

TITLE: Pathogenic potential aspects of imposed by multidrug-resistant *Corynebacterium striatum* on worms *Caenorhabditis elegans*

AUTHORS: SILVA-SANTANA, G.; CABRAL, F.O.; FARIA, Y.V.; LOBO Jr. C.; MOTA, H.F.; SIMPSON-LOURÉDO, L.; MATTOS-GUARALDI, A.L.; SOUZA, C.

INSTITUTION: Institute of Microbiology Paulo de Góes, Federal University of Rio de Janeiro, Brazil; Faculdade da Região dos Lagos, FERLAGOS, Cabo Frio, Rio de Janeiro, Brasil; Universidade do Estado do Rio de Janeiro, Centro Biomédico, Faculdade de Ciências Médicas, Rio de Janeiro, Brasil; Laboratory of Diphtheria and Corynebacteria of Clinical Relevance, Faculty of Medical Sciences, Rio de Janeiro State University, Brazil.

ABSTRACT:

Corynebacterium striatum have been cited with increased frequency as pathogens of nosocomial infections in industrialized and developing countries including Brazil. *Caenorhabditis elegans* is one of the major model systems in biology based on advantageous properties such as short life span, transparency, genetic tractability, and ease of culture using an *Escherichia coli* diet, thus, has been progressively used as a model host to study the pathogenic mechanisms of gram-positive and gram-negative species. Additional virulence factors in respect of mortality and morphological changes of infected nematodes by *Corynebacterium* spp. need further investigation. This study, the susceptibility of *C. elegans* to *C. striatum* strains isolated from different clinical sites, with different virulence potential previous described were investigated. Therefore, methodologies previously described in the scientific literature were used. Initially, the results showed positive chemotaxis of nematodes towards *C. striatum*, briefly, the worms followed in direction of the different *C. striatum* strains. Evaluation of *C. elegans* survival in response to *C. striatum* contact indicated that nematodes were killed by all *C. striatum* strains tested, but at different levels. Additionally, different morphological changes in *C. elegans* nematodes were also observed, such as: Give phenotype (deformation of anal region); bacterium-induced bagging (bacterium-induced internal egg hatching) and Worm-star formation (aggregates of worms). In conclusion, *C. striatum* exerts virulence potential to *C. elegans* nematodes. Additional virulence factors in respect of mortality and morphological changes of infected nematodes by *C. striatum* need further investigation.

Keywords: *Caenorhabditis elegans*, *Corynebacterium striatum*, morphological changes.

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