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Molecular Detection of Carpabenem Resistant Gene (*bla*KPC) among Different Gram Negative Bacteria using Loop Mediated Isothermal Amplification (LAMP) Assay, Khartoum State, Sudan

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ABSTRACT

Background: The rapid emergence and spread of antimicrobial resistance are leading physicians to rely on the carbapenem class of antibiotics to treat the resistant organisms. However, increasing rates of carbapenem resistance have been reported. blaKPC-producing bacteria are extremely resistant to almost all different classes of antibiotics. This study was carried out to detect the presence of carbapenem resistant genes blaKPC among different gram negative bacteria at Khartoum State, Sudan.

Methods: The study was conducted at Khartoum State, during the period from March to July 2017. A total 61 isolates of different gram negative bacteria that were resistant to carbapeneme were screened for the presence of carbapenem resistant gene blaKPC using LAMP assay.

Results: Out of 61 isolates tested, Acinetobacter bumannii was the predominant organism. The Klebsiella pmumonaie carbapenemase gene blaKPC was detected in 23 (37.7%) of the isolates using LAMP assay. Conclusion: KPC production is an important mechanism of carbapenem resistance among different gram negative bacteria in Sudan. LAMP assay can provide rapid detection for carbapenem resistant genes. Keywords: blaKPC ,Multidrug resistance, Carbapenem, LAMP.