Role of sulfur site in metal binding to thiopurine and thiopyrimidine nucleosides.

Autorzy

Teresa Kowalik-Jankowska

K. Várnagy

Jolanta Świątek-Kozłowska

A. Jon

I. Sóvágó

E. Sochacka

A. Malkiewicz

Jan Spychała

Henryk Kozłowski

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Streszczenie

Thiolation of uridine and purine bases leads to the formation of very effective ligands for Cd(II) and Ni(II) ions. Potentiometric and spectroscopic studies have shown that the substitution of oxygen by sulfur in uridine, which is a poor ligand for most metal ions, allows thiouridine to strongly bind both Cd(II) and Ni(II) ions. The {N, S} chelation is observed for thiopurines and thiouridines, even if the {S, N(3)} chelation in uridine derivatives leads to the formation of a thermodynamically unfavorable four-member chelate ring. Metal complexes with thiopurine with a five-member chelate ring are, however, considerably more stable (up to 3.5 orders of magnitude) than those of thiouridines.

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