

A Review on Medicinally Important Heterocyclic Compounds Derived from Schiff Bases

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Abstract: Heterocyclic compounds constitute the largest and most varied family of organic compounds. Today there are a lot of heterocyclic compounds are known, day by day the number is increasing rapidly due to the enormous synthetic research and also their synthetic utility. Heterocyclic compounds have a role in most fields of sciences such as medicinal chemistry, biochemistry also another area of sciences. In this review, we cover synthesis of medicinally important heterocyclic compounds from Schiff bases.

Keywords: Heterocyclic compounds, Schiff bases, Medicinal chemistry.

1. Introduction

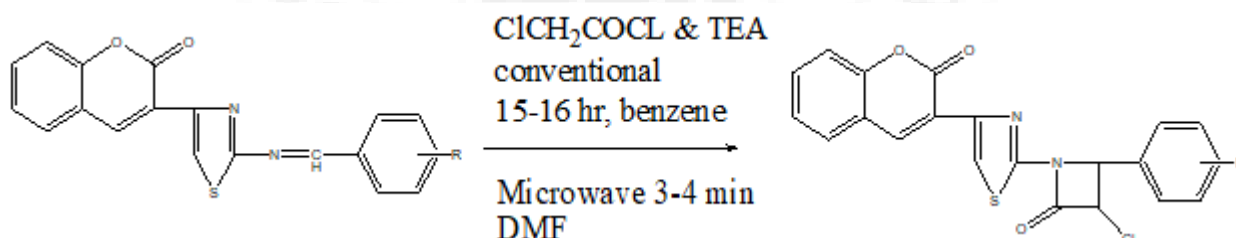
Heterocyclic compounds are the cyclic organic compounds which contain at least one hetero atom, the most common heteroatom are the nitrogen, oxygen and sulphur but heterocyclic rings containing other hetero atoms are also widely known. Carbocyclic compound a cyclic organic compound containing all carbon atoms in ring formation. Heterocyclic compounds considered one of the vital classes of organic compounds, which are used in many biological fields, due to it is activity in multiple illnesses.

Medicinal chemistry which is becomes an important field in chemistry because the joining between chemistry and the medical life issues by trying to study the common diseases and how should we solve it. This branch of the modern chemistry has been beginning when isolating and purifying

active materials from plants and animals tissues and taken from microorganism and their fermentation products has become the focus of attention of researchers around the world. The medical chemistry based on the classical branches of chemistry especially organic chemistry and biology and some area of physics. According to the literature review heterocyclic compounds represents important place in medical chemistry.¹

Various Biologically Active Heterocyclic Compounds Synthesized From Schiff Bases

Synthesis of Azetidinone from Schiff base- 2-Azetidinones have been prepared by the reaction of Schiff bases with chloroacetyl chloride and triethylamine. The reaction is carried out by conventional and microwave method.²

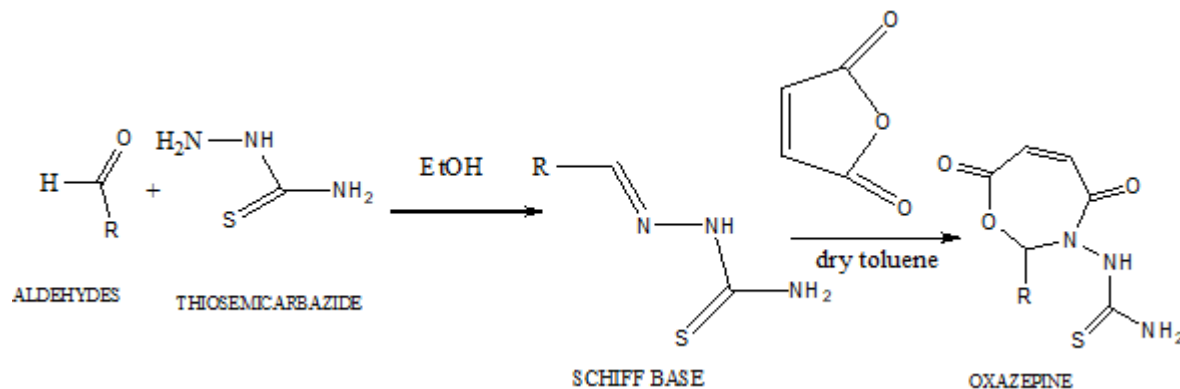


Synthesis of Imidazolidinones from Schiff base- Imidazolidinones have been synthesized by the reaction of Schiff bases with 2-aminoacetic acid and dioxane.³



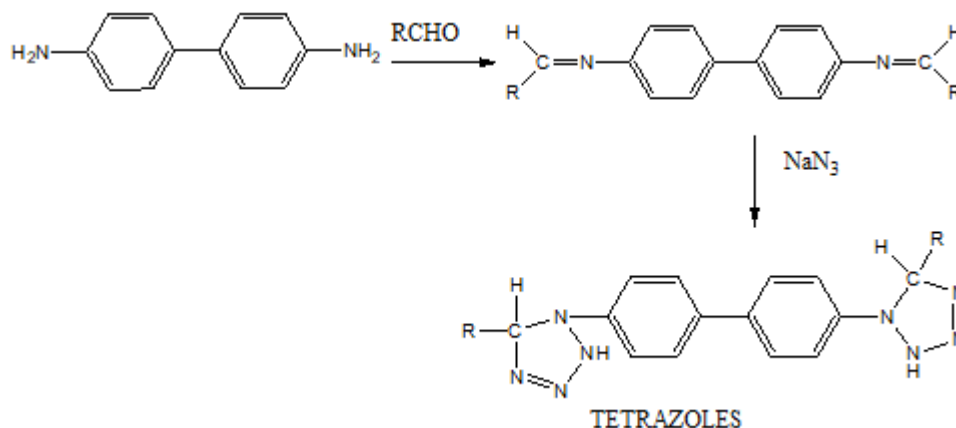
Synthesis of Oxazepine from Schiff base- A mixture of Schiff base (0.012 mole) and 2,5-dioxofuran (0.025 mole) was dissolved in (20 mL) toluene. The mixture was heated

for 5 hours in water bath at (70°C), excess solvent was distilled, and the precipitate was filtered and recrystallized from ethanol.⁴



Synthesis of Tetrazoles from Schiff base- Compound was dissolved in (20mL) tetrahydrofuran and mixed with

(0.004mole) sodium azide. These mixtures were heated in water bath at temp. 50-60⁰ C.⁵



2. Conclusion

Heterocyclic compounds like azetidinone, tetrazole, oxazepine and imidazolidinone are one of the important sorts of organic compounds, which are taking a wide range in the medicinal chemistry this due to the huge number of heterocyclic compounds that used in medicine as drugs for varied diseases. The drugs which contain the core of heterocyclic its skeletons such as Antifungal activity, anti-inflammation, anti-bacterial, antioxidants, anticonvulsant, ant allergic, herbicidal activity and anticancer, etc.

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