



## Detection of *E. coli* and Rotavirus in Diarrhea among Children Under Five Years Old

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**Abstract:** Ninety four fecal specimens were collected from children diarrhea less than five years old from Al-Emamain Al-Kadhemain Medical City Hospital in Baghdad province. Samples collection was carried out from 25 May to 16 July 2014. Our study showed 25.53 % and 17% of samples had positive tests for *Escherichia coli* and Rota virus respectively. Low number of *E. coli* isolates, 4/24 (16.6%) were produced  $\beta$ -lactamase and 10/24 (41.6%) produced biofilm. However, half *E. coli* isolates (50%) produced hemolysis. The *E. coli* isolates showed different degrees of sensitivity to different antibiotics. All *E. coli* isolates were 100% sensitive to Ciprofloxacin, Gentamycin, and Norfloxacin. However, 16.6% of *E. coli* isolates were sensitive for Carbenicillin and Amikacin. But 33.3% of *E. coli* isolates were sensitive to Amoxicillin-clavulanic and Aztreonam. Our study showed a number of plasmid range between 750 to 10,000 bp in size.

**Key words:** *E. coli*, Rota virus, antibiotic sensitivity, plasmid.

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### Introduction

Diarrheal disease is the second leading cause of death in children under five years old. Each year diarrhea kills around 760 000 children under five years (1). Ministry of health in Iraq record more than 212 diarrheal case under five years of age per 1000 of population in 2010 (2). Rotavirus and enterohaemorrhagic *E. coli* (EHEC) are considered to be the most common cause diarrheal in the world (3, 4). *Escherichia coli* is gram negative bacteria belong to enterobacteriaceae family, short bacilli, non-spore forming, facultative anaerobic and it is grow on simple media (5). Its significance as a public health problem was recognized

in 1982, following an outbreak in the United States of America (2). There are six different intestinal *E. coli* pathotypes associated with diarrhea, including enteropathogenic *E. coli* (EPEC), enterohemorrhagic *E. coli* (EHEC), enterotoxigenic *E. coli* (ETEC), enteraggregative *E. coli* (EAEC), enteroinvasive *E. coli* (EIEC), and diffusely adherent *E. coli* (DAEC) (6). "Plasmid profile analysis is useful in determining the epidemical strain in outbreaks caused by multiple species: *Escherichia*, *Klebsiella*, *Pseudomonas*, *Serratia*, *Streptococcus*, and so on" (7). "Plasmids size range from 1 kbp to 2,000 kbp resistance plasmids code for enzymes that can inactivate antibiotics,