

## عنوان مقاله:

CORRELATION BETWEEN ABILITY OF BIOFILM FORMATION WITH THEIR RESPONSIBLE GENES AND MDR PATTERNS IN CLINICAL AND ENVIRONMENTAL ACINETOBACTER BAUMANNII ISOLATES

## محل انتشار:

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## خلاصه مقاله:

**Background and Aim:** *Acinetobacter baumannii* potential to form biofilm and exhibit multiple antibiotic resistances may be responsible in its survival in hospital environment. Accordingly, our study was aimed to determine the correlation between ability of biofilm formation and the frequency of biofilm related genes with antibiotic resistance phenotypes in clinical and environmental isolates. **Methods:** A total of 75 clinical and 32 environmental strains of the *A. baumannii* were collected and identified via API 20NE. Antibiotic susceptibility was evaluated by disk diffusion and microdilution broth methods. Biofilm formation assay was performed by microtiter plate method. OXA types and biofilm related genes including *BlaOXA-51*, *BlaOXA-23*, *BlaOXA-24*, *BlaOXA-58*, *bap*, *blaPER-1*, and *ompA* were amplified by PCR. **Results:** The rate of MDR *A. baumannii* in clinical isolates (100%) was higher than environmental (81.2%) isolates ( $P < 0.05$ ). Analysis of the frequency of *blaOXA-23* gene revealed a statistically significant difference between clinical (85.3%) and environmental (68.7%) isolates ( $P < 0.05$ ). The prevalence of strong biofilm producers in clinical and environmental isolates were 58.7% to 31.2%, respectively. In the clinical and environmental isolates, the frequencies of *ompA*, *blaRER-1* and *bap* genes were 100%, 53.3%, 82.7% and 100%, 37.5%, 84.4% respectively. Statistical analysis revealed a significant correlation between the frequency of MDR isolates and biofilm formation ability ( $P = 0.008$ ). **Conclusion:** One dominant resistance pattern has shown among clinical and environmental isolates. There was a significant correlation between multiple drug resistance and biofilm formation and clinical isolates had a higher ability to form strong biofilms compared to the environmental samples.

## کلمات کلیدی:

*A. baumannii*, biofilm formation, biofilm-related genes, MDR, OXA type genes

## لینک ثابت مقاله در پایگاه سیویلیکا:

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