

## Evaluation of Mannose Sensitivity Profiling (detection of Type I and P Pili) and Hemolysin Production in Aminoglycoside Resistant *Escherichia coli* Isolates From Urine

Neda Soleimani; Ashraf Mohabati Mobarez\*;

Department of Bacteriology, School of Medical Sciences, Tarbiat Modares University, Tehran, Iran  
n.soleimani@modares.ac.ir

**Background & Objectives:** *Escherichia coli* is the most common cause of urinary tract infection (UTI). *E. coli* ability to colonize surface of the host uroepithelium cells is mediated by having adhesions such as type I and P pili. By producing hemolysin, bacteria can cause cellular and tissue damage in the host. The main purpose of this research is to study mannose sensitivity and hemolysin production among aminoglycoside resistant *E. coli* strains isolated from urine infections.

**Methods:** After collecting 276 isolates of *E. coli* from patients referring to Tehran Heart Center, resistance patterns of 50 isolates were determined by disk diffusion Methods toward gentamicin, tobramycin, kanamycin, amikacin and netilmicin antibiotics, considering CLSI principles. In order to study the mannose sensitivity human RBC were used. For evaluating hemolysin production ability of the isolates sheep and human blood agar media were applied.

**Results:** Results obtained from antibiotic resistance determination tests showed that the highest rate of resistance was observed against tobramycin (24/63%). Thirty percent of the resistant isolates showed the hemolysin production ability in both sheep and human blood agar media simultaneously. Fourteen percent of the isolates were sensitive to mannose presence during agglutination.

**Conclusion:** According to high prevalence of the urinary tract infections caused by UPEC strains and increasing rate of antibiotic resistance among them, resistance outbreak should be evaluated periodically in order to select the most suitable treatment choice to prevent routinely increasing antibiotic resistance.

**Keywords:** Type I And P Pili; Hemolysin; Aminoglycoside Resistance; *E. coli*; Urinary Tract Infection