

عنوان مقاله:

Molecular detection of plasmid mediated colistin resistance genes (mcr) in multiple drug resistant Escherichia coli isolated from urinary tract infection in humans

محل انتشار:

بیست و چهارمین کنگره بین المللی میکروبی شناسی ایران (سال: 1402)

تعداد صفحات اصل مقاله: 1

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خلاصه مقاله:

BACKGROUND AND OBJECTIVESAntibiotic resistance represents a real health emergency worldwide, mostly due to the lack of new antibiotics active against multi drug resistant gram negative bacteria. According to the global epidemiological situation, in many infections, including urinary tract infections, some antibiotics such as quinolones and sulfonamides are less effective than in the past due to the high level of resistance. Colistin is recommended to use as the last option for the treatment of infection caused by gram-negative bacteria which is resistant to several drugs by the World Health Organization. The emergence of colistin resistant (mcr) plasmid gene in China in ۲۰۱۵ and its spread in different countries is the main public health concern in recent years. The purpose of this study is to investigate the presence of mcr-۱, mcr-۲, mcr-۳, mcr-۴ and mcr-۵ in Escherichia coli isolates causing urinary tract infections.**MATERIALS AND METHODS**In this study, seventy Escherichia coli isolates that cause urinary tract infections with multiple resistance and ۳۰ resistant urinary Escherichia coli isolates from Ghaem hospital in Mashhad were examined. Using multiplex PCR, mcr-۱, mcr-۲, mcr-۳ and mcr-۴, mcr-۵ genes were analyzed together.**RESULTS AND DISCUSSION**There are more than ۹ different types of mcr gene, and only five genes were examined in this study and there was no evidence of the presence of five resistance genes in this study. It is possible that the resistance to colistin is due to the presence of other variants and the presence of chromosomal resistance genes. Another interesting discussion is related to the high use of colistin in the pig industry. According to surveys, the countries that produce and consume the pork also have the most reports of the mcr genes. As a hypothesis, pigs can be assumed as the source of mcr genes expansion.**CONCLUSION**This study serves as a clue for further studies to investigate different variants of the mcr genes. It can also be concluded that probably other mechanisms besides the mcr plasmid genes cause resistance to colistin

کلمات کلیدی:

Resistance, Urinary tract infection, Escherichia coli, Colistin, UPEC, mcr

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