PRODUCT DATA SHEET

UREA BROTH BASE (CHRISTENSEN) TM 1851

For the detection of urease production, particularly by members of the genus *Proteus*.

Composition

Ingredients	Gms/Ltr
Peptic digest of animal tissue	1.000
Dextrose	1.000
Sodium chloride	5.000
Disodium phosphate	1.200
Monopotassium phosphate	0.800
Phenol red	0.004

**Formula adjusted, standardized to suit performance parameters

Instructions for Use

Dissolve 9.0grms in 950 ml distilled water. Heat if necessary to dissolve the medium completely. Sterilize by autoclaving at 15 psi (121°C) for 15 minutes. Cool to 55˚C and aseptically add 50 ml of sterile 40% urea solution (TS 030). Mix well and distribute 10ml into sterile tubes.

Appearance of the medium: Yellowish orange colour, clear solution.

pH (at 25°C): 6.8 ± 0.2

Principle

Urea Broth Base is a liquid modification of Christensen medium . The modification is suitable for detection of urease production, particularly by members of the genus *Proteus.* This medium is especially recommended for the differentiation of *Proteus* species from *Salmonella* and *Shigella* species, based on urea utilization.

Urea Broth Base (Christensen) contains peptic digest of animal tissues which act as rich source of essential nutrients. Dextrose is the energy source. Sodium chloride maintains the osmotic equilibrium of the medium whereas phosphates serve to buffer the medium. Urea is hydrolyzed to liberate ammonia. Phenol red indicator detects the alkalinity generated by visible colour change from orange to pink.

Prolonged incubation may cause alkaline reaction in the medium. A medium without urea serves as negative control to rule out false positive results. Also, all urea test media rely on the alkalinity formation and so they are not specific for determining the absolute rate of urease activity. The utilization of proteins may raise the pH to alkalinity due to protein hydrolysis and excess of amino acids liberation results in false positive reaction.

Interpretation

Cultural characteristics observed on addition of sterile 40% Urea Solution (TS 030) after an incubation at 35-37°C for 18-24 hours.

Organism	ATCC	Inoculum (CFU/ml)	Urease
Enterobacter aerogenes	13048	10^3	Negative reaction
Escherichia coli	25922	10^3	Negative reaction
Proteus mirabilis	29906	10^3	Positive reaction, Pink colour

References

1. Christensen, 1946, J. Bact., 52:461.
2. Maslen L. G. C. (1952) *Brit. Med. J.* 2. 545-546.
3. MacFaddin J. F., 2000, Biochemical Tests for Identification of Medical Bacteria, 3rd Ed., Williams and Wilkins, Baltimore. Md.