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Graphical Abstract

Heterocyclic Letters 7: iss.-3 (2017), 565-572

Synthesis of carbamatoalkylnaphtholsusingFe_3O_4@ZrO_2-SO_3H as highly efficient and magnetically recyclable Nano-catalyst

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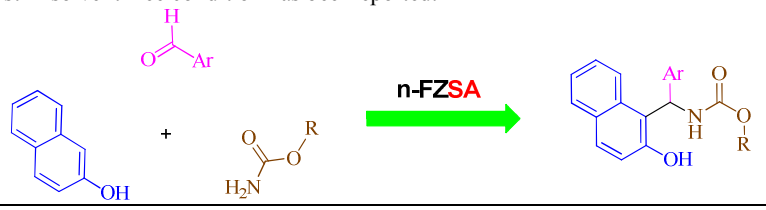
In this research work, fast and green synthesis ofcarbamatoalkylnaphtholswhich prepared by a one-pot three component condensations of *β*-naphthol, aromatic aldehydes, and methyl/ethyl/benzyl carbamatesin the presence of$Nano-Fe_3O_4$@ZrO_2-SO_3H (n-FZSA) as catalyst in solvent-free condition has beenreported.



Heterocyclic Letters 7: iss.-3 (2017), 573-581

A computational study on regioselectivity of 1,3-dipolar cycloaddition reactions of 3-azidopropane-1,2-diol with diacetylene derivatives

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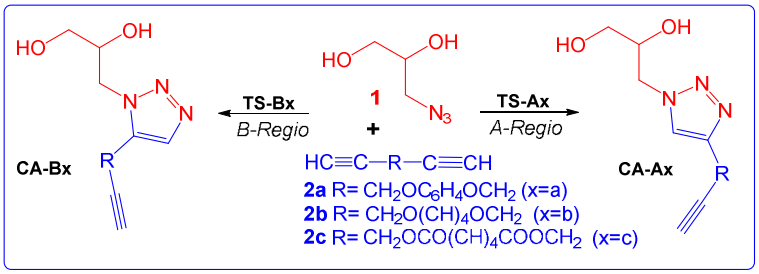
The reactivity and regioselectivity of 1,3-dipolar cycloaddition reactions of 3-azidopropane-1,2-diol (1) with diacetylene derivatives (2a, 2b and 2c) have been investigated by using density functional theory (DFT) -based on reactivity indices and activation energy calculations at B3LYP/6-31G(d) level of theory in the gas phase. The potential energy surface analyses for both reactions are in agreement with the experimental observations. Moreover, our calculations on the geometries, bond orders (BOs) and charge transfers (CTs) at the transition state (TS) structures shows which these 1,3-DC reactions occur via an synchronous concerted mechanism, and unfavorable TSs are more asynchronous than the favorable ones.



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Heterocyclic Letters 7: iss.-3 (2017), 583-588

A Simple and Convenient Approach for the Synthesis of Spiropyrazole Derivatives *via* 1,3-Dipolar Cycloaddition Reaction

Abdolali Alizadeh*, and Leila Moafi

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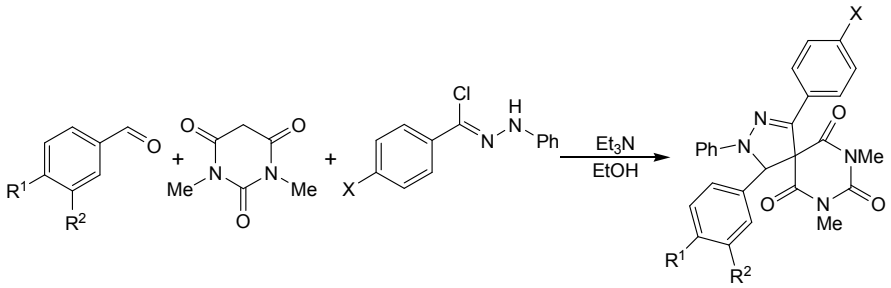
One pot synthesis of 1,2,7,9-tetraazaspiro[4.5]dec-2-ene-6,8,10-trione derivatives is developed through the reaction of aromatic aldehydes, *N,N*-dimethyl babituric acid and hydrazonoyl chlorides in the presence of Et_3N in EtOH at room temprature. The advantages of this method are one pot and mild reaction condition, high yield, easy purification of products and relatively short reaction time.



