ARENA BioScien

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UREA BROTH

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

REF: BS.1/UB01.100.0100	100 Gram	REF: BS.1/UB01.250.01250	250 Gram
REF: BS.1/UB01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Urea Broth (Filter Sterilizable) was developed by Rustigian and Stuart. This medium is especially recommended for the differentiation of Proteus species from Salmonella and Shigella species in the enteric infection diagnosis, based on urea utilization.

METHOD PRINCIPLE

This medium is especially recommended for the differentiation of Proteus species from Salmonella and Shigella species in the enteric infection diagnosis, based on urea utilization.
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 liberates 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. A medium without urea serves as negative control to rule out false positive results.

MEDIA COMPOSITION

Item	Formula per liter of medium
Monopotassium phosphate	9.100 gm
Dipotassium phosphate	9.500 gm
Yeast Extract	0.100 gm
Urea	20.00 gm
Phenol red	0.010 gm
Final pH (at 25°C)	6.8±0.2

PRECAUTIONS AND WARNINGS

Media to be handled by entitled and professionally educated person. Do not ingest or inhale.

Good Laboratories practices using appropriate precautions should be followed in:

- Wearing personnel protective equipment (overall, gloves, glasses,).
- Do not pipette by mouth.
- In case of contact with eyes or skin; rinse immediately with plenty of soap and water. In case of severe injuries; seek medical advice immediately.
- Respect country requirement for waste disposal.
  S56: dispose of this material and its container at hazardous or special waste collection point.
  S57: use appropriate container to avoid environmental contamination.
  S61: avoid release in environment.

For further information, refer to the Urea broth material safety data sheet.

MEDIA PREPARATION, STORAGE AND STABILITY

BioScien Urea broth media are stable until expiration date stated on label when properly stored at 10-30°C. Urea broth media is prepared by suspend 38.7 grams of the medium in one liter of distilled water. Mix well and sterilize by filtration. DO NOT AUTOCLAVE OR HEAT the medium. Dispense in sterile tubes.

Deterioration
BioScien Urea broth medium is Light yellow to light pink coloured homogeneous free flowing powder. If there are any physical changes, discard the medium.
Media should not be used if there are any signs of deterioration (shrinking, cracking, or discoloration), and contaminations.

SPECIMEN COLLECTION AND PRESERVATION

Pure isolate.

EQUIPMENT REQUIRED NOT PROVIDED

- Sterile cups
- Sterile tubes or flasks as desired
- Incubator
- Autoclave

PERFORMANCE CHARACTERISTICS

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

Urea broth	urease
Escherichia coli ATCC 25922	Negative reaction
Enterobacter aerogenes ATCC 13048	Negative reaction
Salmonella Typhimurium ATCC 14028	Negative reaction
Klebsiella pneumoniae ATCC 13883	Positive reaction, cerise colour
Proteus mirabilis ATCC 12453	Positive reaction, cerise colour
Proteus vulgaris ATCC 13315	Positive reaction, cerise colour

QUALITY CONTROL

To ensure adequate quality control, it is recommended that positive and negative control included in each run. If control values are found outside the defined range, check the system performance. If control still out of range please contact ***BioScien*** technical support.

REFERENCES

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.

SYMBOLS IN PRODUCT LABELLING			
IVD	For in-vitro diagnostic use	Σ	Number of <n> test in the pack
LOT	Batch Code/Lot number		Caution
REF	Catalogue Number		Do not use if package is damaged
	Temperature Limitation		Consult Instruction for use
	Expiration Date		
	Manufactured by		