

Cytotoxicity effect of silybin nanoparticles on drug resistant strains of pseudomonas aeruginosa and evaluation of opr M gene expression

aref mohammadi pour*,

Pseudomonas aeroginoa is one of the most common antibiotic resistant bactria,as one of main cause of nasocomial infections is,one the same basis, the aim of the present study is evalution of the antibacteria activity of nano silibinin on the growth of patogenic strain P.aeroginosa in combination with ciprofloxacin. Herein , we isolated 50 clinical strains of Pseudomonas aeroginsa patients in Guilan province . after antibiogram and MIC determination , 9 ciproflxacin (CP) resistant isolates were treated by ciprofloxacin only and in the combination with nano-silibinin (nano-particle encapsulated silibinin).Antimicrobial activity of nano -silibinin was assessed by calculating the OD600 after 48h. (of isolated were resistant to all antibiotics and the highest resistance for ciprofloxacin (CP) was determined in 1024 µg/ml . our finding showed that a combined nano-silibinin and ciprofloxacin treatment reduced the bacterial counts below the lowest detectable limit after 48h.Also Q-RT-PCR analysis revealed that nano-silibinin can cause efficiency of orp M expression, subsequently increase of ciprofloxacin efficiency in resistance isolates. Our results suggested that nano-silibinin could be inhibits bactrial growth through different mechanism such as orpM down regulation in combination with lower dose of ciprofloxacin (1/2 MIC).

Keywords : Pseudomonas aeroginosa, nano-silibinin,Ciprofloxacin,orpM ,MIC.

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