Urea Indole Broth, Modified

M1784I

Intended Use:

Recommended for confirmation of *Yersinia enterocolitica* by urease and indole test. The composition and performance criteria of this medium are as per the specifications laid down in ISO 10273:2003.

Composition**

Ingredients	g/ L
L-Tryptophan	3.000
Potassium dihydrogen phosphate	1.000
Dipotassium hydrogen phosphate	1.000
Sodium chloride	5.000
Urea	20.000
Phenol red	0.025
Final pH (at 25°C)	6.9±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 30.03 grams in 1000 ml purified / distilled water. Dissolve the medium completely and sterilize by filtration. DO NOT AUTOCLAVE. Aseptically, dispense into sterile tubes or flasks as desired.

Principle And Interpretation

Strains of *Enterobacteria* are associated with abscesses, pneumonia, meningitis, septicemia and infections of wounds, the urinary tract and the intestine. They are a major component of the normal intestinal flora of humans but are relatively uncommon at other body sites. Of clinically significant isolates, *Enterobacteriaceae* may account for 80% of gram-negative bacilli and 50% of all clinically significant isolates in clinical microbiology laboratories (1).

This medium formulation is as per ISO(2)and is recommeded for the confirmation of *Yersinia* on the basis on urease reaction and indole reaction. *Yersinia* gives a positive urease reaction. Some biovars of *Yersinia* are indole positive while some give negative reaction. Urea Indole Medium is also used for the identification of *Enterobacteria* on the basis of urease and indole production and the transdeamination of tryptophan. The results for urease production should be noted prior to indole reaction, as addition of Kovacs reagent, decolourizes the medium, due to drop in pH.

L- Trypytophan is an essential amino acid and is converted to skatole and indole, which is detected by the addition of Kovacs Reagent (R008). Sodium chloride maintains the osmotic balance. The phosphates helps in the buffering of the medium. Microorganisms that possess the enzyme urease hydrolyse urea, releasing ammonia, which is detected by the pH indicator phenol red. The alkalinility so developed imparts pink colour to the medium (3).

Type of specimen

Food and dairy samples; Water sample.

Specimen Collection and Handling

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (4,5,6). For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards(7). After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

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 specimens. Safety guidelines may be referred in individual safety data sheets.

Limitations

1. All urea test media rely on the alkalinity formation and so they are not specific for determining the absolute rate of urease activity.
2. Further biochemical and serological tests must be carried out for complete identification.

Performance and Evaluation

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

Quality Control

Appearance
Light yellow to light pink homogeneous free flowing powder

Colour and Clarity
Yellow to light orange coloured clear solution

Reaction
Reaction of 3.0% w/v aqueous solution at 25°C. pH : 6.9±0.2

pH
6.70-7.10

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

Organism	Growth	Indole	Urease
Escherichia coli ATCC 25922 (00013*)	luxuriant	Positive reaction, red colour at the interface of the medium after addition of Kovacs reagent (R008)	Negative reaction,no change
Proteus mirabilis ATCC 12453	luxuriant	Negative reaction, no change	Positive reaction, Pink colour
## *Proteus hauseri* ATCC 13315	luxuriant	Positive reaction, red colour at the interface of the medium after addition of Kovacs reagent (R008)	Positive reaction, Pink colour
Salmonella Typhimurium *ATCC 14028* (00031*)	luxuriant	Negative reaction, no change	Negative reaction,no change
Yersinia enerocolitica ATCC 27729	luxuriant	negative reaction, no change	positive reaction, pink colour

Key : (*) Corresponding WDCM numbers. ## Formerly known as *Proteus vulgaris*

Storage and Shelf Life

Store between 10-30°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 in order 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 sample must be decontaminated and disposed of in accordance with current laboratory techniques (8,9).

Reference

1.Patrick R. Murray et al, Manual of Clinical Microbiology, Sixth Edition, 444 - 445.
2.Microbiology of food and animal feeding stuffs Horizontal method for the detection of presumptive pathogenic *Yersinia enterocolitica.*
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4.American Public Health Association, Standard Methods for the Examination of Dairy Products, 1978, 14th Ed., Washington D.C.
5.Salfinger Y., and Tortorello M.L. Fifth (Ed.), 2015, Compendium of Methods for the Microbiological Examination of Foods, 5th Ed., American Public Health Association, Washington, D.C.
6.Wehr H. M. and Frank J. H., 2004, Standard Methods for the Microbiological Examination of Dairy Products, 17th Ed.,APHA Inc., Washington, D.C.
7.Lipps WC, Braun-Howland EB, Baxter TE,eds. Standard methods for the Examination of Water and Wastewater, 24th ed. Washington DC:APHA Press; 2023.
8.Isenberg, H.D. Clinical Microbiology Procedures Handbook 2nd Edition.
9.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.

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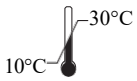
IVD ***In vitro* diagnostic medical device**



Storage temperature

EC REP CEpartner4U, Esdoornlaan 13,
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www.cepartner4u.eu

CE Marking

Do not use if package is damaged

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