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Graphical Abstract

Heterocyclic Letters 2: iss.-4, (2012), 389-393

A high-speed and eco-friendly catalytic system for knoevenagel condensation of aldehydes with malononitrile and ethyl cyanoacetate in aqueous media

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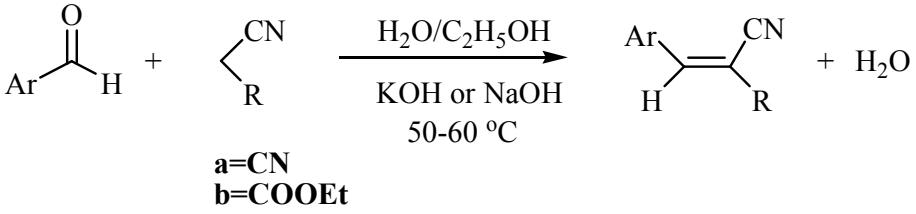
Knoevenagel condensation of several aromatic and heteroaromatic aldehydes with ethyl cyanoacetate and malononitrile was carried out in water: ethanol mixture in the presence of catalytic amounts of potassium hydroxide or sodium hydroxide at 50-60˚C. The new technique provide numerous common electron-poor alkenes with high-speed and the products do not require purifying workup.



Heterocyclic Letters 2: iss.-4, (2012), 395-400

Microwave-assisted synthesis of 2-substituted-4H-3, 1-benzoxazine-4-ones in molten tetraethylammonium chloride as an ionic liquid

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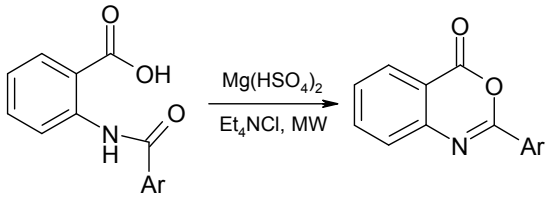
Synthesis of 2-substituted 4*H*-3, 1-benzoxazine-4-ones from N-acyl anthranilic acid in the presence molten tetraethylammonium chloride as an ionic liquid under microwave irradiation has been reported. small amounts of $Mg(HSO_4)_2$ was an important factor in catalyzing to complete the reaction in a short period of time. All compounds were identified by comparison of their spectral data and physical properties with those of the authentic samples.



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Heterocyclic Letters 2: iss.-4, (2012), 401-404

A Highly Efficient Solvent Free Synthesis Of Hydrazides Using Grinding Technique

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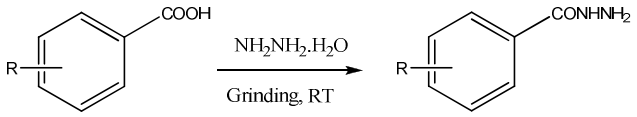
A highly efficient eco-friendly synthesis of hydrazides directly from carboxylic acids is described under solvent-free conditions using grinding technique.



Heterocyclic Letters 2: iss.-4, (2012), 405-410

Chemisrty Of Novel Spiro Oxazolo-Thiadiazoles Derivatives – Synthesis, Characterization And Biological Evaluation

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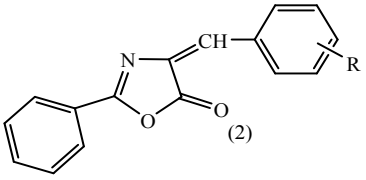
A series of novel 2-N-acetyl hydrazino,4-acetyl,7-phenyl,9-(substitutedbenzylidine),1-thia, 3,4,8,triaza,6-oxa Spiro[4.4] nona-2,7-diene (4) were synthesized and screened for their antibacterial activity. The structures of the products were confirmed by IR, ^{1}H, ^{13}C NMR and elemental analysis.



