Researchers at the University of South Florida have invented a method of mitigating drug resistant bacteria from nosocomial infections in hospitals and in food animals. This invention uses nanomaterials formulated as nanoparticles and micelles.

The multi-drug resistant gastrointestinal fecal bacteria (MFR) are proliferating at a considerable rate to reach and impact the downstream food chains as well as hospital settings. While there are several foodborne pathogens originating from animal gut having resistance, MFRs remain the leading cause of hospital-acquired infections.

Furthermore, continuous use and often overuse of the traditional antibiotics over the years have resulted in induction of antibiotic resistance to a wide range of antibiotics. Because some strains of multi-drug resistant fecal bacteria mainly enterococcus (VRE) exhibited the ability to develop resistance to basically every drug used against them, novel alternative antimicrobial agents that are natural and durable are needed.

Our inventors have developed nano-based strategy against these drug resistant strains. They demonstrated that the combination of chitosan and ZnO have an extraordinary antimicrobial potential against broad spectrum of multi-drug resistant pathogens in biomedical and food industry areas.

This invention will mitigate MFRs and VRE induced illness without compromising the balance of the beneficial flora in the gut.

**ADVANTAGES:**

- Effective against variety of drug resistant bacteria
- Nano-based delivery system with high potency and precision
- Does not compromise the balance of flora in the gut

**Potent Compound with Broad Spectrum Antibacterial Effect**

**Minimum Inhibitory Concentration (MIC) Test of synergism of Chitosan and ZnO against multi-drug resistant fecal flora and their wild type counterparts.**