

**Nitrogen Heterocyclic Five Member Compounds**

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Abstract: Nitrogen heterocyclic five member compounds with a pyrrolidine moiety or pyrrolidine derivatives are generally found in several bioactive molecules. Pyrrolidine, commonly known as tetrahydropyrrole, is a cyclic secondary amine with a five membered heterocycle involving carbon atoms and nitrogen. Pyrrolidine can be made from 1,4-diaminobutanes by the action of acids. Moreover, it can act as a strong base, and it is usually utilized in homogeneous nonaqueous reactions. The articles usually contain definitive and detailed reports of important findings obtained via original work in heterocyclic chemistry. Some show new synthetic methodology towards active heterocyclic materials which contain efficient route, reproducible methodology, stereospecific materials, high product yields, and enantiomeric excess. Some research works had also discuss on findings from biological 2 Journal of Chemistry studies. Scientifically and fundamentally sound manuscripts with sufficient scientific data and evidence are hugely considered.

Nitrogen heterocyclic five member compounds with a pyrrolidine moiety or pyrrolidine derivatives are generally found in several bioactive molecules. Pyrrolidine, commonly known as tetrahydropyrrole, is a cyclic secondary amine with a five membered heterocycle involving carbon atoms and nitrogen. Pyrrolidine can be made from 1,4-diaminobutanes by the action of acids. Moreover, it can act as a strong base, and it is usually utilized in homogeneous nonaqueous reactions.

Major fractions of organic compounds isolated from nature are composed of nitrogen heterocycles. Such five membered nitrogen heterocycles with a pyrrolidine ring system contain nicotine, tryptamine, and vinblastine and possess major biochemical, pharmaceutical, and agricultural importance. These natural compounds can have hydroxyproline, 2-pyrrolidone, streptopyrrolidine, or diphenylprolinol rings as part of their well-defined conformations. Apart from having important structural features in many naturally occurring bioactive natural products, these ring systems can act as all-round intermediates towards the synthesis of more complex medicinally significant compounds such as aniracetam, doxapram, cotinine, clausenamide, lactacystin, detoxine, and codonopsinine. These compounds have gathered much attention lately due to their varied medicinal properties such as antibacterial, antibiotics, antitumor, and cytotoxic effects.

Constructing highly functionalized heterocyclic compounds would seem to be necessary and important prior to furnishing several of these biologically active natural constituents. Preparing enantiopure polysubstituted pyrrolidine derivatives can even be a big challenging task. A number of stereoselective techniques for the synthesis of polysubstituted pyrrolidines have been said in the last decade. This is due to the fact that the demand for enantiomerically pure drugs, agrochemicals, and food additives is increasing, due to pure enantiomers are common target specific and have fewer side effects than racemic mixtures. Moreover, the global market for chiral drugs alone presently stands at USD 100 billion and steadily rises at the rate of 9% per annum.

In the course of synthesis of a complex product containing several steps, it is important for practical and economical

reasons to propose the proper stereochemistry in an early stage of the synthesis. This can be made by using chiral building blocks that are enantiomerically pure and have functionalities that allow them to be changed in the desired products. Although, stereocontrolled synthetic methods will also have to be selected to acquire the potential products.

Varied synthetic knowledge and chemical alternatives or transformations would be inevitably analysed when conducting research in such field. During such synthetic processes, new pharmacological agents beneficial in curing human diseases and new scientific findings may well be produced.

RESEARCH ACCOUNTS IN THE AREA OF ORGANIC CHEMISTRY AND SYNTHESIS OF FIVE-MEMBERED NITROGEN HETEROCYCLIC COMPOUNDS (BOTH AROMATIC AND NONAROMATIC), MORE NATURAL PRODUCTS WITH SUCH HETEROCYCLIC SYSTEMS, SUBMITTED AND CONFIRMED IN THIS PUBLICATION COMPLEMENT THE NEEDED STANDARDS AND FEATURES OF THE JOURNAL.

THE ARTICLES USUALLY CONTAIN DEFINITIVE AND DETAILED REPORTS OF IMPORTANT FINDINGS OBTAINED VIA ORIGINAL WORK IN HETEROCYCLIC CHEMISTRY. SOME SHOW NEW SYNTHETIC METHODOLOGY TOWARDS ACTIVE HETEROCYCLIC MATERIALS WHICH CONTAIN EFFICIENT ROUTE, REPRODUCIBLE METHODOLOGY, STEREOSPECIFIC MATERIALS, HIGH PRODUCT YIELDS, AND ENANTIOMERIC EXCESS. SOME RESEARCH WORKS HAD ALSO DISCUSS ON FINDINGS FROM BIOLOGICAL 2 JOURNAL OF CHEMISTRY STUDIES. SCIENTIFICALLY AND FUNDAMENTALLY SOUND MANUSCRIPTS WITH SUFFICIENT SCIENTIFIC DATA AND EVIDENCE ARE HUGELY CONSIDERED.