

# Investigation of Structural Stability and Antibiotic Resistance Genes in *Acinetobacter* with Cold Atmospheric Plasma

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*Acinetobacter baumannii* is a gram-negative, nonfermenting coccobacillus that its species are opportunistic pathogens and cause nosocomial infections. Bacteria achieve their resistance to the antibiotics through three mechanisms. Aminoglycoside acetyl transferase are member of GCN5 super family's an AMEs for example *aac(6)Ib* on the amine group on position 6 aminohexose. Cold atmospheric plasma can without thermal and electrical damage reactive with surface. Either plasma with argon resource cause to produce of O<sub>2</sub> free radicals. That cause to kill of spores bacteria. In this study we are survey effect of Cold atmospheric plasma in different time on *Acinetobacter* and present of *aac(6)Ib* gene in *Acinetobacter baumannii* isolated Iranian hospital patient. A total of 43 non duplicated *Acinetobacter* clinical isolates were collected the Tehran hospital in 2016. DNA extraction carried out by gram negative DNA extraction kit. Two target genes and their primers used for PCR amplification. Result show that *aac(6)Ib* gene with 482bp present in 76% of resistant strain (43/33) and in amikacin resistant strain was 72.2% and in gentamicin resistant strain was 70.6%. plasma at 30s reduce bacteria growth to 50% and at 60,90,120 s bacteria no growth. Previous study showed that plasma has prevented effect on bacteria growth and presence of high variety of resistance gene especially aminoglycoside. This variety explain that other genes may be have role in *Acinetobacter* resistance for aminoglycoside. It believes that the ability of this pathogen to harbor diverse genetic elements parallels the experience with *P. aeruginosa*. Genomewide analysis will provide critical insights into this ability.

**Keywords :** *Acinetobacter*, Aminoglycoside acetyl transferase, Cold atmospheric plasma Aminoglycoside, PCR