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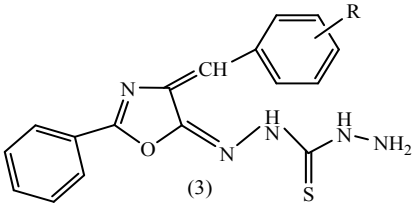

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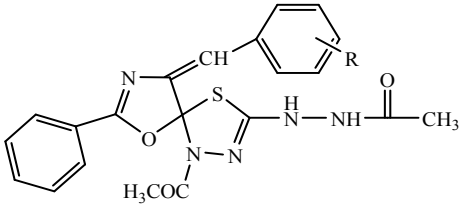

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Heterocyclic Letters 2: iss.-4, (2012), 411-418

Zinc Oxide Nanoparticles: An Environmentally Benign And Reusable Catalyst For The Synthesis Of 1,8-Dioxo-Octahydroxanthene Derivatives Under Solvent-Free Conditions

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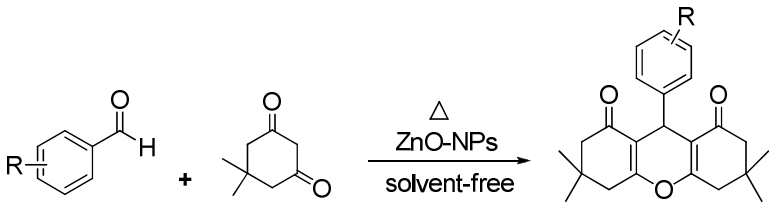
[b] School of studie of chemistry, Jiwaji university, Gwalior-474002, M. P., India

* E-mail: mpkaushik@rediffmail.com



A simple and an efficient method for the synthesis of 1,8-dioxo-octahydroxanthene derivatives by using zinc oxide nanoparticles (ZnO-NPs) has been described. This method was found to be efficient, environmentally benign and convenient for the synthesis 1,8-dioxo-octahydroxanthene derivatives. The reusability up to four cycles with the same catalytic response is the unique features of the heterogeneous catalysis.

Heterocyclic Letters 2: iss.-4, (2012), 419-428

Synthesis, Spectral Studies, And Antimicrobial Activity Of Metal Complexes Of Schiff Bases

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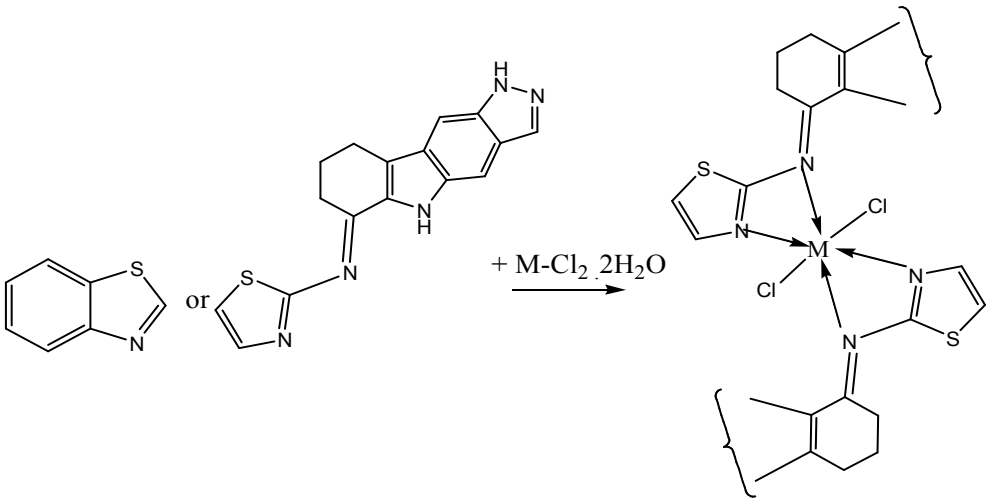
Microwave-assisted synthesis and characterization of the tin and cadmium complexes are reported. Octahedral complexes was synthesized by the reaction of (E)-N-(8,9-dihydropyrazolo[4,3-b]carbazol-6(1H,5H,7H)-ylidene)thiazole. The complexes so formed were characterized by various physicochemical studies. Ligands acts as bidentate towards metal ion via nitrogen donor sites. Elemental analysis and NMR spectral data of the ligands with their complexes agree with their proposed structures. The anti-microbial activities of the ligands and their corresponding tin(II) complexes have been screened against various strains of bacteria and fungi.



