Synthesis And use of Novel Water-Soluble Polyethyleneimine-Based Schiff bases as an Cation Sensor, DNA Binding, DNA Cleavage And Anti-Microbial Agent

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Novel colorimetric cation sensor based on polyethyleneiminehydrochloride as Schiff bases were synthesized**.** The molecular structure of the PEI.HCl-Schiff bases were characterized by FT-IR, ^{1}H-NMR, ^{13}C-NMR, LC-MS and UV-Vis spectroscopic methods. The chromogenic sensing ability of the Schiff bases were investigated with colorimetric and UV-Visible spectroscopy [1-2]. The designed sensor exhibited highly selective recognition for Fe^{2+}, Co^{2+}, Cu^{2+}, Cr^{3+} and Fe^{3+} among a wide range of metal ions tested in water.

Moreover, the antimicrobial activities of Schiff bases were tested for its minimum inhibitory concentration (MIC), and the interaction with calf thymus DNA (CT-DNA) was investigated using UV-Visible spectroscopy [3-4]. DNA cleavage study showed that Schiff bases can successfully cleave DNA without any external agents.

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