

The interactions of glycosylated decapeptide, the *Amadori product*, with copper(II) ions— a possible effect on the oxidative stress induced aggregation?

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Streszczenie

The coordination of Cu^{2+} ions by two linear decapeptides: H-Asp-Asp-Ser-Pro-Asp-Leu-Pro-Lys-Leu-Lys-OH (**P1**) and H-Asp-Asp-Ser-Pro-Asp-Leu-Pro-Lys(Fru)-Leu-Lys-OH (**P2**) was studied in detail and complex formation in 3–11 pH range was described. Their Cu^{2+} binding properties were investigated in depth through a variety of physicochemical methods including potentiometry and spectroscopic analysis (UV–Vis, EPR, CD and ESI-MS). Moreover, quantum chemical calculations were performed to explain experimental parameters. Obtained results suggest differences in the Cu^{2+} complex formation between analyzed ligands. For glycosylated analog (**P2**) the presence of bis-complex CuHL_2 is detected, which was confirmed by MS spectrometry. Moreover, the comparison of binding efficiency of two peptides indicated that coordination of metal ion by peptide (**P2**) in the physiological pH range is significantly stronger than non-glycosylated analog (**P1**).

Słowa kluczowe

Coordination chemistry, copper(II), Peptides

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