Heterocyclic Letters 2: iss.-4, (2012), 429-436

Synthesis And Antitubercular Activity Of Some Thiazolidinone Derivatives Incorporating With Phenothiazine Moiety

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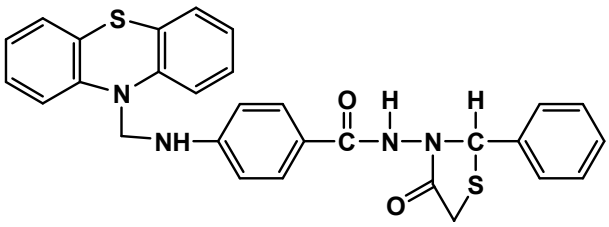
A new class of Phenothiazine derivatives have been synthesized and evaluate their biological activity as an antitubercular agents. In view of the all the results we concluded that some of these are having promising activity comparing with standard drugs.



Heterocyclic Letters 2: iss.-4, (2012), 437-453

Comparison Of Usual And In Siute Routes For Soybean Oil Epoxidation

Safieh Heidarzadeh Rizi [1], Abolfazl Semnani*[1], Ahmad Reza Momeni[1], and Hamid Shakoori Langeroodi[2]

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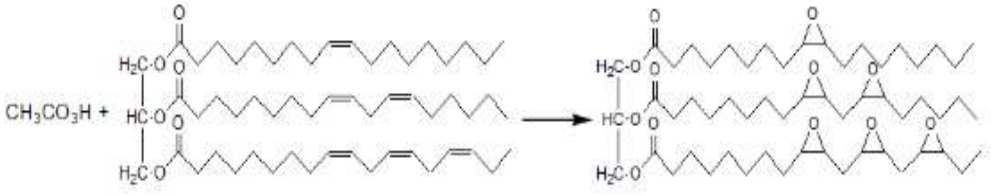
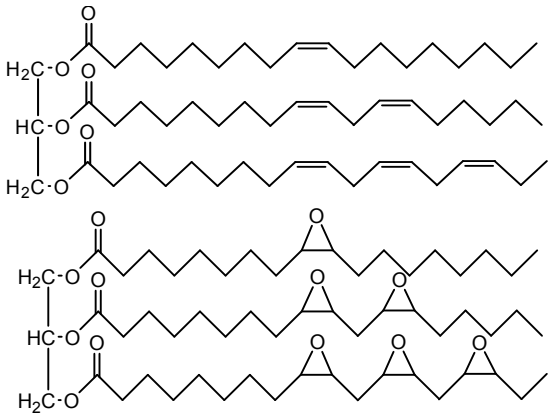
2. Barzin Sepand Sepahan Company, Dehagh Industrial City, Isfahan, Iran.

The epoxidation reaction of soybean oil has been followed in two different conditions. Initial preparation of peracid followed by its addition to the oil, and in situe production of peracid are the two routes. Based on the obtained results, the advantages of in situe method relative to normal route have been proved

a) $CH_3COOH + H_2O_2 \longrightarrow CH_3COOOH + H_2O$



b) $CH_3COOH + H_2O_2 +$



Heterocyclic Letters 2: iss.-4, (2012), 455-459

Yttrium Triflate Catalyzed Synthesis Of 1,4-Dihydropyridines Under Solvent Free Conditions

