

# DNA AND BSA BINDING AFFINITY OF NEW SILVER(I) COMPLEX WITH *N*-PHENPROPYLQUINOXALINE-2-CARBOXAMIDE

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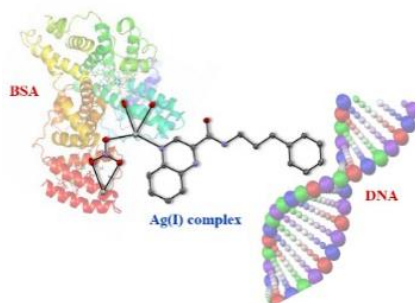
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As the binding of small molecules to DNA can affect different biological processes in which DNA participates, such as transcription and replication, the study of interactions of metal complexes with this biomolecule is of great importance. The effectiveness of metal complexes as drugs also depends on the degree of their binding to proteins present in the blood plasma, since these proteins act as their transporters. Silver(I) complexes with aromatic nitrogen-containing heterocycles have shown a broad spectrum of antimicrobial activity [1]. On the other hand, the structure of many clinically used drugs contain quinoxaline, which makes it very attractive in a medicinal chemistry [2]. Considering this, in the present study, we used a derivate of quinoxaline-2-carboxamide for the synthesis of new silver(I) complex,  $[Ag(NO_3)(pqx-2ca)]_n$  (pqx-2ca is *N*-phenpropylquinoxaline-2-carboxamide), which was characterized by physicochemical methods, while its structure was determined by single crystal X-ray diffraction analysis. The interactions of this complex with calf thymus DNA (ct-DNA) and bovine serum albumin (BSA) were investigated by different spectroscopic and electrochemical methods. The obtained results have shown that the studied complex can bind to BSA tightly and reversibly, while its interaction with DNA is rather electrostatic.



- [1] T.P. Andrejević, D. Milivojevic, B.Đ. Glišić, J. Kljun, N.Lj. Stevanović, S. Vojnovic, S. Medic, J. Nikodinovic-Runic, I. Turel, M.I. Djuran, Dalton Trans. 49 (2020) 6084.
- [2] G. Bouz, S. Bouz, O. Jand'ourek, K. Konečná, P. Bárta, J. Vinšová, M. Doležal, J. Zitko, Pharmaceuticals 14 (2021) 768.