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Synthesis and Biological Evaluation of Some Schiff Bases Compounds Derivative of 2,5-di(*p*-aminophenyl) -3,6-diphenyl Pyrazine

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Abstract: In this present, a new series of Schiff bases from 2,5-di(*p*-aminophenyl)-3,6-diphenyl pyrazine in the presence of the benzil, 4-bromo benzaldehyde, 4-chlor benzaldehyde, 4-hydroxy benzaldehyde, 4-nitro benzaldehyde and 4-methyl benzaldehyde were studied. The structures of the synthesized compounds were determined on the basis of their Infra-red spectra, H-nuclear magnetic resonase and analysis elemental analysis spectral data. The purity of the synthesized compounds was checked by performing thin layer chromatography. The antibacterial activity was evaluated by paper disc diffusion method.

Key words: *P*-amino benzaldehyde, pyrazine, Schiff bases, synthesis, spectroscopic.

1. Introduction

The synthesis and properties of pyrazine derivatives were reviewed in 1968 by A. Lawson and A-F. Al-sayyab. The reaction of carbonyl compounds lead to the formation of C=N bounds by dayagi, degani in patati the chemistry of the carbon-nitroge double bond. new methods for the synthesis of these Schiff bases compounds derivative of 2,5-di(*p*-aminophenl)-3,6-diphenyl pyrazin Schiff bases are characterized by the -N=CH-(imine) group which is important in educidating the mechanism of transmutation and racemisation reactions in biological systems [1, 2]. The reaction is straight forward and proceeds in high yields. In general ketones react more slowly than aldehydes and higher temperatures and longer reaction times are often required [3-5]. Schiff bases of pyrazine is very important in preparation new complexes, these compounds present a great variety of biological activity ranging from antitumor, fungicide and bactericidal. All the compounds have been characterized on the basis of the melting point, thin layer chromatography, Infra-red spectra and analysis elemental analysis data. The antimicrobial activity of these compounds was evaluated by agar diffusion method.

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2. Experiments

Melting points of the synthesized compounds were determined by open capillary and are uncorrected the purity of the compound was checked using percolated TLC plates using (benzene:methanol (8:2) solvent system the developed chromatographic plates were visualized under UV. IR spectra were recorded using KBr on FTIR. C.H.N analyzer and ^{1}H-NMR spectra (300 MHz) & so samples at Al albeit university.

2.1 Synthesis of Pyrazine [6-8]

4-aminoBenzoin (0.01 mol) was added to a solution made up of α-amino acid alanine (0.01 mol) and sodium ethnocide (0.01 mol) in absolute ethanol (30 mol).

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Preparation, Characterization and Biological Activity Studies of New Azo Compounds

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Abstract: A new series of azo were derived from 2,5-di(p-amino phenyl)-3,6-diphenyl pyrazine in the presence of benzoic acid, salicylic acid, p-amino salicylic acid, p-methoxy phenol and p-methyl phenol. The structures of the synthesized compounds were determined on the basis of their FTIR, UV (ultraviolet), elemental analysis and H-NMR (H-nuclear magnetic resonance) spectral date. The purity of synthesized compounds was checked by performing TLC (thin layer chromatography). The antibacterial activity was evaluated in DMSO (dimethyl sulfoxide).

Key words: Pyrazine, benzoic acid, salicylic acid, p-amino salicylic acid, p-methoxy phenol, p-methyl phenol.

1. Introduction

Azo-derivatives are very important pigments for the synthetic leather and vinyl polymers. Therefore, their thermal stability is very important for practical application. In the last years some new azo derivatives anti-inflammatory and cytoprotective effects azo compounds are characterized by the Diazonium coupling.

$$Ar\text{-}N = N\text{-}Ar$$

The reaction substitution Electrophile Diazanium ion is attacking the benzene ring from para site if the ring was substituted with drawing group because of the diazanium size, while when para is substituted with another group, diazanium ion will attack in ortho site by nether attacking meta site absolutely.

In this paper series new aze a form 2,5-di(p-amino phenyl)-3,6-diphenyl pyrazine and aromatic compound were synthesized. The new derivatives were identified by C.H.N analysis, FTIR, UV and H-NMR spectrum. Another study includes the biological activity.

