J Bacteriol Parasitol 2016, 7:6 (Suppl)
http://dx.doi.org/10.4172/2155-9597.C1.026

Isolation and virtual screening of antimicrobial prodigiosin pigment from oxalotrophic *Serratia marcescens* OX_R strain

Samadhan Ramchandra Waghmode[1] and **Mangesh V Suryavanshi**[2]
[1]Elphinstone College, India
[2]National Centre for Cell Science, India

Prodigiosin is a multifaceted secondary metabolite produced by *Serratia* spp. having great potential as a pharmaceutical agent. In the present study we demonstrate that oxalate supplementation in peptone glycerol production media increased organoleptic characters and yield of prodigiosin pigment extracted from oxalotrophic *Serratia marcescens* OX_R isolated from Indian bat guano sample. The pigment was demonstrated in vitro as an antibacterial agent against common opportunistic skin surface pathogen *Staphylococcus aureus* NCIM 5021 strain as killing activity by agar well diffusion method. The docking analysis and pharmacophore modeling indicated that the probable mechanism of action of the prodigiosin was against *Staphylococcus aureus* DNA gyrase protein. The pigment was also found to efficiently dye both cotton and latex polymer. In summary, we describe here an oxalotrophic *Serratia marcescens* which may serve as a potent and economical resource of prodigiosin which owing to its dyeing and anti-bacterial activities finds future avenues to be developed as dressing material for nosocomial subjects or burn victim patients.

samadhanwaghmode@gmail.com

Quinolone resistant molecular mechanisms in *Escherichia coli* isolated from University Hospital in Egypt

Sherine Ahmed Abd El-Rahman Aly
Assiut University, Egypt

Fluorpquinolone resistant *E. coli* (FQREC) is an important cause of many infectious diseases worldwide. Our goal is to detect the prevalence of FQREC in Egypt in addition to unrevealing the most important molecular mechanisms of FQ resistance. Forty E. coli isolates were tested for their ciprofloxacin MIC by E-test and for mutations in genes coding for DNA Gyrase (gyrA & gyrB), Topoisomerase IV *(parC & parE)* and transcriptional regulators of AcrAB efflux pump; *soxR, soxS, marR* and *acrR* using Polymerase Chain Reaction (PCR) and sequencing. The contribution of PMQR to resistance was based on PCR detection of *qnrA, qnrB, qnrS, qnrD, aac(6')-lb-cr*, and qepA determinants. All FQREC isolate had at least double mutations within *gyrA* plus a third mutation in *parC*. Some FQR isolates also manifested an additional mutation either in the *parC* or in parE. Regarding the *AcrAB* pump regulators, stop mutations both in *soxR* and *acrR* were recorded in addition to silent mutations in *marA*. Interestingly the A12S mutation in *soxS* discovered in canine *E. coli* isolates have been found for the first time in 2 of human isolates of this study. Three of the FQSEC showed decreased susceptibility to ciprofloxacin, one of them harbor a single *gyrA* mutation and another one showed a stop codon in *soxR*. *qnrS* and *aac(6'lb)* were the most prominent plasmid found in 13 and 14 FQREC isolates respectively. *qnrA*. *qnrB* and *qepA* were found in fewer isolates. Interestingly, one FQREC isolate harbor all the five plasmids together. Two of the FQSEC isolates with reduced susceptibility contain PMQR.

s-aly71@windowslive.com