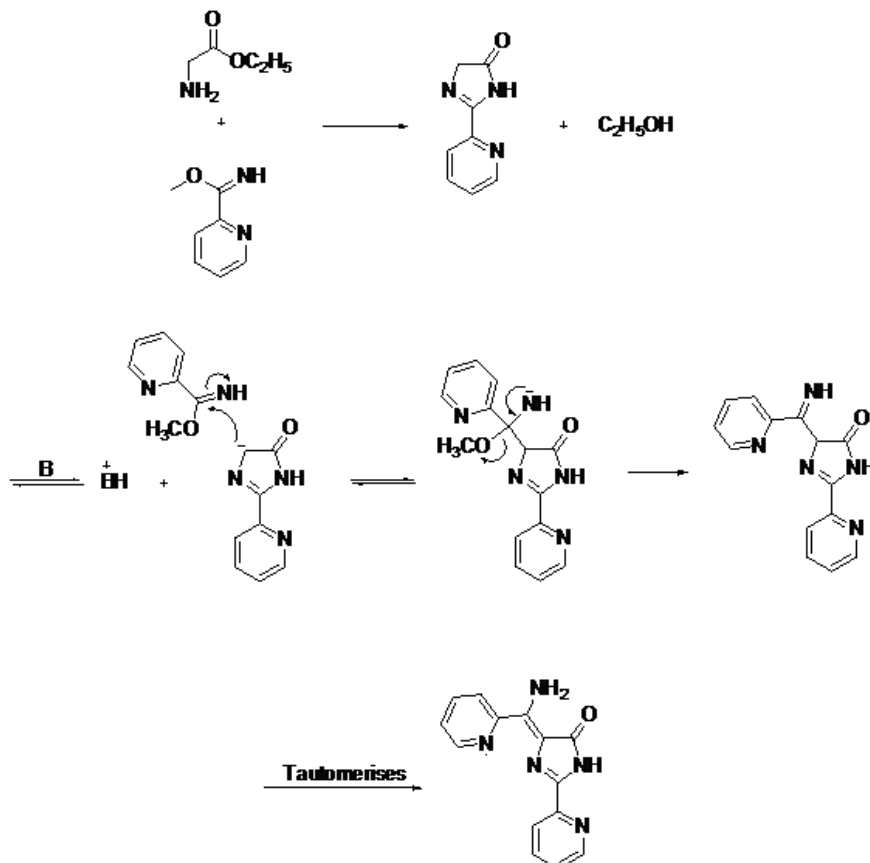


breast cancer cell line MDA-MB-231. On comparing the anticancer activity of trichloride and aminoimidazolinone from 2-cyanopyridine trichloride was more potent than the aminoimidazolinone to the cancer cells lines: HeLa, A375 and MDA-MB-231.



**Fig. 1.** Synthesis of 4-(amino-2-pyridyl)methylene-2-(2-pyridyl)-2-imidazolin-5-one

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## MEDICINAL PROPERTIES OF SOME SCHIFF'S BASE COMPLEXES

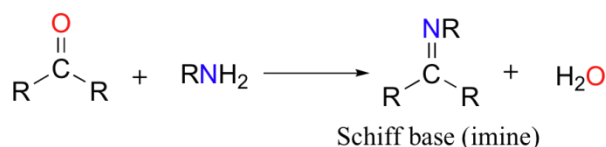
Dr. Deepa K

PG Department of Chemistry, KAHM Unity Women's College, Manjeri-67612,

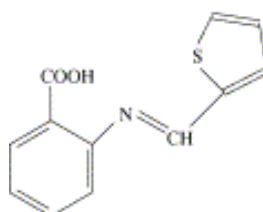
Malappuram (DT), Kerala

E-mail: [deepakarat@yahoo.com](mailto:deepakarat@yahoo.com)

