

## SYNTHESIS AND BIOLOGICAL EVALUATION OF NOVEL TETRAZOLE DERIVATIVES

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An introduction of a nitrogen-containing heterocyclic fragment into the structure of natural compounds or known medicinal substances is a promising technique often used in medical chemistry for a drug design. Tetrazole fragment is a metabolically stable analog of carboxy or cis-amide groups, which is capable to effectively participate in various intermolecular interactions. The synthesis of tetrazolyl derivatives of natural compounds or active pharmaceutical ingredients is a promising way to novel biologically active compounds with a better pharmacological profile as evidenced by numerous examples.<sup>1</sup>

Herein, some results of such approach are presented. Thus, novel water-soluble complexes of palladium (II) and platinum (II) containing isomeric tetrazolyl acetic acids and their derivatives were synthesized and characterized. According to the spectroscopic data, the effective interaction of metal complexes with DNA was confirmed. According to the results obtained the complex interacts with DNA on the minor groove. Two complexes show high antiproliferative activity against human cancer cell lines HeLa and MCF-7. Three complexes showed high antimicrobial activity against E. coli. High and moderate anti-influenza activity in combination with a very low toxicity was also observed for 3'-1H- and 2H-tetrazolyl modified thymidine analogues. According to the results of molecular docking, these compounds can inhibit influenza virus polymerase. Some other types of tetrazolyl derivatives of natural compounds have been synthesized and their biological properties are discussed.

### Reference

1. Ostrovskii, V.A.; Popova, E.A.; Trifonov, R.E. Adv. Heterocycl. Chem. 2017, 123, 1.

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