Identification of aac(2')-I Type b aminoglycoside-modifying enzyme genes in resistant *Acinetobacter baumannii*

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**ABSTRACT.** The aim of this study was to investigate the mechanism underlying the drug resistance of *Acinetobacter baumannii* toward aminoglycosides. A total of 32 *A. baumannii* strains were identified by molecular identification and subsequently isolated. The isolates were then amplified by polymerase chain reaction to analyze the 9 aminoglycoside-modifying enzyme genes and 7 16S rRNA methylase genes. Five types of aminoglycoside-modifying enzyme genes and 1 type of 16S rRNA methylase gene were detected in the 32 drug-resistant *A. baumannii* strains. Positive genes included 7 detection modes, of which the all-6-gene-positive mode *aac(2')-Ib+aac(3)-I+aac(6')-Ib+ant(3’)-I+aph(3’)-I+armA* exhibited the largest number of strains (12, 37.5%). The resistance of *A. baumannii* against aminoglycosides resulted from the presence of 5 types of aminoglycoside-modifying enzyme genes and the 16S rRNA methylase gene *armA*. This study is the first to isolate the *aac(2')-Ib+aac(3)-I+aac(6')-Ib+ant(3’)-I+aph(3’)-I+armA*.
Ib aminoglycoside-modifying enzyme gene from A. baumannii in a domestic clinical setting.

**Key words:** 16S rRNA methylase gene; *Acinetobacter baumannii*; Aminoglycosides; Aminoglycoside-modifying enzyme gene; Molecular identification; Resistance