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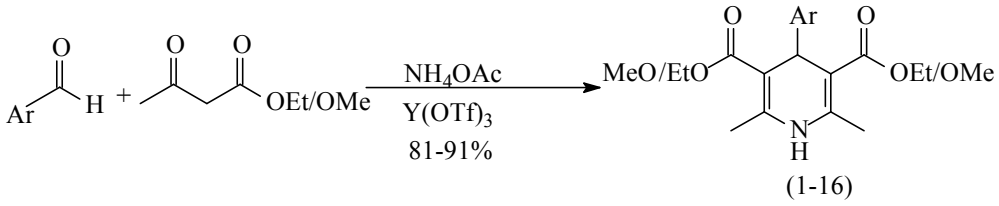

(1-16)

Heterocyclic Letters 2: iss.-4, (2012), 461-466

Synthesis And Antibacterial Screening Of Some Pyrazole And Chromone Derivatives

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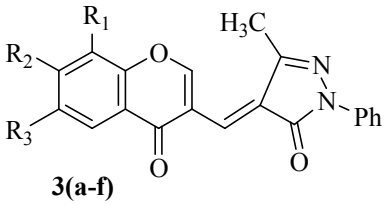
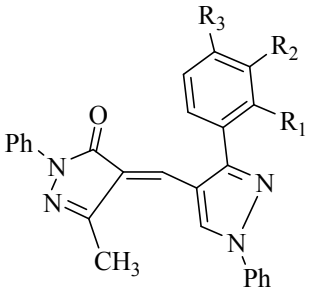
*Corresponding author. E-mail:ssgholap2002@gmail.com Telephone No.+912422273426; Fax.+9124273426

A series of pyrazole and chromone analogues were synthesized using silica perchloric acid($HClO_4$-SiO_2) catalyzed condensation of 4-oxo-4H-chromene-3-carbaldehyde (**1**) or 1-phenyl-3-aryl-1H-pyrazole-4-carbaldehyde(**4**) with 3-methyl-1-phenyl-1H-pyrazol-5-(4H)-one (**2**) The synthesized compounds were screened for their antibacterial activity against *E. coli*, *S. albus* and *S. aureus*.



3(a-f)

3a: R_1= R_2 = H; R_3= Cl
3b: R_1=R_3 = H; R_2 = H
3c: R_1= R_3 = Me; R_2= H
3d: R_1= H; R_2 = Me; R_3 = Cl
3e: R_1= R_2 = H; R_3 = Me
3f: R_1= Cl; R_2=R_3 = H



5(a-f)

5a: R_1= R_2 = H; R_3= Cl
5b: R_1=R_3 = H; R_2 = Me
5c: R_1= R_3 = Me; R_2= H
5d: R_1= H; R_2 = Me; R_3 = Cl
5e: R_1= R_2 = R_3 = H
5f: R_1= R_3 =Cl; R_2== H

Heterocyclic Letters 2: iss.-4, (2012), 467-478

Process for preparation of 5-(2-ethoxy-5-((4-methylpiperazin-1-yl) sulfonyl) phenyl)-3-isobutyl-1-methyl-1h-pyrazolo [4, 3-d] pyrimidin-7(6h)-one (sildenafil citrate impurity).

