SPECTROPHOTOMETRIC INVESTIGATION ON NUCLEIC ACIDS INTERACTIONS WITH SOME ANTIVIRAL DRUGS AND LIGAND MOLECULES: DEVELOPING OF NEW METHODS FOR NUCLEIC ACIDS DETERMINATIONS

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Nucleic acids recognition and analysis using variety of probing molecules is an area of active interests. In this presentation, interactions of DNA with some antiviral drugs and ligand molecules such as 5-iodo2$'$-deoxyuridine, Rifampicin, Levofloxacin, and ABTS have been studied. The mechanisms of interactions of ssDNA sequences (D_{11}, D_{12}, C_5, C_6), their dsDNA duplexes, ct-DNA, and human DNA with the mentioned compounds were investigated using photometric and fluoremetric methods. Decreases in the intensity of absorbance or quenching the fluorescence intensity upon addition of DNA to investigated compounds confirmed intercalation mechanisms. Newly developed photometric and fluorimetric methods for determining DNA based on its interaction with investigated compounds were proposed. Effects of pH, addition order of reagents, incubation time and temperature on formed intercalated were investigated. Analytical parameters such as selectivity, dynamic range and sensitivity of proposed methods were also investigated. The mass ratios of DNA:drug intercalates were estimated.