***Synthesis, characterization, quantum chemical calculations and non-linear optical properties of* sodium 2-((5-chloro-2-hydroxyphenylimino)methyl)benzene- sulfonate and its applications as a biological agent**

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In this study, the new novel benzenesulfonateSchiff base has been synthesized by the reaction of sodium 2-formylbenzenesulfonate with 2-amino-4-chlorophenol. The chemical structure was determined by using spectroscopic and quantum chemical methods.

The antimicrobial activities of the compound were investigated by using for their minimum inhibitory concentration (MIC). Interactions with DNA were examined by using the UV-Visible and agarose gel electrophoresis methods. UV-Visible spectroscopic studies of the interactions between the compounds and calf thymus DNA (CT-DNA) showed that the compound interacts with CT-DNA via electrostatic binding. The antioxidant activity of the Schiff base was measured by using the DPPH method. The compound showed higher antioxidant activity than butylated hydroxytoluene (BHT).

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