Cu(II) ion interaction with teicoplanin-vancomycin's analog.

Autorzy

Magdalena Brzezowska

Marzena Kucharczyk-Klamińska

F. Bernardi

Daniela Valensin

Nicola Gaggelli

Elena Gaggelli

Gianni Valensin

Małgorzata Jeżowska-Bojczuk

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Streszczenie

Teicoplanin, a member of the “last chance” antibiotic family has a similar structure and the same mechanism of action as parent drug vancomycin, which is proved to be an effective binder of Cu(II) ions. However, the potentiometric and spectroscopic studies (UV–visible, CD, NMR) have shown that the modification of the N-terminal structure of the peptide backbone in teicoplanin affects considerably the binding ability towards Cu(II) ions. While vancomycin forms almost instantly the stable 3 N complex species involving the N-terminal and two amide nitrogen donors, in case of teicoplanin only two nitrogen donors derived from the N-terminal amino group and adjacent peptide bond are coordinated to Cu(II) ion within the whole pH range studied. The major factor influencing the binding mode is most likely the structure of the N-terminus of the peptide unit in the antibiotic ligand.

Słowa kluczowe

Glycopeptide antibiotics, Teicoplanin, Copper coordination

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