



229 Research paper

The blaNDM-1-Carrying IncA/C2 Plasmid Underlies Structural Alterations and Cointegrate Formation In Vivo

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In **Significant Impact Groups:**

AMU reduction strategies \ Monitoring and surveillance

Species targeted: Poultry;

Age: Not stated;

Summary:

Antimicrobial usage is most common trigger for the spread of antimicrobial resistance however reducing antibiotic use only is not sufficient to reverse resistance. Only eliminating antimicrobial selection pressure does not lead to plasmid loss in all plasmid/host combinations. In 2012, a type of Salmonella bacteria (Salmonella Corvallis) carrying a multi-resistance gene (blaNDM-1 plasmid) was detected in a wild bird in Germany. In recent broiler chicken infection study, we observed transfer of this genetic element to other bacteria. The stability of this gene transfer was observed in our in vivo study with broilers. Our study revealed most common structural alterations of this relevant gene were maintained in the experiments with the broiler flock. Results in this article indicate that for the future, reduction in antimicrobial usage must be combined with alternative approaches that target the loss of the resistance gene, in order to slow down the spread of resistance.

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Where to find the original material:

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