

TITLE: EMERGENCE OF KPC-PRODUCING *Klebsiella pneumoniae* ISOLATES IN MINAS GERAIS, BRAZIL

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ABSTRACT:

Klebsiella pneumoniae has been recognized by the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC) and National Sanitary Surveillance Agency (ANVISA) as an important threat to global public health due to its high rates of antimicrobial resistance. Studies conducted in Brazil demonstrate high frequency of carbapenemase-producing enterobacterial isolates among clinical samples (n=20), highlighting KPC-2 producing *Klebsiella pneumoniae*. The aim of this study was to determine the occurrence of the *blaKPC* gene and their genetic context among carbapenem-resistant *Klebsiella pneumoniae* isolated in Juiz de Fora, State of Minas Gerais, Brazil. The association of other resistance mechanisms among the isolates was further evaluated. The *blaKPC-2* gene was detected in 20 strains. CTX-M (n=9), Qnr A1 (n=5), QnrB1 (n=3) and VIM (n=3) - encoding genes were found among the *K. pneumoniae* KPC-2. Sequence analysis of the genetic structure surrounding *blaKPC-2* identified an ISKpn7 on a Tn4401 element. This work has identified the presence of important mechanisms of resistance associated with the production of KPC-2 between *Klebsiella pneumoniae* in Minas Gerais state.

Keywords: *Klebsiella pneumoniae*, carbapenemase, *blaKPC-2*