Technical Information

Urea Broth (Filter Sterilizable)

Product Code: DM 1111A

Application: Urea Broth (Filter Sterilizable) is recommended for the identificatio n for the differentiation of *Proteus* species from *Salmonella* and *Shigella* species

Composition**

Ingredients	Gms / Litre
Yeast extract	0.100
Dipotassium phosphate	9.500
Monopotassium phosphate	9.100
Urea	20.000
Phenol red	0.010
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Principle & Interpretation

Urea Broth (Filter Sterilizable) was developed by Rustigian and Stuart [1]. Based on urea utilization this medium is especially recommended for the differentiation of Proteus species from *Salmonella* and *Shigella* species in the diagnosis of enteric infection [2,-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 due to the utilization of urea by the organisms and liberating ammonia during the incubation as 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.

Methodology

Suspend 38.7 grams of powder media in 1000 ml distilled water. Mix well and sterilize by filtration. DO NOT AUTOCLAVE OR HEAT the medium. Dispense in sterile tubes.

Quality Control

Physical Appearance
Light yellow to light pink coloured homogeneous free flowing powder

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 Range:- 6.60-7.00

Cultural Response/Characteristics
DM 1111A: Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Organism	Inoculum (CFU)	Growth
Escherichia coli ATCC 25922	50-100	Negative reaction,no change
Enterobacter aerogenes ATCC 13048	50-100	Negative reaction,no change
Klebsiella pneumonia ATCC 13883	50-100	Positive reaction, cerise colour
Proteus mirabilis ATCC 12453	50-100	Positive reaction, cerise colour
Proteus vulgaris ATCC 13315	50-100	Positive reaction, cerise colour

Salmonella Typhimurium ATCC 14028	50-100	Negative reaction,no change

Storage and Shelf Life

Dried Media: Store below 30°C in tightly closed container and use before expiry date as mentioned on the label.
Prepared Media: 2-8^0 in sealable plastic bags for 2-5 days.

Further Reading

1. Rustigian and Stuart, 1941, Proc. Soc. Exp. Biol. Med., 47:108.
2. Finegold and Baron, 1986, Bailey and Scotts Diagnostic Microbiology, 7th ed., The C.V. Mosby Co., St. Louis. 3. Christensen, 1946, J. Bact., 52:461.
4. MacFaddin J., 1980, Biochemical Tests for Identification of Medical Bacteria, 2nd ed., Williams and Wilkins, Baltimore.

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