

UREA BROTH
Ready to use tubes

Urea Broth – from left:
uninoculated tube, *P. mirabilis*
urease pos.

INTENDED USE

Ready to use medium for the differentiation of *Proteus* spp. on the basis of urease production.

TYPICAL FORMULA (g/l)

Yeast Extract	0.10
Potassium Dihydrogen Phosphate	9.10
Disodium Hydrogen Phosphate	9.50
Phenol Red	0.01
Urea	20.000

Final pH 6.8 ± 0.2

DESCRIPTION

Urea Broth is used to differentiate *Proteus* from other enteric bacteria. The medium is prepared in accordance with the formula of Stuart et al. The composition of the medium supports excellent growth of *Proteus*, which, through their urease activity, hydrolyses urea with the production of ammonium ions making the pH of the medium alkaline. The medium having a faint red colour, becomes purple-red when the pH reaches or exceeds the value of 8.1. Other microorganisms also possess urease activity, but do not hydrolyse urea as rapidly and intensely as *Proteus*.

TECHNIQUE

Inoculate a tube of Urea Broth with a single colony of lactose non-fermenting organism and incubate at 35-37°C; observe after 2, 4, 6, 18, 24, 48 hours of incubation.. If the reaction is positive, splitting of urea liberates ammonia, which changes the colour of phenol red to rose-pink and later to deep cerise.

LIMITATIONS

The high buffering system masks urease activity in organisms that are delayed positive. Therefore, this medium is designed only for the detection f urease activity in all *Proteus* spp., *M.morganii*, *P.rettgeri*, and *P.stuartii* organisms. *M.morganii* is a slow urea hydrolyzer, requires 36 hrs of incubation and after 24 hours, the reaction may only show a very faint pink colour. If in doubt compare with an uninoculated tube. Medium cannot be used to determine the absolute rate of urease activity.

STORAGE

Store at 2-8° away from direct light - When stored as directed the tubed media remain stable until the expiry date shown on the label. Do not use beyond stated expiry date. Media should not be used if there are any signs of deterioration, discoloration or contamination.

PRECAUTIONS

For *in vitro* diagnostic use only. Observe approved biohazard precautions and aseptic techniques. To be used only by adequately trained and qualified laboratory personnel. Sterilize all biohazard waste before disposal.

REFERENCES

- Christensen, W.B. (1946). J. Bact., 52, 461-466
- ISO/DIS 6579 Microbiology of food and animal feeding stuffs - Horizontal method for the detection of *Salmonella* spp. 2000.

PACKAGING

552180

Urea Broth

20 x 9 ml ready to use tubes