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2. Experiments

2.1 Physical Measurements

All chemicals used in the syntheses were of reagent grade and used without further purification. All melting points were determined using an electro thermal digital melting point apparent. The analyses of C.H.N of compounds were carried out on C.H.N.O.S EA 3000 elemental analyzer. IR spectra were measured in Pye vuicom 9712 spectra photo meter. H-NMR spectra were measured with Hitacha R.24 B (3000 MHz) in DCl3 with TMS as internal standard and UV-Vis spectrophotometer using ethanol as solvent.

2.2 Synthesis of New Azo Compounds

In a typical preparation 25 mL of distilled water containing 3 mL hydrochloric acid was added to (0.01 mol) 2,5-di(p-amino phenyl)-3,6-diphenyl phrazine. The resulting mixture was stirred and cooled to 0 °C, then a solution of (10 m mole) sodium nitrite in 20 mL of water was added drop wise. The so-formed diazonium chloride was consecutively coupled with alkaline solution (10 m mole) such as p-methyle phenol in 150 mL ethanol.

Synthesis of derivatives of thio oxo imidazoline by microwave activation

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الخلاصة

الهدف من هذا البحث تحضير مشتقات جديدة من مركبات ثايواوكسو الايمدازولين من تفاعل مركبات البنزيل 4 مثيل بنزيل ، 4- برومو بنزيل ، 4- اينو بنزيل 4- ثنائي مثيل امينو بنزيل ، 4- كلورو بنزيل مع الثايو يوريا بطريقتين الطريقة الكلاسيكية والطريقة الحديثة باستخدام الاشعة المايكروفية وتم تشخيف المركبات بواسطة التقنيات التالية C-HN واطياف الاشعة تحت الحمراء وطيف الرنين النووي المغناطيسي

Abstract

Synthesis routes to diphenyl thiohydantion derivatives in the presence of the benzils ,4- chloro benzil , 4- bromo benzil , 4- methyl benzil , 4- dimethyl amino benzil and 4- amino benzil with thiourea by two methods .
Method A: conventional route known as Bilt'z synthesis of diphenyl thiohydantion
Method B: in presence of microwave activation

Introduction

In recent years microwave irradiation using commercial domestic ovens for the optimization and acceleration of organic reactions has rapidly increased (1,2).
It has been reported that reactions such as Diels - Alder , ene , synthesis of hetrocycles , and polymer synthesis (3,6) could be facilitated by microwave irradiation in a good energy transferring medium.
Microwave activation has received increasing interest in organic synthesis (7,8) because of rapid reaction rates increased yields and cleaner reaction conditions solvents useful for microwave activation are dipolar solvents especially those with a high boiling point (9) such as DMSO and DMF because we have obtained a yield of (3a)%40 of the classical Biltz but in microwave the yield of (3a) slightly increased to %80

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Strecker Degradation A new route to the Synthesis of Pyrazines and Oxazoles

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Abstract

Decarboxylative transamination of ∝ - amino acids glycine , alanine and phenylalanine in the presence of the benzoins; 4,4 – dimethyl benzoin 4-N,N- dimethyl amino benzoin; 4 – N,N dimethyl amino – 4` - chloro benzoin ; 4, 4` - dichloro benzoin led to the formation of oxazoles, tetra – substituted – pyrazine and the corresponding benzils .

Introduction

The previous accepted mechanism for decarboxylative transamination of ∝ - amino acids involving the concerted process 1a → $2a^1$, analogous to that established for β, ϒ - unsaturated acids 1b→2b2 was rennovated by Grigg's who proposed the intervention of 1,3 – dipolar species (4) via the Z witterionic from (3) . In a later paper 4 , Grigg's showed that primary and secondary ∝ - amino acids react with aldehydes and ketones, with concomitant decarboxylation to give azomethine ylide (4) via an intermediate oxazolidine – 5 – one (5).

In the absence of added dipolarophile the azomethine ylide undergoes 1, 2 – prototropy from nitrogen to c (1) or ((3) generating imines . The regio chemistry of the prototropy is controlled by the electron density at c (1) or c(3) in (4) . this