



Urea Indole Medium

M1784

To differentiate micro-organisms especially *Enterobacteriaceae* on the basis of their ability to hydrolyze urea and indole production

Composition**

Ingredients	Gms / Litre
L- Tryptophan	3.000
Sodium chloride	5.000
Potassium phosphate, monobasic	1.000
Potassium phosphate, dibasic	1.000
Urea	20.000
Phenol red	0.012
Final pH (at 25°C)	6.8±0.2

**Formula adjusted, standardized to suit performance parameters

Directions

Suspend 30.01 grams in 1000 ml distilled water. Dissolve the medium completely and sterilize by filtration . DO NOT AUTOCLAVE. Aseptically, dispense into sterile tubes.

Principle And Interpretation

Strains of *Enterobacteria* are associated with abscesses, pneumonia, meningitis, septicemia and infections of wounds, the urinary tract and the intestine. They are a major component of the normal intestinal flora of humans but are relatively uncommon at other body sites. Of clinically significant isolates, *Enterobacteriaceae* may account for 80% of gram-negative bacilli and 50% of all clinically significant isolates in clinical microbiology laboratories (1).

Urea Indole Medium is used for the identification of *Enterobacteria* on the basis of Urease and indole production and the transdeamination of tryptophan. This medium is very useful in the identification of *Proteus* species from *Salmonella* and *Shigella* species. The results for urease production should be noted prior to indole reaction , as addition of Kovacs reagent , decolourizes the medium, due to drop in pH.

L- Tryptophan is an essential amino acid and is converted to skatole and indole, which is detected by the addition of Kovacs Reagent (R008). Sodium chloride maintains the osmotic balance. The phosphates helps in the buffering of the medium. Microorganisms that possess the enzyme urease hydrolyse urea , releasing ammonia, which is detected by the pH indicator phenol red . The alkalinity so developed imparts pink colour to the medium (2).

Quality Control

Appearance

Light yellow to light pink homogeneous free flowing powder

Colour and Clarity of prepared medium

Yellow to light orange coloured clear solution

Reaction

Reaction of 3.00% w/v aqueous solution at 25°C. pH : 6.8±0.2

pH

6.60-7.00

Cultural Response

Cultural characteristics observed after an incubation at 35-37°C for 18-24 hours.

Cultural Response

Organism	Inoculum (CFU)	Growth	Urease
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<i>Escherichia coli</i> ATCC 25922	50-100	luxuriant	Negative reaction, no change
<i>Proteus mirabilis</i> ATCC 12453	50-100	luxuriant	Positive reaction, Pink colour
<i>Proteus vulgaris</i> ATCC 13315	50-100	luxuriant	Positive reaction, Pink colour
<i>Salmonella Typhimurium</i> ATCC 14028	50-100	luxuriant	Negative reaction, no change

Storage and Shelf Life

Store below 8°C in tightly closed container and prepared medium at 2-8°C. Use before expiry period on the label

Reference

1. Patrick R. Murray et al, Manual of Clinical Microbiology, Sixth Edition, 444 - 445.
2. Roland F. Bourbon D, Sztrum S. Ann. Inst. Pasteur, 73. 914-916.

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