ANION SENSING, BIOLOGICAL ACTIVITIES, SPECTROSCOPIC AND CRYSTALLOGRAPHIC STUDIES OF 5-METHYLSALICYLALDEHYDE SCHIFF BASE

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Abstract- In the present work, a Schiff base receptor (E)-2-((3,5-bis(trifluoromethyl)phenylimino) methyl)-4-methylphenol has been synthesized with the ability to detect anions, by colorimetry and spectrometry (UV-Vis) in DMSO. The molecular structure of the Schiff base was determined using spectroscopic and X-ray single-crystal data. The minimal inhibitory concentration (MIC) of the compound was screened in vitro against bacteria and yeast cultures using broth micro dilution tests. UV-Vis spectroscopy studies of the interactions between the compounds and calf thymus (CT) DNA showed that the compound interacts with CT-DNA via intercalative binding. Also, DNA cleavage was investigated of compound by agarose gel electrophoresis. A DNA cleavage study showed that the Schiff base cleaved DNA without any external agents. This study is supported by a grant (Project Number: TÜBİTAK 115F253) from the Scientific and Technical Research Council of Turkey.

Keywords- Schiff Base, Crystal Structure, DNA Cleavage, Colorimetric Sensors.