# University of Illinois Urbana-Champaign Scientists Develop Selective Antibiotic Lolamicin Preserving Healthy Gut Bacteria



Scientists at the University of Illinois Urbana-Champaign have developed a novel antibiotic, lolamicin, which selectively kills harmful bacteria while preserving healthy gut bacteria. The development aims to address the side effects of traditional antibiotics, which can disrupt the gut microbiome, leading to increased vulnerability to infections and other health issues.

Prof. Paul Hergenrother and former doctoral student Kristen Munoz led the research, focusing on drugs that target gram-negative bacteria. The study, involving mice, showed that lolamicin was effective against over 130 multidrug-resistant bacterial strains, including E. coli, K. pneumoniae, and E. cloacae. In mice with drug-resistant septicaemia, lolamicin achieved a 100% rescue rate, and 70% in pneumonia cases.

Unlike standard antibiotics like amoxicillin and clindamycin, which altered the gut microbiome composition in mice, lolamicin maintained the natural balance of gut bacteria. The researchers advocate for further studies before human trials, highlighting this as a proof-of-concept for developing antibiotics that can differentiate between harmful and beneficial bacteria. This study is detailed in the journal Nature.