Copper(II) complexes of lactobionic acid. Lactone-acid equilibrium and proton dissociation.

Autorzy

S. Bouhsina

P. Decock

Henryk Kozłowski

Giovanni Micera

J. Świątek

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Streszczenie

Potentiometric, polarographic, and spectroscopic data allowed us to establish the coordination equilibria in the Cu(II) lactobionic acid system. At lower pH regions the equilibrium between acid and lacton forms is also described. The stability constants of the cupric species are about a hundred or more times higher when compared to the galacturonic acid complexes, although the coordination modes in both systems are exactly the same. The obtained results clearly indicate that lactobionic acid is a very efficient chelating agent for metal ions most likely due to secondary interactions between protonated hydroxyl groups and metal ions, as well as possible interligand interactions. These interactions are likely to favor lactobionic acid rather than uronic acids, due to its higher flexibility.

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