Urea Broth, Granulated® (Filter Sterilizable)

GM111A

Intended use

Recommended for identification of bacteria on the basis of urea utilization, specifically for the differentiation of *Proteus* species from *Salmonella* and *Shigella* species.

Composition**

Ingredients	g / L
Potassium dihydrogen phosphate	9.100
Yeast extract	0.100
Dipotassium hydrogen phosphate	9.500
Urea	20.000
Phenol red	0.010
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 38.7 grams in 1000 ml purified/distilled water. Mix well and sterilize by filtration. **DO NOT AUTOCLAVE OR HEAT** the medium. Dispense into sterile tubes or flasks as desired.

Principle And Interpretation

Urea Broth (Filter Sterilizable) was developed by Rustigian and Stuart (1). This medium is especially recommended for the differentiation of *Proteus* species from *Salmonella* and *Shigella* species in the enteric infection diagnosis (2), based on urea utilization (3, 4). Gram-negative enteric bacilli are unable to utilize urea because of less nutrients and high buffering capacity of the medium. Urea Broth becomes alkaline as the utilization of urea by the organisms liberate ammonia during the incubation, indicated by pink red colour. All urea test media rely on the alkalinity formation and so they are not specific for urease testing. The utilization of proteins may raise the pH to alkalinity due to protein hydrolysis and excess of amino acids results in false-positive reaction.

Type of specimen

Isolated microorganism from Clinical samples and non clinical samples

Specimen Collection and Handling

For food and dairy samples, follow appropriate techniques for sample collection and processing as per guidelines (5,6,7).
For water samples, follow appropriate techniques for sample collection, processing as per guidelines and local standards (8).
For clinical samples follow appropriate techniques for handling specimens as per established guidelines (9,10).
After use, contaminated materials must be sterilized by autoclaving before discarding.

Warning and Precautions

In Vitro diagnostic use. For professional 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. Prolonged incubation may cause alkaline reaction in the medium.
2. All urea test media rely on the alkalinity formation and so they are not specific for determining the absolute rate of urease activity (7).

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 coloured granular medium

Colour and Clarity of prepared medium

Yellow to orange coloured clear solution without any precipitate.

Reaction

Reaction of 3.87% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH

6.60-7.00

Cultural Response

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

Organism	Urease
Escherichia coli ATCC 25922 (00013*)	negative reaction, no change
# *Klebsiella aerogenes* ATCC 13048 (00175*)	negative reaction, no change
Proteus mirabilis ATCC 25933	positive reaction, cerise colour
$ *Proteus hauseri* ATCC 13315	positive reaction, cerise colour
Salmonella Typhimurium *ATCC 14028 (00031*)*	negative reaction, no change

Key : *Corresponding WDCM numbers.

Formerly known as *Enterobacter aerogenes* # Formerly known as *Proteus vulgaris*

Storage and Shelf Life

Store dehydrated 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. 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 (9,10).

Reference

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10. 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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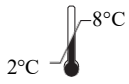
IVD ***In vitro* diagnostic medical device**



Storage temperature

CE Marking

Do not use if package is damaged

Disclaimer :

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