

TM 425 – UREA BROTH (UREA BROTH MEDIUM) (AS PER IP2007)

INTENDED USE

For identification of bacteria on the basis of urea utilization, especially for the differentiation of *Proteus*, *Salmonella* and *Shigella* species.

PRODUCT SUMMARY AND EXPLANATION

Urea Broth Medium was developed by Rustigian and Stuart. This medium is especially recommended by Indian Pharmacopoeia for the differentiation of *Proteus* species from *Salmonella* and *Shigella* species in the enteric infection diagnosis, based on urea utilization. It is also recommended for microbial limit tests. Other Gram-negative enteric bacilli are unable to utilize urea and fails to grow because of reduced availability of other nutrients.

COMPOSITION

Ingredients	Gms / Ltr
Potassium dihydrogen orthophosphate	9.100
Yeast extract	0.100
Anhydrous disodium hydrogen phosphate	9.500
Urea	20.000
Phenol red	0.010

PRINCIPLE

Urea Broth Medium 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. Yeast extract provides essential vitamins and other growth factors. Phosphates aids as good buffering agent. The utilization of proteins may raise the pH to alkalinity due to protein hydrolysis and excess of amino acids results in falsepositive reaction. This medium shows positive reaction with Genus *Proteus*, few *Providencia* and *Morganella* sp. species.

INSTRUCTION FOR USE

- Dissolve 38.70 grams in 1000 ml distilled water.
- Heat to boiling to dissolve the medium completely.
- Sterilize by autoclaving at 15 PSI pressure (121°C) for 15 minutes.
- Mix well and dispense as desired.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder : Light yellow to light pink homogeneous free flowing powder
Appearance of prepared medium : Yellow orange coloured clear solution
pH (at 25°C) : 6.8 ±0.2

INTERPRETATION

Cultural characteristics observed after incubation.

Microorganism	ATCC	Inoculum (CFU/ml)	Urease	Incubation Temperature	Incubation Period
<i>Enterobacter aerogenes</i>	13048	50-100	Negative reaction, no change	36-38°C	18-24 Hours
<i>Salmonella Typhimurium</i>	14028	50-100	Negative reaction, no change	36-38°C	18-24 Hours
<i>Proteus vulgaris</i>	13315	50-100	Positive reaction, cerise colour	36-38°C	18-24 Hours
<i>Klebsiella pneumoniae</i>	13883	50-100	Positive reaction, cerise colour	36-38°C	18-24 Hours
<i>Escherichia coli</i>	8739	50-100	Negative reaction, no change	36-38°C	18-24 Hours
<i>Klebsiella pneumoniae</i>	10031	50-100	Positive reaction, cerise colour	36-38°C	18-24 Hours
<i>Escherichia coli</i>	NCTC 9002	50-100	Negative reaction, no change	36-38°C	18-24 Hours

PACKAGING:

In pack size of 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.

Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

1. Indian Pharmacopoeia, 2007 Govt. of India, Ministry of Health and Family Welfare, New Delhi, India.



2. Forbes, B.A.; Sahm, D.F. and Weissfelf, A.S., 2002, Bailey and Scott s Diagnostic Microbiology, 11th ed., The C.V. Mosby Co., St. Louis.
3. Christensen, 1946, J. Bact., 52:461.
4. MacFaddin J., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd ed., Williams and Wilkins, Baltimore.
5. Rustigian and Stuart, 1941, Proc. Soc. Exp. Biol. Med., 47:108.

 GMP Good Manufacturing Practices Certified	 IVD For In Vitro Diagnostic Use	 QTY. Quantity	 LOT/ B. NO. Lot / Batch Number	 REF Cataloge Number	 Manufacturer
 Temprature Unit	 EC REP Authorized Representative MedNet GmbH Birkstrasse 10, 48163 Muenster, Germany	 European Conformity	 QR Code	 Consults Instructions for Use	 Best Before

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
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