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Title Key: Synthesis of Schiffs Bases From 2-Amino-4 Aryl-3…

Synthesis of Schiffs Bases From 2-Amino-4 Aryl-3-Cyano-5 Oxo-*4H*-5, 6, 7, 8 Tetrahydrobenzopyran Derivatives And Substituted Aldehydes And Their Tranzition Metal Complexes

D. T. Biradar[1], D. B. Muley[1] M. B. Swami[2] Shinde A R[1]

[1]P.G.Department of Chemistry Reaserch Center Shivaji Mahavidhalya Udgir
[2]Department of Chemistry Baherji Smark Mahavidhalaya Basmat

Abstract

A rapid, efficient, environmentally green synthesis of schiffs base as new ligand and their complexes with Ni, Fe, Co and Cu developed using 2-amino-4-aryl-3-cyano-5-oxo-4H 5,6,7,8 tetrahydrobenzopyran derivatives and substituted aldehydes. Different catalysts are used to synthesise 4H tetrahydro benzopyran .Its characterization is confirmed by taking IR, NMRspectra. The schiffs base act as ligand ,is bidentet when it treated to metal coplexes in 1:1 ratio [metal : ligand] complexes are formed.

Keywords: synthesis of schiffs bases,from 2-amino-4-aryl-3-cyano-5-oxo-4H,-5,6,7,8 tetrahydrobenzopyran and substituted aldehydes,coordination complexes ,characterization.

1. Introduction

In chemical reaserch and industry has increased efficient,economical clean, short time procedures increases attention in recent years . Development of such methods is great demand in coordination chemistry.

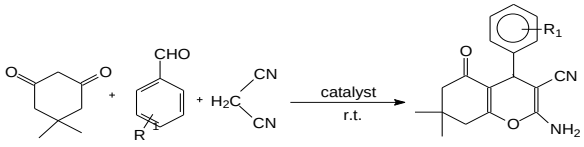
Schiffs bases have basic nature which play very important role in anticancer drug .,antiinflomentry drug, etc. which also act as catalyst due to good stability and solubility . If these schiffs bases synthesizes from biologically active molecules such as [4H] – benzopyrans,which increases the bioactivity of bases . If such bases when treated with biologically active metals like Zn, Co, Cu , it enhances biologicall activities.

2. Experimental Section

An aqeous solution of 1,3 cyclohexandione 1mmol. ,1mmol. of aldehyde and 1m mol. Of malononitrile was stirred at room temperature in presence of catalysts[CAN / Silica supported Fluroboric acid ,$Mgcl_2$,etc in 1mmol.%] corresponding 4H-benzopyran is formed.

SPECTRAL DATA OF 2-AMINO-4-ARYL,-CYNO,5-OXO 4H -5,6,7,8 Tetrahydrobenzopyran IR-Spectra-3332 ,3185 ,2965 ,2226 ,1662 ,1585 $cm^{-1.}$

HNMR Spectra-1.04,(m,6H,CH_3) 2.8 [d 2H J=16.0 8H] ,2.24 [d 2H] 4.59 [m 4H] 7.02 [S 2H ,NH2] 7.15-7.36 [M 4H Ar- H]



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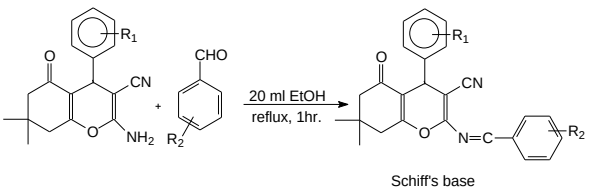
3. Preapration Of Schiffs Base



Dissolve 1mmol.of 4H benzopyran in 20 ml of ethanol add 1mmol. Of substituted aldehyde and reflex for 1hr. / grind in mortar using 2-4 drops of ethanol colour is changes put it in cold water crystal appears ,filter and recrystallise using ethanol.

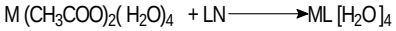
Selected Spectroscopic Data- IR Spectra
The strong single band 3332 -3185 due to aromatic amine does not observed in IR spectra of schiffs base. Band at 1689-1471 is obtained due to formation of imine group

NMR Spectra-

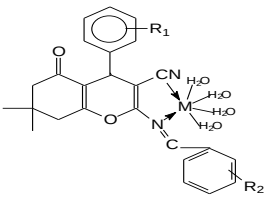
Peak at 7.02 [s, 2H , NH2] does not observed in Schiff's base, 7.25-7.46 [M ,5H ,Ar---H] IS observed.

4. Synthesis Of Metal Complexes

Solution of ligand in methanol and the metal salt were mixad thoroughly in 1;1 metal ligand ratio and 1% KOH solution in methanol was added to adjust PH between 7-8 and reflex for 1-2 hr. we get complex which monitored on TLC .



M-Cu , Fe , Co ,Zn .



Selected Spectroscopic Data of complex -
Their is presence of band at 525-425 ,350-330

Medium intencity band appears due to nitrile shift to lower frequency indicates complex of azomethene nitrogen to metal.

NMR Spectra-

Aromatic protons appear at 7.09-7.36

Use of bioactive molecules like 4H tetrahydrobenzopyran for schiffs bases using different aldehydes has antitumor, antipyretic,antinflommentry property . If these schiffs bases treated bioactive metals like Co,Fe ,Cu , Zn which enhances their bioactivity .

5. References

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