

عنوان مقاله:

In vitro and in silico assessment of ketoprofen as quorum quenching compound against *Pseudomonas aeruginosa* PAO1

محل انتشار:

بیستمین کنگره بین المللی میکروب شناسی ایران (سال: 1398)

تعداد صفحات اصل مقاله: 1

نویسندگان:

Amineh Sadat Tajani - *Pharmaceutical Control Department, School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran*

Elham Jangi - *School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran*

Razieh Ghodsi - *Medical Chemistry Department, School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran*

Vahid Soheili - *Pharmaceutical Control Department, School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran*

Bibi Sedigheh Fazly Bazzaz - *Pharmaceutical Control Department, School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran*

خلاصه مقاله:

Introduction and Objectives: The *Pseudomonas aeruginosa* quorum-sensing (QS) is a complicated network of genome-wide regulation, activated in response to bacterial population density. One of the main components is the auto-regulating *Pseudomonas* quinolone signal (PQS) system that controls the construction of several virulence factors and biofilm-related factors. Therefore, inhibiting the QS circuitry is a promising approach for anti-virulence agents with much lowered resistance development possibility. **Materials and Methods:** Here, we tested a member of NSAID (Non-Steroidal Anti-Inflammatory Drugs) family, ketoprofen, in silico and in vitro as an anti-quorum sensing compound due to its chemical structure similarity to the natural *P. aeruginosa* signaling molecules (PQS). Its effect was assessed with colorimetric method by spectrophotometer against biofilm formation and several virulence factors production, besides evaluation of the synergistically effect with tobramycin. **Moreover,** its influence on the other major QS pathways (las and rhl) was also depicted. **Results:** Our study revealed that ketoprofen decreased the expression of virulence factors including pyocyanin, protease, pyoverdine and also lactonic compounds, inhibited the biofilm formation and reduced the effective dose of tobramycin against *P. aeruginosa* PAO1. **Conclusion:** As it was anticipated, ketoprofen is a quorum quenching compound and could be utilize in order to attenuate *Pseudomonas aeruginosa* pathogenicity.

کلمات کلیدی:

Pseudomonas aeruginosa, quorum-sensing, ketoprofen, biofilm, virulence factor

لینک ثابت مقاله در پایگاه سیویلیکا:

