

The coordination of copper (II) to 1-hydroxy-4-(glycyl-histidyl-lysine)-anthraquinone; a synthetic model of anthraquinone anti-cancer drugs.

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Results are reported of a pH-metric and spectroscopic (CD and ESR) study of the complexes formed between the pseudo-peptide 1-hydroxy-4-(Gly-His-Lys)-anthraquinone (Q-GHK) since, when complexed to copper ions, Q-GHK has been shown to be very effective in promoting the formation of free radicals and inducing DNA cleavage. Q-GHK forms very stable complexes with copper, the major species being bonded to three nitrogen donors in the coordination plane: an imidazole-N of the His residue and the peptide nitrogens of the Gly and His residues. This species is probably stabilized through bonding of the fourth planar coordination site of Cu(II) to the 9-anthraquinone oxygen. At high Q-GHK:copper ratios a second Q-GHK molecule is coordinated through its imidazole-N donor.

Adres publiczny

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