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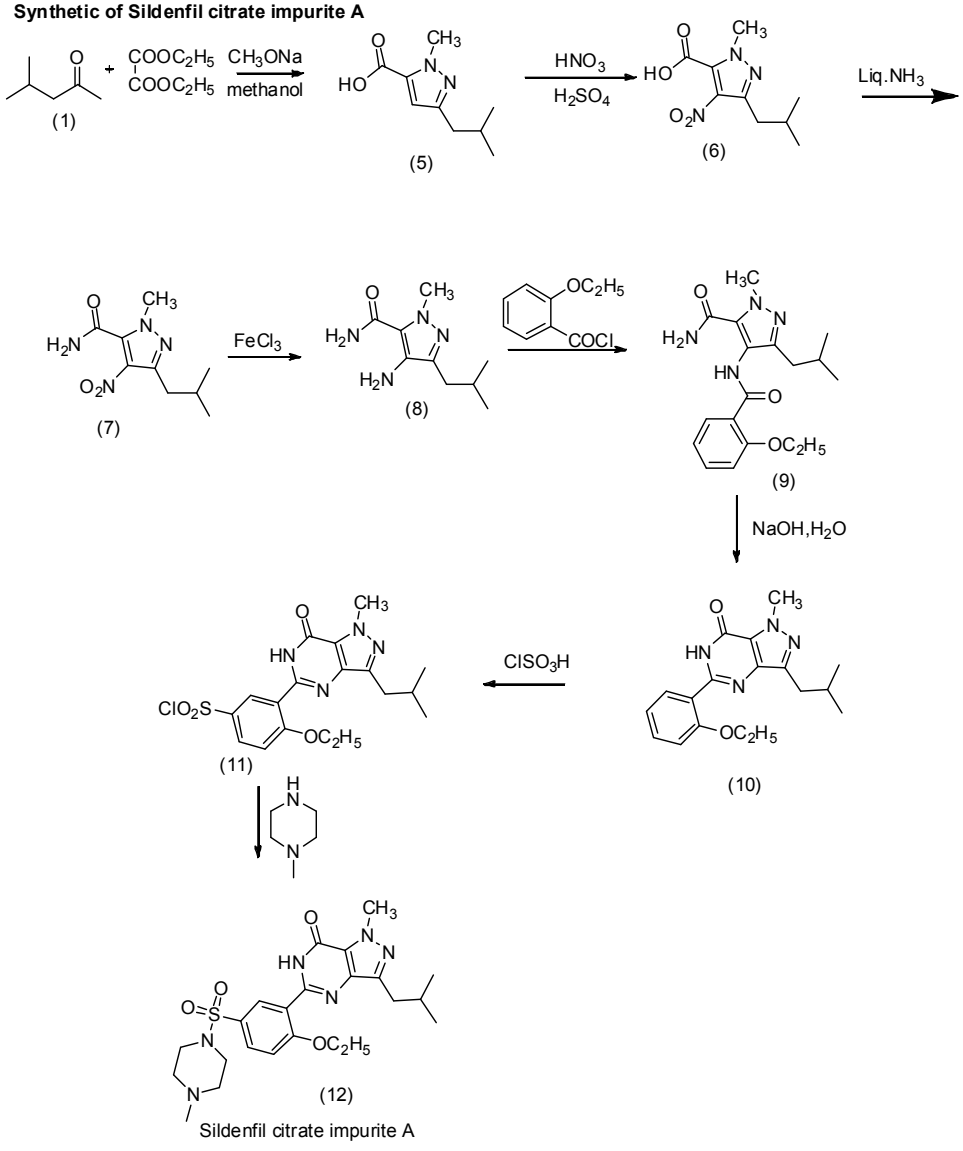
The synthesis of piperazin derivative 5-(2-ethoxy-5-((4-methylpiperazin-1-yl) sulfonyl) phenyl)-3-isobutyl-1-methyl-1H-pyrazolo [4, 3-d] pyrimidin-7(6H)-one (Sildenafil citrate impurity) was successfully prepared and the synthesized compound have been characterized. An improved cost-effective and impurity-free process for Sildenafil citrate (1) suitable for large-scale production is described here by addressing various process development issues.

Synthetic of Sildenfil citrate impurite A



Heterocyclic Letters 2: iss.-4, (2012), 479-484

Synthesis And Evaluation Of 2-Benzothiazole Formamidoximes As Novel Class Of Cytotoxic Agents

Lena Golomba, Elina Jaschenko, Anita Gulbe, Irina Shestakova, Edgars Abele

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Synthesis of 2-pyridine, 2-thiazole and 2-benzothiazole substituted formamidoximes from corresponding amines in the system DMF-DMA / $NH_2OH \cdot HCl$ / i-PrOH was described. The cytotoxicity of studied compounds towards HT-1080 (human fibrosarcoma), MG-22A (mouse hepatoma) and 3T3 (mouse embryonic fibroblasts) cancer cell lines was presented. 2-Benzothiazole formamidoxime exhibit high activity against HT-1080 and MG-22A cancer cell lines.

