

Molecular characterization of Plasmid Mediated Methicillin-Resistant Staphylococcus aureus and Escherichia coli serotypes in Mastitic Camels (Camelus dromedarius) in Sokoto State, Nigeria



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Abstract: Staphylococcus aureus and Escherichia coli are among the most important aetiological agents of mastitis. The aim of this study is to genotypically determine the prevalence of plasmid mediated Methicillin Resistant Staphylococcus aureus (MRSA) and Escherichia coli pathogens from milk of camels in Sokoto State. A total of 405 milk samples (which comprises 181 samples from mastitic and 224 from apparently healthy lactating camels) were collected. Standard methods of Culture, phenotypic, microscopic and biochemical characterization were employed to isolate and identified the bacterial pathogens. Staphylococcus aureus have the highest isolation rate of 97 (30.5%); followed by Staphylococcus epidermidis 66 (20.8 %) and Escherichia coli 38 (11.9 %). The DNA Plasmid curing and PCR assay revealed that the Multi-Drug-Resistant (MDR) associated with Staphylococcus aureus was found to be plasmid mediated. Staphylococcus aureus (30.5 %) and E. coli (11.9 %) remain the major pathogens isolated from this study. Serotyping confirmed by PCR of the E. coli isolates revealed the presence of E. coli O157:H7 and non O157:H7 serotypes. It is concluded that plasmid mediated MRSA strains remain the most prevalently isolated from dromedary milk and were most sensitive to ciprofloxacin on antibiogram. It is recommended from this study that ciprofloxacin will remain the drug of choice against strains of plasmid mediated MRSA and E. coli O157:H7

Keywords: E. coli O157:H7, Camelus dromedarius, Methicillin Resistant Staphylococcus aureus, Mastitis



Biography:

Adamu Bello Kasarawa obtained his PhD from Usmanu Danfodiyo University, Sokoto, Nigeria in the year 2017. He is currently a principal lecturer at the department of Science Laboratory Technology, Umaru Ali Shinkafi Polytechnic Sokoto, Nigeria. He supervised more than 200 research projects and presented papers in various academic fora

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