



**A STUDY OF THE MECHANISM OF CARCINOGENESIS OF Ni (II) AND Cu (II)
METAL IONS BASED ON SYNTHETIC PEPTIDE MODELS**

N.H. Hadjiliadis, G. Malandrinos, A.-M. Nunes, K. Zavitsanos

University of Ioannina, Department of Chemistry, Ioannina 45110, Greece

nhadjis@uoi.gr

With the aim to elucidate the mechanism of carcinogenesis induced by the transition metals Ni(II) and Cu(II), we have studied their interaction with the histone model peptides, AcPEPAKSAPAPKKGSKKAVTKAQKKDGGKRRKRCONH₂, AcSRKESYSVYVYKVLKQVHPDTGISSKAMGIM-CONH₂, Ac-NSFVNDIFERIAGEASSRLAHYNKRSTITISRE-CONH₂, Ac-IQTAVRLLLPGE-LAKHAVSEGTKAVTKYTSSK-CONH₂ (models of histone H2B, residues 1-31, 32-62, 63-93, 94-125 respectively), in aqueous solutions.

The metal-peptides systems were studied by means of potentiometry, UV-Vis, EPR and NMR spectroscopies. Both metals Ni(II) and Cu(II), form stable complexes with the named peptides, at physiological conditions (pH~7.0-7.5).

The speciation properties, assignment of various species, the possible hydrolytic reactions of the peptides in the presence of metal ions and the binary systems (Ni(II) or Cu(II)-peptides) mediated oxidation of 5-deoxy-guanosine in the presence of H₂O₂ will be presented and possible implications concerning metal induced toxicity/carcinogenesis will be discussed.

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