# Effect of Curcumin-Encapsulated nanomicelles (OA400) on death of ciprofluxacin resistant strains of Pseudomonas aeroginosa and evaluation of mexB gene expression

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**Pseudomonas aeruginosa is an opportunistic gram-negative bacterium that is a major cause of nosocomial infections such as severe burns. Curcumin is the main component of turmeric (Curcuma longa) that has anti-cancer and anti-inflammatory effects. The aim of this study was evaluation of antibacterial effect of curcumin in Pseudomonas aeruginosa. In this study, Pseudomonas aeruginosa strains was obtained hospitals and laboratories in Guilan province. After disc difusion and MIC tests, 6 ciprofloxacin resistant strains of Pseudomonas aeruginosa were treated by ciprofloxacin (1/2MIC) only (control sample) and in the combination with curcumin -encapsulated in nanoparticles (test sample). After 24h, RNA extraction and cDNA synthesis was performed. Then, the expression of mexB gene was evaluated quantitatively by Real-time PCR method in curcumin treated and un-treated cells. Our study showed that the combination of ciprofloxacin with nano-curcumin inhibits the growth of Pseudomonas aeruginosa. In treated cells with curcumin and ciprofloxacin were downregulated of mexB gene compared to treated cells with ciprofloxacin alone. Our results showed that curcumin encapsulated in nanoparticles combined with lower concentrations of ciprofloxacin inhibits the growth of Pseudomonas aeruginosa through reducing mexB expression.**

**Keywords : Keywords: Pseudomonas Aeruginosa, Ciprofloxacin, curcumin, mexB, nanoparticles.**

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