

## ***The Frequency of bla<sub>PER</sub>, bla<sub>VEB</sub>, bla<sub>CTX-M</sub>, tetA and tetB genes among Acinetobacter baumannii strains isolated from hospitalized patients in Tehran***

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### ***Abstract***

**Background & Aim:** Infections and outbreaks caused by multidrug-resistant *Acinetobacter baumannii* are prevalent and have been reported worldwide over the past twenty or more years. Beta-lactamase genes including *bla<sub>PER</sub>*, *bla<sub>VEB</sub>* and *bla<sub>CTX-M</sub>* confer resistance to beta-lactam antibiotics and *tetA* and *tetB* are responsible for resistance to tetracycline in such bacteria.

**Methods:** A total of 65 isolates of *A. Baumannii* from clinical samples were collected. Antimicrobial susceptibility testing was performed by the disk diffusion method according to the CLSI guideline and the presence of *bla<sub>OXA-51</sub>*, *tetA*, *tetB*, *bla<sub>VEB</sub>*, *bla<sub>CTX</sub>* and *bla<sub>PER</sub>* were screened via the polymerase chain reaction (PCR).

**Results:** The isolates were 100% resistant to gentamicin, ciprofloxacin, piperacillin, cefotaxime, ceftazidime and tetracycline. Resistance to minocycline and imipenem stood at 89% and 85%, respectively. All isolates were identified as multi-drug resistant (MDR). The genes *tetA*, *tetB*, *bla<sub>VEB</sub>*, *bla<sub>CTX</sub>* and *bla<sub>PER</sub>* were detected in 75.3%, 43%, 35.3%, 76.9% and 61.5% of isolates, respectively.

**Conclusion:** This study revealed the high prevalence of antimicrobial resistance genes amongst *Acinetobacter baumannii* and thus confirms the need for isolating and identifying them in clinical laboratory and hospital settings.

**Keywords:** *Acinetobacter*, Antibiotic resistance, Beta-lactamase