Structure and dynamics of the lincomycin-copper(II) complex in water solution by ^{1}H and ^{13}C NMR studies.

Autorzy

Elena Gaggelli

Nicola Gaggelli

Daniela Valensin

Gianni Valensin

Małgorzata Jeżowska-Bojczuk

Henryk Kozłowski

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Streszczenie

The copper(II) complex of lincomycin in water solution at pH = 7.15 was characterized by ^{1}H and ^{13}C NMR and UV−vis spectroscopy. A 1:1 complex is formed in these conditions. The temperature dependence of spin−lattice relaxation rates was measured, showing that all protons behave in a similar fashion and slow exchange conditions prevail. The spin−lattice relaxation rate enhancements were interpreted by the Solomon−Bloembergen−Morgan theory. Reorientational dynamics of the complex was approximated by evaluating the motional correlation time of free lincomycin in water solution. The observed proton and carbon relaxation rate enhancements allowed us to calculate copper−proton and copper−carbon distances that were used for building a molecular model of the complex. The obtained data provide an interpretation of the relatively high stability constant.

Adres publiczny

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https://www.acs.org/content/acs/en.html