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Population dynamics models based on the transmission mechanism of MCR-1

Leilei Qu, Xubin Gao, Baolin Kang, Mingfeng He, Qihui Pan

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Highlights

- We establish mathematical models based on the transmission mechanic of *mcr-1* gene.
- The *mcr-1* gene cannot be transmitted vertically in the population of animals.
- The models are analyzed using stability theory of differential equations and numerical simulations.
- The effect of three important parameters which can be controlled by human are discussed.
- Colistin resistance is not as serious as we imagined due to its transmission mechanism.

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