Title:

Generation of D-peptide Antibiotics via Mirror-Image Phage Display

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Abstract:

Vancomycin, a glycopeptide antibiotic is one of the last resort drugs used in the treatment of life threatening hospital infections caused by a resistant strain, such as Methicillin-resistant Staphylococcus Aureus (MRSA). Bacterial resistance to Vancomycin was first observed in 1988 with Vancomycin-resistant Enterococci (VRE); therefore, it is of concern that VRE type resistance can be spread to MRSA that is responsible for lethal infections in immune-compromised patients, such as those suffering from AIDS, and having undergone organ transplants. The aim of this project is to develop D-peptide antibiotics with a mechanism similar to that of Vancomycin via mirror image phage display using the enantiomers of cephalosporin and penicillin as phage display targets as the target to overcome bacterial resistance.