

International Conference on DRUG DISCOVERY AND DEVELOPMENT

March 03-04, 2022 | Webinar

ANTIBACTERIAL ACTIVITY OF THE PHYTOCOMPOUNDS AGAINST THE PREDOMINANT BACTERIAL SPECIES IN PAKISTANI SPECIMENS**Muhammad Hamza Tariq***National Taiwan University, Taiwan*

Background: Bacterial pathogens are reported to cause wide range of life-threatening infections, and most of the infectious bacteria have evolved to resist all classes of antibiotics. To tackle the issue of antibiotic resistance, phyto-compounds are being studied for their therapeutic properties against the bacteria. Objectives: This study was conducted to evaluate the prevalence of common bacteria in different body samples of Pakistani natives and to find the antibiotics resistance in the most prevalent identified species. Another important objective was to predict a phytochemical with a strong potential to act as future antibiotic against the predominant bacteria in various specimens. Methods: 972 specimens were collected from different sources of Pakistani patients. Bacteriological profiling of different specimens were performed using morphological and biochemical characterization. One of the survival proteins of the predominant Bacteria was taken for Molecular Docking analysis against the lead phyto-compounds from different plants using MOE software. Results: *S. aureus* was the most common bacterial species among various pathogens against which all of the commonly used antibiotics were found to be ineffective except Linezolid. The Emp binding protein, required for the survival of bacteria, was modeled and used for docking analysis. Sinapic acid, naringenin, daidzein, and calycosin, were the four phytoligands which exhibited maximum binding affinity with the target protein and also demonstrated the acceptable drug-like properties. Conclusion: From the study, it is suggested that Sinapic acid, naringenin, daidzein, and calycosin can be used as an antistaphylococcal agent to cope up the growing antibiotic resistance against this pathogenic bacteria.