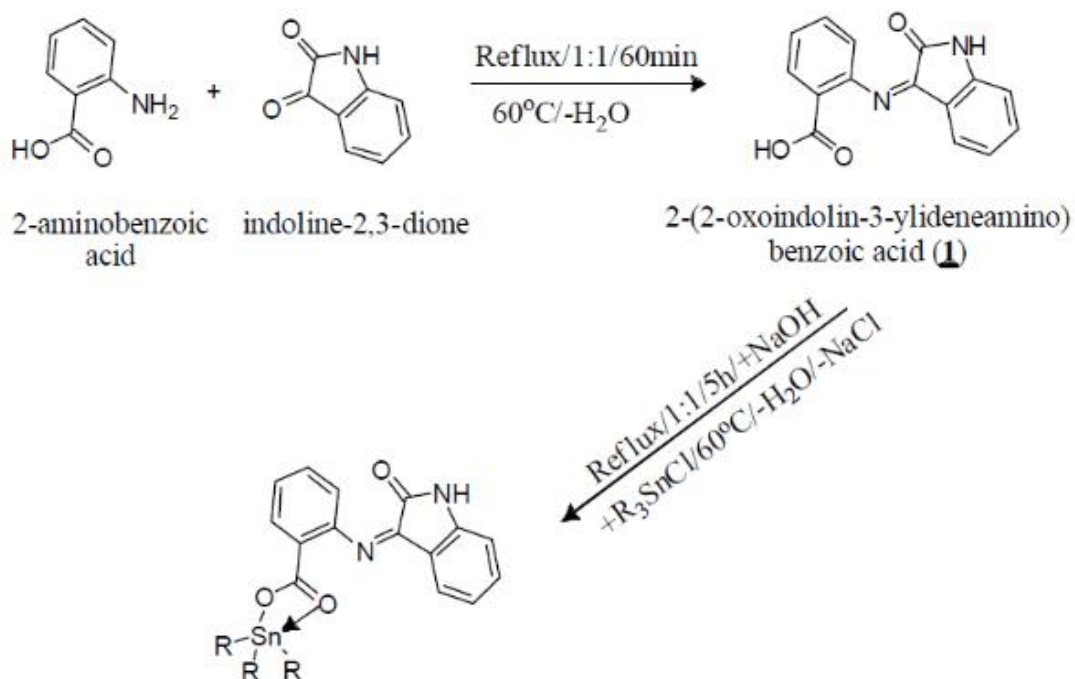
Compounds containing an azomethine group (-CH=N-), known as Schiff bases are formed by the condensation of a primary amine with a carbonyl compound. Schiff bases of aliphatic aldehydes are relatively unstable and are readily polymerizable while those of aromatic aldehydes, having an effective conjugation system, are more stable. These compounds and their metal complexes are very important as catalysts in various biological systems, polymers, dyes and medicinal and pharmaceutical fields. Schiff bases appear to be an important intermediate in a number of enzymatic reactions involving interaction of an enzyme with an amino or a carbonyl group of the substrate. One of the most important types of catalytic mechanism is the biochemical process which involves the condensation of a primary amine in an enzyme usually that of a lysine residue, with a carbonyl group of the substrate to form an imine, or Schiff base. Several azomethines were reported to possess remarkable antibacterial, antifungal, anticancer and diuretic activities. The activity is usually increased by complexation. Therefore understanding the properties of both ligands and metal can lead to the synthesis of highly active compounds. The influence of certain metals on the biological activity of these compounds and their intrinsic chemical interest as multidentate ligands has prompted a considerable increase in the study of their coordination behaviour. Development of a new chemotherapeutic Schiff bases and their metal complexes is now attracting the attention of medicinal chemists.



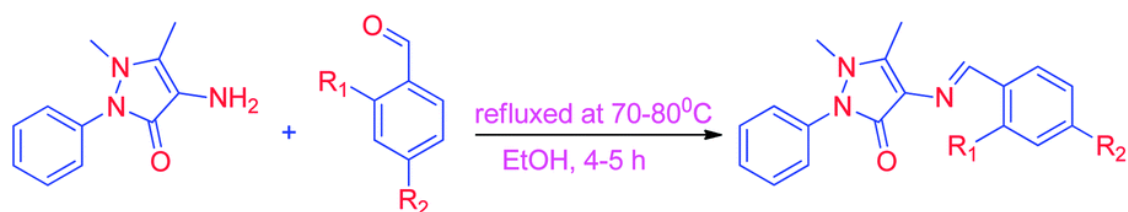
Metal complexes of Schiff base derived from 2-thiophenecarboxaldehyde and 2-aminobenzoic acid have been recommended and/ or established a new line for search to new antitumor particularly when one knows that many workers studied the possible antitumor action of many synthetic and semi synthetic compounds.



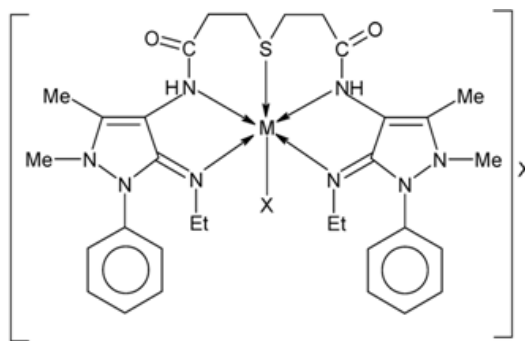
Schiff base derived from indoline-2, 3-dione and 2-aminobenzoic acid and its tin complex showed antibacterial activity against *Staphylococcus aureus*. The results compared with standard drug (Imipinem) have indicated that compounds were active, but activity was lesser than the standard drug. This activity might be due to the presence of a hydroxyl and phenyl group.



Schiff bases and metal complexes of 4-aminoantipyrine are also known for their great variety of applications in the area of catalysis and biological activity ranging from antitumour, fungicide, bactericide, antiinflammatory and antiviral activities. Reports on drugs showed increased activity when administered as metal complexes rather than as organic compounds. Investigation on the interaction of DNA with small molecules is also important in the design of new types of pharmaceutical molecules. Some kinds of metal complexes interact with DNA that could induce breakage of DNA strands. In light of research, it has been concluded that the precise nature of the Schiff base ligands is of remarkable importance in the interaction of the complex with the DNA molecule.



Where,  $\text{R}_1 = \text{H}, \text{R}_2 = \text{H}$  : AAPB  
 $\text{R}_1 = \text{OH}, \text{R}_2 = \text{H}$  : AAPS  
 $\text{R}_1 = \text{H}, \text{R}_2 = \text{Cl}$  : AAPC  
 $\text{R}_1 = \text{H}, \text{R}_2 = \text{OCH}_3$  : AAPM



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