



Review

Molecular mechanisms and prevalence of colistin resistance of *Klebsiella pneumoniae* in the Middle East region: A review over the last 5 years



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ABSTRACT

The increasing prevalence of multidrug-resistant (MDR) *Klebsiella pneumoniae* is a serious clinical and public health problem, and colistin is the last-resort treatment option for MDR infections. However, resistance to colistin has been increasingly reported in the world, such as the Middle East region, where antibiotics are used more in the human and agriculture industry. In this paper, we review the available data on the molecular mechanisms and prevalence of colistin resistance of *K. pneumoniae* in the Middle East over the last 5 years. To the best of our knowledge, 590 colistin-resistant *K. pneumoniae* isolates were reported from six countries, including Turkey (438), Iran (86), Saudi Arabia (24), United Arab Emirates (31), Kuwait (5), Israel (3) and Lebanon (3), between 2013 and 2018. However, there has been no reports about colistin resistance among *K. pneumoniae* isolates in Iraq, Yemen, Syria, Jordan, Palestine, Oman, Qatar, Bahrain and Cyprus. Moreover, it seems that mutations and insertion sequence transpositions in the *mgrB* gene were the most common colistin resistance mechanisms among *K. pneumoniae* in the Middle East region, which is similar to other parts of the world.

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1. Introduction

Klebsiella pneumoniae is a member of ESKAPE pathogens, which are the leading cause of nosocomial infections worldwide, and the

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