

Aim

Isolate and identify Staphylococcus in given urine sample.

Principle

Urine is ordinarily an excellent culture medium for the multiplication of the common pathogen of the urinary tract. Urine from noninfected or normal persons may be sterile or contain bacteria up to 10^3 per ml and when the bacterial count exceeds 10^5 per ml of urine it indicates significant bacteriuria and is indicative of a urinary tract infection.

The microorganism frequently encountered in the normal urine include: coagulase-negative staphylococci, diphtheroid bacilli, coliform bacilli, enterococci, Proteus spp., Bacillus spp., alpha and beta haemolytic streptococci, and saprophytic yeasts.

Quantitative microbiological assays of urine can identify the probable pathogen. For this purpose, calibrated loop-direct streak method and pour-plate method are routinely used. Nowadays commercially prepared special plastic device called the "Urine Dip Slide" and diagnostic urine-culture called Bacturcult are being used for isolation and identification of microorganisms from gastrointestinal tract infections.

Requirements

- Urine sample
- A Urine Dip Slide.

Procedure

1. Take a freshly voided urine sample in a sterile container.
2. Immerse the Urine Dip Slide in the urine sample for 30 seconds.
3. Incubate the slide at 37°C for 48 hours.

Observation

Count the number of bacteria appearing on the slide on both the surfaces and characterize them.

Bacterium	Differential colonial reaction
Escherichia coli	Red, non-mucoid colonies
Enterobacter aerogenes	Pink, mucoid colonies
Pseudomonas aeruginosa	Green-brown, fluorescent colonies
Staphylococcus aureus	Pale pink, opaque colonies
Streptococcus faecalis	Res, minute, round colonies

Result

Staphylococci produce round, raised, opaque colonies 1-2mm in diameter. All staphylococci appear as Gram-positive cocci, usually in irregular, often grape-like clusters.