**Hybrid Compounds to treat Gastrointestinal Infections**  
**UTA (14401)**

**Technology Need:**  
*Clostridium difficile* (C. diff) is a bacterial gastrointestinal infection that is responsible for 14,000 deaths in the US each year. It is one of the most common hospital acquired infections, and takes advantage of antibiotic weakened intestinal flora. Antibiotics not only destroy un-wanted bacteria but also the bacteria that the body has recruited for its health. Current treatment for C. diff involves the antibiotic metronidazole. Unfortunately, metronidazole is absorbed by the GI tract rapidly and requires high dosage to effectively remove C. diff and at high dosages metronidazole is toxic.

**Solution/ Offering:**  
Researchers here at UTA have developed a hybrid compound that prevents metronidazole and similar antibiotics from being absorbed by the body before reaching the location of infection, thus avoiding the toxicity associated with higher doses of metronidazole. These hybrid compounds are not only effective in treating C. diff but other bacterial and parasitic infections such as *Clostridium perfringen* and *Helicobacter pylori*, and potentially Crohn’s disease and other inflammatory bowel diseases.

**Value Proposition:**  
- Improved efficacy of current anti-infective medication  
- Decreased absorption of medication by the GI tract

**Industrial application:**  
- Healthcare: Pharmaceuticals

**Patent Status:**  
- Provisional

**Current Stage:**  
- Prototype

**Meet the Inventor**

Dr. Julian G. Hurdle completed his Ph.D. in Molecular Microbiology in 2005 at the University of Leeds, UK and has been an Assistant Professor at the UTA since 2010. He conducts research to study the molecular action of antimicrobial agents against pathogenic bacteria and to determine the genetic mechanisms by which bacterial pathogens resist antibiotic killing.

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