

# Jordan University of Science and Technology

## Uropathogenic Escherichia coli (UPEC) in Jordan: Prevalence of urovirulence genes and antibiotic resistance

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**Abstract:** This study examined the prevalence of urovirulence genes in Uropathogenic Escherichia coli (UPEC) isolates obtained from Jordanian patients. In addition, antibiotic susceptibility profile of the isolates was also examined. Isolates (n=?227) were subjected to PCR detection of *vat*, *fyuA*, *chuA*, *yfcV*, *sivH*, *shiA*, *sisA*, *sisB* and *eco274* genes. The UPEC virulence genes prevalence rates were *shiA* (92%), *sisA* (72%), *eco274* (44%), *sivH* (36%), *vat* (27%), *yfcV* (25%), *sisB* (25%), *chuA* (20%), and *fyuA* (18%). Approximately half and 82% of the isolates produced extended-spectrum beta-lactamases (ESBL) and were resistant to three or more antimicrobial classes, respectively. Among the isolates, highest resistance was for augmentin (83%) and nalidixic acid (78%). Modest resistance was for cefoxitin (21%) and cefixime (20%). Low resistance was for norfloxacin (5%), amikacin (3%), and ertapenem (0.4%). In conclusion, The UPEC virulence genes *shiA* and *sisA* are highly prevalent among the isolates. In addition, high resistance of UPEC to augmentin and nalidixic acid was reported. This may help in elucidating UPEC pathogenesis, and facilitate better treatment strategies for urinary tract infection patients.