REVIEWS

Heterocyclic Letters 2: iss.-4, (2012), 485-514

1,3-Dipolar Cycloadditions Approach To Bioactive Spiroheterocyclic Compounds

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Spiro compounds represent an important class of naturally occurring substances characterized by highly pronounced biological properties. This review describes 1) general methods for generation and preparation of most important 1,3-dipoles such as nitrones, nitrile oxides and azomethine ylides; and 2) the most recent examples of synthetic applications of 1,3-dipolar cycloaddition reactions to bioactive spiroheterocyclic compounds.

Heterocyclic Letters 2: iss.-4, (2012), 515-540

Synthesis, Reactions And Biological Activity Of Derivatives Of Oximes Of Six-Membered Oxygen Heterocycles

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Literature data on the synthesis and structure of oximes of six-membered oxygen heterocycles with one heteroatom were reviewed. Synthesis of novel heterocycles from oximes of six-membered oxygen heterocycles was described. Biological activity of these oximes was also reviewed.

Heterocyclic Letters 2: iss.-4, (2012), 541-549

Therapeutic Value Of 1, 2 – Benzisoxazoles

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[1]University of Rajasthan, Jaipur
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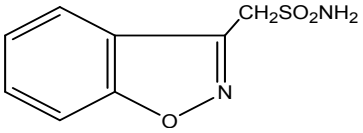
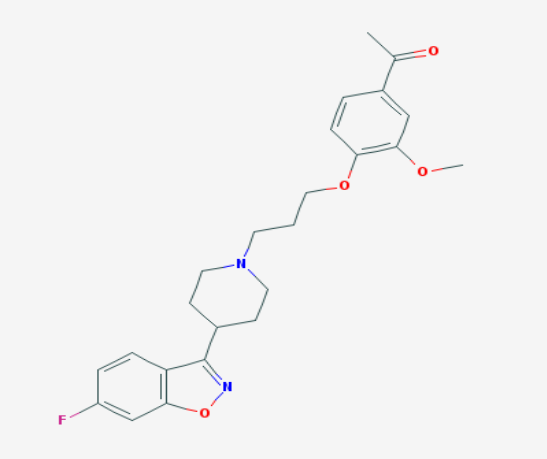
Heterocyclic compounds are well known for their medicinal and biochemical activities. Benzisoxazole derivatives have recently attracted attention as an important class of heterocyclic compounds in the field of drugs and pharmaceutical properties. Benzisoxazole is composed of benzene-fused isoxazole ring structure. It is used primarily in industry and research.
Being a heterocyclic compound benzisoxazole finds use in research as a starting material for the synthesis of larger, usually bioactive structures. It is found within the chemical structures of pharmaceutical drugs such as the antipsychotic risperidone and the anticonvulsant Zonisamide.

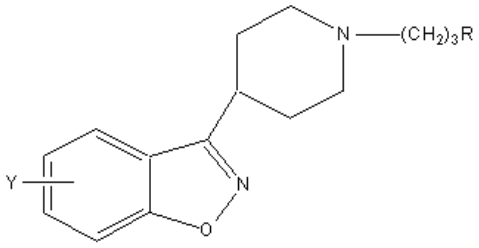


Zonisamide

In view of the diverse type of biological activity and medicinal importance of benzisoxazoles we have discussed some important activities of 1,2-benzisoxazoles such as antimicrobial, anticancer, anticonvulsant, diuretic, antipsychotic etc.



Iloperidone



3-(1-substituted-4-piperidinyl)
-1,2-benzisoxazoles