

## Impact of Cu<sup>2+</sup> ions on the structure of colistin and cell-free system nucleic acid degradation.

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Colistin and transition metal ions are commonly used as feed additives for livestock animals. This work presents the results of an analysis of combined potentiometric and spectroscopic (UV-vis, EPR, CD, NMR) data which lead to conclude that colistin is able to effectively chelate copper(II) ions. In cell-free system the oxidative activity of the complex manifests itself in the plasmid DNA destruction with simultaneous generation of reactive OH species, when accompanied by hydrogen peroxide or ascorbic acid. The degradation of RNA occurs most likely via a hydrolytic mechanism not only for complexed compound but also colistin alone. Therefore, huge amounts of the used antibiotic for nontherapeutic purposes might have a potential influence on livestock health.

### Słowa kluczowe

colistin, copper(II) complex, DNA and RNA degradation,  
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