

## **Assessment of the Role of Plasmid in Multidrug Resistance in Extended Spectrum $\beta$ Etalactamase Producing Escherichia Coli Stool Isolates from Diarrhoeal Patients in Kano Metropolis Nigeria**

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**Abstract :** The emergence of multidrug resistance in clinical Escherichia coli has been associated with plasmid-mediated genes. DNA transfer among bacteria is critical to the dissemination of resistance. Plasmids have proved to be the ideal vehicles for dissemination of resistance genes. Plasmids coding for antibiotic resistance were long being recognized by many researchers globally. The study aimed at determining the antibiotic susceptibility pattern of ESBL E. coli isolates claimed to be multidrug resistance using disc diffusion method. Antibacterial activity of the test isolates was carried out using disk diffusion methods. The results showed that, majority of the multidrug resistance among clinical isolates of ESBL E. coli was as a result of acquisition of plasmid carrying antibiotic-resistance genes. Production of these ESBL enzymes by these organisms which are normally carried by plasmid and transfer from one bacterium to another has greatly contributed to the rapid spread of antibiotic resistance amongst E. coli isolates, which lead to high economic burden, increase morbidity and mortality rate, complication in therapy and limit treatment options. To curtail these problems, it is of significance to checkmate the rate at which over the counter drugs are sold and antibiotic misused in animal feeds. This will play a very important role in minimizing the spread of resistance bacterial strains in our environment.

**Keywords :** Escherichia coli, plasmid, multidrug resistance, ESBL, pan drug resistance

**Conference Title :** ICMMD 2024 : International Conference on Microbiology and Microbial Diagnosis

**Conference Location :** Jeddah, Saudi Arabia

**Conference Dates :** November 11-12, 2024