# Spectrophotometric determination of $Zn^{2+}$ with a synthetic Schiff base of 4-chloro-2-(quinolone-8-yliminometyl)-phenol

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The complex formation between a synthesized Schiff base (SB) of 4-chloro-2-(quinolone-8-yliminometyl)-phenol and various cations of K, $Mg^{2+}$, $Al^{3+}$, $Cr^{3+}$, $Mn^{2+}$, $Fe^{2+}$, $Co^{2+}$, $Zn^{2+}$, $Ce^{3+}$ and $Pb^{2+}$ in ethanol was firstly investigated by spectrophotometric method. These absorption spectra were evaluated with respect to Schiff base concentration and various pH of the color formation reactions. It was found that the complexation reaction of $Zn^{2+}$ and SB in ethanol was completed in the wavelength range of 370-500 nm at pH 5.0, and resulted the maximum wavelength at 440 nm. Optimization of parameters of the $Zn^{2+}$ complex formation was carry out, such as the stability of SB solution, the equilibrium time of color formation, the ratio of metal to ligand, the SB concentration and the calibration range. Under the optimum conditions, the proposed method was successfully applied to the determination of $Zn^{2+}$ in synthetic samples.

**Keywords** Schiff base; Spectrophotometric method; $Zn^{2+}$; Synthetic samples