

Promiscuity of resistance plasmid unprecedented

January 4 2012

Genetic analysis of an outbreak of drug-resistant infections in one institution shows an unprecedented level of transference of resistance among strains and even species of bacteria. Researchers from the University of Virginia and the Centers for Disease Control and Prevention report their findings in the current issue of the journal *mBio*.

Carbapenem-resistant Enterobacteriaceae (CRE) have emerged as a major cause of health-care associated infections worldwide. The global spread of CRE has largely been attributed to dissemination of a dominant strain of *Klebsiella pneumoniae* which produces a compound called K. pneumoniae carbapenemase (KPC). The gene for KPC is often contained on a plasmid, a [DNA molecule](#) that the bacteria can transmit to other bacteria.

In August 2007 the researchers identified their first known case of CRE at their institution, prompting them to immediately screen all clinical isolates for KPC production and conduct a molecular genetic analysis. Of 11 unique strains of different bacteria isolated from patients, 9 contained the same DNA plasmid with a specific [gene coding](#) for KPC.

“Here we report an outbreak of KPC-producing CRE infections in which the degree of horizontal transmission between strains and species of a promiscuous plasmid is unprecedented,” write the researchers. “The ease of horizontal transmission of carbapenem resistance observed in this study has serious public health and epidemiological implications.”

More information: mbio.asm.org/content/2/6/e00204-11

Provided by American Society For Microbiology

Citation: Promiscuity of resistance plasmid unprecedented (2012, January 4) retrieved 27 April 2024 from <https://phys.org/news/2012-01-promiscuity-resistance-plasmid-unprecedented.html>

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