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Foodborne pathogens in retail meats: From detection to genomics

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The presence of foodborne pathogens on retail meats always has been a public health concern. Advances in the detection and molecular typing of foodborne pathogens are always necessary to cope with their evolution, fitness and adaptation. Antimicrobial resistance of foodborne pathogens is at an alarming rate because of the extensive use of antimicrobials in the feed of poultry and other food production animals. Understanding the mechanisms by which these pathogens are resisting antimicrobials is critical in developing interference strategies to reduce such undesired resistance. Research in my laboratory at the University of Tulsa has been focused on the detection and molecular typing of foodborne bacterial pathogens including *Campylobacter, Salmonella*, and *Staphylococcus* aureus in retail meats and on exploring the molecular mechanisms of their antimicrobial and arsenic resistance. Of a special interest to our research group is the molecular characterization of foodborne bacterial plasmids and the investigation of their roles not only in antimicrobial resistance but also in virulence and persistence in the various steps of slaughtering and retail processing. This talk will summarize our interesting valuable research findings in the last few years and will also elaborate on the use of next-generation whole genome sequencing in characterizing *Campylobacter* large plasmids. Uncovering a possible role for these large plasmids in *Campylobacter* virulence will be also discussed.

Biography

Mohamed K Fakhr is currently an Associate Professor of Molecular Microbiology in the Department of Biological Science at the University of Tulsa, USA. After obtaining his PhD from Oklahoma State University in 2002, he moved to North Dakota State University, where he worked as a Postdoctoral Research Associate then a Research Assistant Professor at the Department of Veterinary and Microbiological Sciences. In 2008, he moved to Tulsa, where he currently runs an active research program in the area of Molecular Typing and Detection of Foodborne Bacterial Pathogens alongside exploring the mechanisms by which these foodborne pathogens develop resistance to antimicrobials.

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