

Structure, synthesis of Schiff base ligand, 1,3-bis (5-Bromo Salicyl-imino) Propane

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ABSTRACT:

Schiff bases are condensation products of primary amines with carbonyl compounds gaining importance day by day in present of scenario. Schiff bases are the compounds carrying imine or azo-methine ($-C=N-$) functional group and are found to be a versatile pharmacophore for design and development of various bioactive compounds. Schiff bases exhibit biological activities and also utilized as catalysts, dyes, intermediate in organic synthesis and as potential bioactive core.

KEY WORDS:

Schiff bases, Carbonyl compounds, Azomethine group, Biological, Potential.

INTRODUCTION:

Schiff bases are aldehyde and ketone like compounds in which carbonyl group ($-C=O$) is replaced by an amine or azomethine group. Schiff bases containing imino azomethine group with potential binding ability has drawn a lot of attention in the recent years, because of wide range of biocidal activities. The first condensation product of primary amine with carbonyl compounds was reported by Hugo Schiff 1-3. Schiff bases from an important class of the most widely used organic compounds and have a wide variety of application in many fields including analytical, biological and inorganic.

MATERIAL & METHODS:

Chemical Required:

The chemical and solvent used were of analytical grade i.e. of sigma chemical company. 5-bromocyclyldehyde 1,3- diaminopropane, ethanol, ether etc.

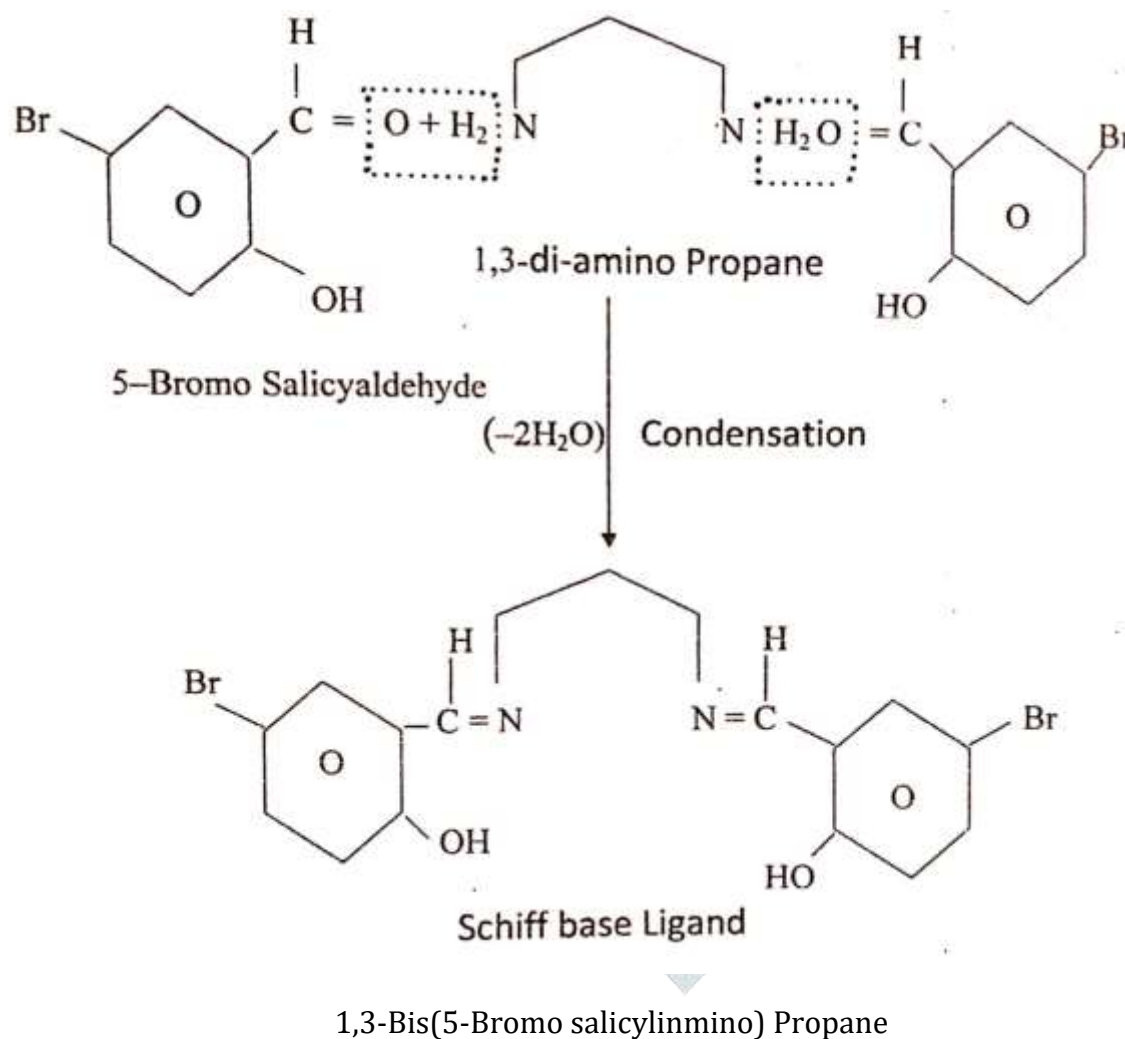
PROCEDURE:

