

An ISO 11133:2014, ISO 13485:2016, ISO 9001:2015 ☑, CIN NO.: U24210MH1995PTC095220S,
S. No. 120/2, Laxmi Nagar, Umbarnala Road, Malkapur-443101, Dist.: Buldana (M.S.) India. Customer Care +91-8669083859
rdmsales@chaitanyagroupindia.com, mkt.cabt@chaitanyagroupindia.com, www.chaitanyagroupindia.com