ARENA BioScien

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UREA AGAR BASE

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/UA01.100.0100	100 Gram	REF: BS.1/UA01.250.01250	250 Gram
REF: BS.1/UA01.500.0500	500 Gram		

CLINICAL SIGNIFICANCE

Urea Agar Base Media is a slight modification of Christensen formulation (1, 2) and is recommended by BIS (3, 4) for identification of urease activity. Rustigian and Stuart (5) had originally formulated a medium to detect urease activity. These media differentiate between rapid urease positive Proteus species and other urease positive organisms like Citrobacter, Enterobacter and Klebsiella and the bacteria other than Enterobacteriaceae. Christensen observed that addition of peptic digest of animal tissue, dextrose and reduced content of buffer helps to support an early luxuriant growth.

METHOD PRINCIPLE

Urea Agar was described by Christensen which detected urease activity by all rapidly urease-positive Proteus organisms and also by other members of Enterobacteriaceae that exhibited a delayed urease reaction. This is accomplished by
a) Adding glucose to the medium
b) Decreasing the peptone concentration, and
c) Decreasing the buffering system, as a less buffered medium detects even smaller amount of alkali

MEDIA COMPOSITION

Item	Formula per liter of medium
- Peptone	1.50 gm
- Dextrose (Glucose)	1.00 gm
- Sodium chloride	5.00 gm
- Monopotassium phosphate	2.00 gm
- Phenol red	0.012 gm
- Agar	15.00 gm

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 Agar Base material safety data sheet.

MEDIA PREPARATION, STORAGE AND STABILITY

BioScien Urea Agar Base media are stable until expiration date stated on label when properly stored at 10-30°C. Urea broth media is prepared by suspend 24.51 grams of the medium in 950 ml of distilled water. Heat to boiling to dissolve the medium completely. Sterilize by autoclaving at 15 lbs pressure (121°C) for 15 minutes. Cool to 50°C and aseptically add 50 ml of sterile 40% Urea Solution and mix well. Dispense into sterile tubes and allow to set in the slanting position. Do not overheat or reheat the medium as urea decomposes very easily.

Deterioration

BioScien Urea Agar Base medium is Light pink coloured homogeneous free flowing powder. Prepared Media is Yellowish orange coloured clear gel forms in tubes as slants. 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 from clinical, food and water samples.

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 agar base	growth	urease
Enterobacter aerogenes ATCC 13048	luxuriant	Negative reaction
Escherichia coli ATCC 25922	luxuriant	Negative reaction
Salmonella Typhimurium ATCC 14028	Luxuriant	Negative reaction
Klebsiella pneumoniae ATCC 13883	Luxuriant	Positive reaction, cerise colour
Proteus mirabilis ATCC 12453	Luxuriant	Positive reaction, cerise colour
Proteus vulgaris ATCC 13315	luxuriant	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. Christensen, W.B., 1946, J. Bact., 52:461.
2. MacFaddin J., 1980, Biochemical Tests for Identification of Medical Bacteria, 2nd ed., Williams and Wilkins, Baltimore.
3. Bureau of Indian Standards, IS : 5887 (Part I) - 1976, reaffirmed 1986.
4. Bureau of Indian Standards, IS : 5887 (Part III) - 1999.
5. Rustigian and Stuart, 1941, Proc. Soc. Exp. Biol. Med., 47:108.

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		