

SYNTHESIS, CHARACTERIZATION AND CHROMOGENIC PROPERTIES OF 4-HYDROXY-(2-HYDROXYBENZYLIDENE) BENZOHYDRAZIDE

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ABSTRACT

In this work, hydrazine and hydrazide compounds were subjected to condensation reaction with ketone and different aldehyde derivatives affording the corresponding expected hydrazone, 4-hydroxy-(2-hydroxybenzylidene)benzohydrazide(L1) is synthesized and characterized. The chemical structures were found to be consistent with both analytical and spectroscopic data (CHN, FTIR, UV/Vis, TGA, ¹H NMR and ¹³C NMR). The chromogenic property of the ligand was carried out in different solvents including methanol, ethanol, acetone, acetonitrile, dimethylsulphoxide, and tetrahydrofuran.

KEYWORDS: Acetonitrile; Dimethylsulfoxide; Ethano; 4-hydroxybenzoylhydrazine; Tetrahydrofuran; Methanol; Hydrochloric acid..

INTRODUCTION

Hydrazones are organic compounds of formula $R_1C=N-NR_2$ where R_1 and R_2 represent H, aliphatic and aromatic group. They are usually formed by the condensation reaction between hydrazine and ketones or aldehydes. The oxygen atoms in aldehydes and ketones are replaced with the $N-NR_2$ functional group. Hydrazones are practically insoluble in hot and cold water but some are partially soluble in cold ethyl alcohol and ether. They possess a free amino group and can condense with another molecule of the carbonyl component to form hydrazone derivative or azine (Fieser and Fieser, 1956). The hydrazone unit offers a number of attractive features: a degree of rigidity, a conjugate π -system and a deprotonation (Beveset *al.*, 2009).

Hydrazone ligands and their complexes with different transition metal ions have been thoroughly investigated due to their biological activity. The arylhydrazones contain in their structure the $(-CO-NH-N=C<$ group) that imparts on these chelating agents fungicidal. This paper reports the synthesis, characterization and chromogenic properties of 4-hydroxy-(2-hydroxybenzylidene)benzohydrazide.

EXPERIMENTAL

Chemicals and solvents

In the preparation of 4-hydroxy-(2-hydroxybenzylidene)benzohydrazide, the chemicals and solvents considered were of analytical grade, and were used without further purification. Table 1 List of the chemicals and solvents.