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Microcin I47: Fighting Drug-Resistant Bacteria

Technology Description:

The innovation has been employed to combat drug-resistant bacteria, particularly within the *Enterobacteriaceae* family, utilizing the potency of microcin I47, an antimicrobial peptide. This unique molecule, delivered through probiotics or in purified form, effectively targets and eradicates drug resistant *Klebsiella* species and other resilient pathogens, offering a solution where conventional antibiotics fall short. The technology's wide-ranging applications extend to healthcare, where it transforms the treatment of drug-resistant infections, reduces healthcare costs, and mitigates hospital-acquired infections, benefiting vulnerable populations.

Inventors:

Vanni Bucci

Applications:

- Infection and Treatment
- Autoimmune Diseases
- Cancer Therapy

Benefits:

- **Targeted Treatment:** Genetically engineered microorganisms can be designed to specifically target and combat pathogenic bacteria, offering highly precise and effective treatment.
- **Antibiotic Resistance Mitigation:** This technology can help address the growing problem of antibiotic resistance by providing alternative treatment options for infections.
- **Microbiome Restoration:** Genetically engineered microorganisms can be used to restore and balance the human microbiome, potentially improving gut health and overall well-being.

Patent Status:

Patent Pending in USA and Europe
Patent Link: https://patents.google.com/patent/US20220218787A1/en
https://patents.google.com/patent/US20230126514A1/en

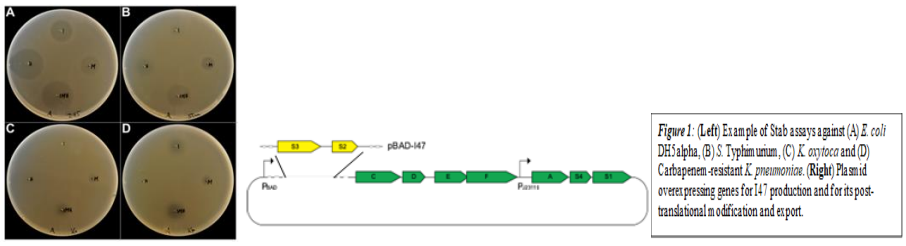

Figure 1: (Left) Example of Stab assays against (A) *E. coli* DH5alpha, (B) *S.* Typhimurium, (C) *K. oxytoca* and (D) Carbapenem-resistant *K. pneumoniae*. (Right) Plasmid overexpressing genes for I47 production and for its post-translational modification and export.

For more information:

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