Urea Agar Base

(Christensen)

LAB 130

Description
This is a modification of Christensen's urea base for the detection of rapid urease production by *Proteus* spp. Other enterobacteria will split the urea, but this will be delayed. This delay is achieved by the incorporation of glucose and the introduction of a buffering system into the medium. The indicator for ammonia production is phenol red.

Formula	g/litre
Peptone	1.0
Glucose	1.0
Sodium chloride	5.0
Disodium phosphate	1.2
Potassium dihydrogen phosphate	0.8
Phenol red	0.012
Agar No. 1	12.0

Method for reconstitution
Weigh 2.1 grams of powder, disperse in 95ml of deionised water. Allow to soak for 10 minutes, swirl to mix, then sterilise at 121°C for 15 minutes. Allow to cool to 47°C, add aseptically 5ml sterile urea solution X130/X135. Distribute into sterile bottles and slopes, allow to set in the sloped position.

Appearance: Yellow/pale pink, translucent.

pH: 6.8 ± 0.2

Minimum Q.C. organisms: *Proteus* spp.
E. coli NCIMB 50034

Storage of Prepared Medium: Capped container – up to 1 month at 2-8°C in the dark.

Inoculation: Pure culture using straight wire for stab/streak technique.

Incubation: 37°C for 4-6 hours or overnight, aerobically.

Interpretation: Production of red colour in under 6 hours is positive for rapid urease production.

Organism Growth Characteristics		
Proteus spp.	Red colour	4-6 hours
Citrobacter spp.	Red colour	18-24 hours
Klebsiella spp.	Red colour	18-24 hours
Staphylococcus spp.	Red colour	24-48 Hours
Helicobacter pylori	Red colour	30 minutes

References
Christensen, W.B. (1946). Urea decomposition as a means of differentiating Proteus and paracolon cultures from each other and from Salmonella and Shigella types. J. Bacteriol. 52: 461-466.