

**Title: MULTILOCUS SEQUENCE TYPES OF TOXIGENIC CORYNEBACTERIUM DIPHTHERIA FROM BRAZIL.**

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**Abstract:**

*Corynebacterium diphtheriae* is the main etiologic agent of diphtheria, a toxemic disease characterized by typical symptoms including pseudomembrane formation and severe obstruction in the respiratory tract. Prevention of diphtheria depends on the implementation of effective immunization programs using diphtheria toxoid vaccine. Toxigenic *C. diphtheriae* strains may circulate in a community for 20 years, even in countries where immunization programs are followed with great efficiency. The introduction of toxigenic strains in a susceptible population may result in diphtheria outbreak. During the last decades, cases of diphtheria have been notified in many Brazilian states. The endemicity of the diphtheria in Brazil motivates epidemiological and molecular investigations of this pathogen. In this study we applied multilocus sequence typing (MLST) to nine toxigenic *C. diphtheriae* isolates from different Brazilian states to examine their genetic diversity from 2012 to 2014 period. MLST defined 4 sequence types (STs) according with the protocol established by PubMLST *C. diphtheriae* database. Five isolates from Maranhão state (MA19, MA23, MA52, MA131 and MA150) isolated in March-June/2010 period and one isolate from Santa Catarina state (3681) February/2014 share the ST176. Two isolates (3682 and 3683) of distinct clinical cases occurred in São Paulo state (January and February/2014) belong to different STs. The isolate 3684 from Acre state (May/2014) belongto ST 174. These results showed different sequence types circulating in Brazil. Comparative analyses with *C. diphtheriae* isolated in different Brazilian states provided further information on the geographical circulation of some sequence types. Interesting to note that ST 174 and ST176 were previously isolated in Rio de Janeiro in 1981 (diphtheria cases) and 1999 (endocarditis), respectively. Studies of *C. diphtheriae* strains from Brazil by MLST can help to take preventive epidemiological measures.

**Key words:** *Corynebacterium diphtheriae*, MLST, diphtheria toxin

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