Preparation of ligand:

2.01g(0.01 mole) of 5-bromo salicylaldehyde was completely dissolved in minimum volume of aqueous-ethanolic solution. 0.75g (0.01 mole) of 1,3- diamino propane was also completely dissolved in the minimum volume of ethyl alcohol. Both the solution were mixed together gradually with regular shaking. Then, the resulting

solution was refluxed under condenser fitted with a water-tap for two and half an hour at room temperature. On cooling the solution under ice-bath, a light yellowish colour solid was obtained. The solid was separated by filtration and washed with cold water and ethyl alcohol. The crude product was recrystallized with ether and dried over in an oven. The melting point of the compound was recorded and found to be +1, 196°C.

The expected chemical reaction taking place during the course of the condensation process for the proposed ligand is given under:



RESULT AND DISCUSSION:

Elemental analysis:

On chemical analysis it has been observed that the compound contains 45.96% carbon, 3.66% hydrogen, 60.45% nitrogen and 36.20% of bromine. This corresponds to molecular formula $\text{C}_{17}\text{H}_{16}\text{N}_2\text{Br}_2\text{O}_2$.

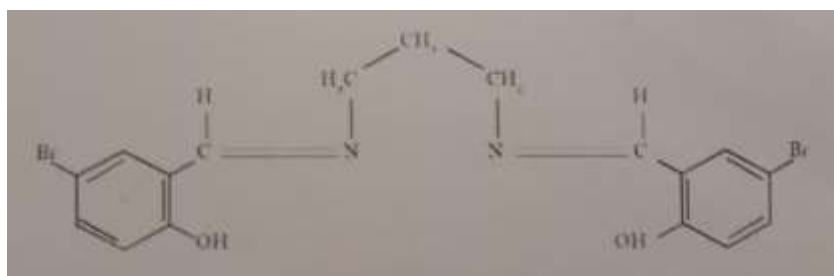
I.R. spectra:

V, 560^{cm-1} (C-Br), 1540 ^{cm-1}(C-O, phenolic), 1650 ^{cm-1}(>C=N-), 2740 ^{cm-1} (C-H,aldimino), 3010 ^{cm-1}(C-HAr), 3460 ^{cm-1}(-OH phenolic).

¹HNMR(CDCl₃):

G=1.59-2.76(b,6H,propane), 4.32(S, 2H, -C=N, aldimino), 5.34-6.32(b,2H,-OH,phenolic), 7.32-8.21(m,6HAr).

Thus on the basis of the result of I.R. and ¹HNMR spectroscopy, the following structure for 1,3-bis(5-bromo salicyl-imino) propane has been proposed.



(1,3-bis(5-bromo salicyl-imino) propane)

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