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ARTICLE

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Synthesis, Structure Elucidation and Characterization of Novel Substituted 2,6-diarylpiperidine-4-one Derivatives

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ABSTRACT

In this article, new derivatives of 4-piperidinone nucleus by were synthesized using Mannich reaction and synthesized substituted 2,6-diarylpiperidine-4-one derivatives. A total of eight compounds were synthesized and characterization by elemental analysis, FTIR and ^{1}H NMR spectral analysis.

KEYWORDS

Piperidione, Anti-inflammatory, Antihistamine, Mannich reaction, 2,6-Diarylpiperidine-4-ones.

INTRODUCTION

Piperidine alkaloid occurs in few species of higher plants, microorganism and animal's lobe line is the main constituent of lobelia alkaloid (*Lobelia inflata*). Piperidine is an active ingredient in black pepper (*Piper nigrum*). It is respiratory stimulant in mammal on hydrolysis it gives piperic acid and piperidine [1]. Other piperidine alkaloids are isopelletierine, coniine, arecoline, anabasine. 4-Piperidones are important piperidine derivatives. Other method available for their synthesis, *e.g.* Dieckmann cyclization of diesters, Thorpe-Ziegler cyclization of dinitriles and cyclization of dialkyl ketones or acetone dicarboxylic esters with aldehyde ad primary amines in Mannich reaction [2]. Among the various heterocyclic compounds, nitrogen containing heterocyclic especially piperidine-4-ones, have considerable importance because of their various biological properties such as antiviral, antitumour, anti-cancer and anti-depressant activities. 4-Pyrodone pyridine-4(1*H*)-one are tautomeric with 4-hydroxypyridine [3].

4-Piperidinone is a derivative of piperidine ring, having molecular formulae C_5H_9NO. It is also named as azinane-4-one having molecular mass 99.13 g/mol [4]. A classic named reaction for the synthesis of piperidone is Petrenko-Kritschenko piperidone synthesis, which involves combination of alkyl-1,3-acetonedicarboxylate with benzaldehyde and an amine [5,6]. This multi-component reaction is related to the Hantzsch pyridine synthesis. The structure of piperidone nucleus also recognized in molecular framework of naturally occurring compound and synthetic compound. 2,6-Diarylpiperidine-4-one is a heterocyclic organic compound, in this piperidine ring contains diaryl

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