

TITLE: DETECTION OF ANTIMICROBIAL RESISTANCE GENES IN *CORYNEBACTERIUM STRIATUM* ISOLATED FROM A NOSOCOMIAL OUTBREAK IN RIO DE JANEIRO

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ABSTRACT

Corynebacterium striatum has been associated with increasing number of invasive infections. Studies have been recognizing *C. striatum* as an emerging pathogen, not only to immunocompromised but also to immunocompetent patients, usually involved in health care associated infections (HAI). Virulence factors, antimicrobial resistance profiles, and invasive properties to host cells are important approach for infection process caused by pathogens; however these mechanisms are not well recognized for *C. striatum*, or the role of those organisms as reservoir for antimicrobial resistance genes. The aim of this study was to characterize the antimicrobial resistance genes of *C. striatum* of different PFGE types, including both multidrug resistant (MDR) and multidrug susceptible (MDS) types, isolated from a nosocomial outbreak in Rio de Janeiro, Brazil. The genomic DNA of one representative strain of each PFGE type (PFGE types I and II (MDR) and PFGE types III and IV (MDS) were extracted by thermal lysis technique. The detection of resistance genes were performed by PCR, using the primers *ermX F* and *ermX R* (erythromycin), *cmxA*, *cmxB* (chloramphenicol), *aphA1F*, *aphA1 R* (aminoglycoside). The Analysis were observed by electrophoresis in 1.2% Agarose E-Gel® containing SYBR. The MDR *C. striatum* strains - BR1987 (PFGE type I) and BR2369 (PFGE type II) showed amplification to *cmx*, *aphA1*, and *ermX*, whereas the MDS *C. striatum* strains 1961 (PFGE type III) and BR1954 (PFGE type IV) did not amplify for any antimicrobial resistance genes. Resistance genes are not usually researched amongst *C. striatum* strains. The resistance of *C. striatum* to disinfectant agents, and resistance genes observed in other microorganisms with nosocomial circulation, reveals that *C. striatum* may contribute as gene carrier/reservoir for other pathogens that circulate in the nosocomial environment.

Keywords: *Corynebacterium striatum*, Antimicrobial resistance, Bacteria-host interaction, PCR, PFGE.

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