SHORT COMMUNICATION

Synthesis and Spectral Characterization of 4-Hydroxy-3-Methoxybenzaldehyde Derivatives

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ABSTRACT

Vanillin plays an important role in flavouring and as aroma agent. Vanillin has been used as a chemical intermediate in pharmaceutical and chemical syntheses. Schiff base products have been proved to poses beneficial biological effect towards health. Fourteen vanillin derivatives were synthesized *via* Schiff base reaction using p-vanillin as the starting material reacted with 2-aminobenzenethiol, furan-2-carbohydrazide, 2-hydrazinylpyridine, 4-hydroxybenzohydrazide, acetohydrazide, benzohydrazide, (diphenylmethylidene) hydrazine, pyridine-4-carbohydrazide, benzene-1,2-diamine, phenylhydrazine, 2-hydroxybenzohydrazide, 1,3-benzothiazol-2-amine, 1-cyclohexylthiourea respectively. All of the compounds were characterized by elemental analysis, FTIR and ¹H NMR.

Keywords: Vanillin, Schiff bases, Amines

Para-vanillin is an organic compound which can be found synthetically or naturally in vanilla plant and one of the most widely used as flavouring agents (Chobpattana *et al.*, 2000; Fitzgerald *et al.*, 2005; Walton *et al.*, 2003). The chemical structure of p-vanillin is shown in Figure 1.

Many researchers used 4-hydroxy-3methoxybenzaldehyde (vanillin) as a starting material for Schiff bases reaction. Schiff bases are compounds of containing C=N group. These compounds are often synthesized from amine and aldehyde and possess diverse biological activities (Li *et al.*, 2003). Schiff base derivatives are widely used in chemical and pharmaceutical application such as the combination of thiazolyl and benzothiazolyl rings with vanillin type moiety for their antiinflammatory activity (Litina & Geronikaki, 2003), antimicrobial (Pandeya *et al.*, 1999a), antifungal (Pandeya *et al.*, 1999b, 1999c; Popp, 1964), anti-HIV (Hodnett & Dunn, 1970; Samadhiya & Halve, 2001), anti-tumor activities and as herbicides (Latif *et al*, 1983). In this work, we report the reaction of *p*-vanillin with various types of amine compounds. The general synthesis rote of the Schiff bases is shown in Scheme 1. They have been characterized by elemental analysis (CHN), FTIR and ¹H NMR.



Figure 1. Structure of *p*-vanillin.

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