Heterocyclic Letters 7: iss.-3 (2017), 589-597

Green And Highly Efficient One-Pot Synthesis Of 1, 8-Dioxo-Octahydroxanthene Derivatives Using Triethylamine As An Efficient Catalyst.

Abdelkader Naouri [1,2] ; Amar Djemoui [1,3] ; Mokhtar Boualem Lahrech [4] ; Salah-Eddin Rahmani [3] and Mohamad Reda Ouahrani [1].

[1]*Department of Chemistry, Faculty of Exact Sciences, Echahid Hamma Lakhdar University of El Oued, Algeria*
[2]*Centre of Scientific and Technical Analyses Physico-Chemical BP 384, Seat former Pasna Industrial Zone Bou-Ismail, Tipaza, Algeria*
[3]*Department of Chemistry, Faculty of Exact Sciences and informatics, ZIANE Achour University. Djelfa, Algeria*
[4]*Laboratory of Organic Chemistry and Natural Substance ZIANE Achour University. Djelfa, Algeria*
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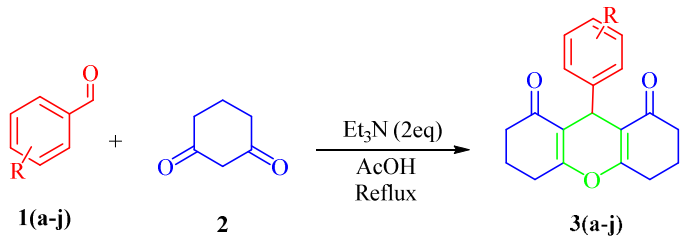
A facile and highly efficient protocol for the synthesis of 1,8-dioxo-octahydroxanthenes has been achieved utilizing Et_3N as catalyst under mild conditions.



One-pot reaction for the preparation of 1,8-dioxo-octahydroxanthenes derivatives

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Heterocyclic Letters 7: iss.-3 (2017), 599-603

Synthesis of some new molecular tweezer molecules bearing dibenzobarallene pincers using a Brønsted-acid ionic liquid as catalyst

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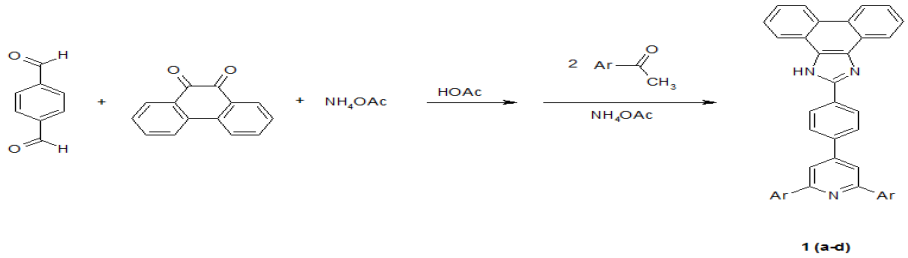
[a]*Department of Chemistry, Mashhad Branch, Islamic Azad University, Mashhad, Iran.*

In the present study we have synthesized new molecular tweezer molecules containing 1*H*-phenanthro[9, 10-d]imidazole and pyridine rings. These derivatives were synthesized by the reaction of phenanthrene-9,10-dione, terephthalaldehyde and ammonium acetate in acetic acid and then mixing by acetyl aromatic compounds. The newly synthesized compounds were characterized on the basis of IR, ^{13}C NMR, ^{1}H NMR spectra, and elemental analyses. These new compounds were subsequently studied for their fluorescence properties.



1 (a-d)

Heterocyclic Letters 7: iss.-3 (2017), 605-611

Carbon-based solid acid as a highly efficient recyclable catalyst for the synthesis of biscoumarins in water

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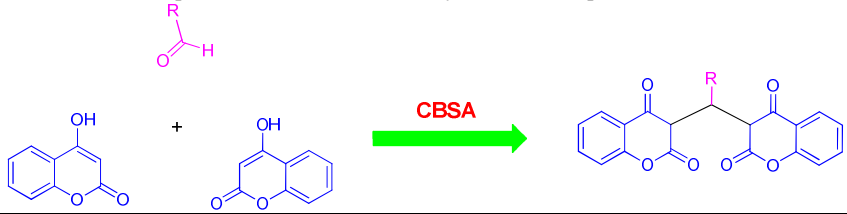
In this work, synthesis of biscoumarin derivatives by one-pot reaction of 4-hydroxycoumarin, and aromatic aldehydes in the presence of carbon-based solid acid, represented as CBSA, as catalyst has been reported.



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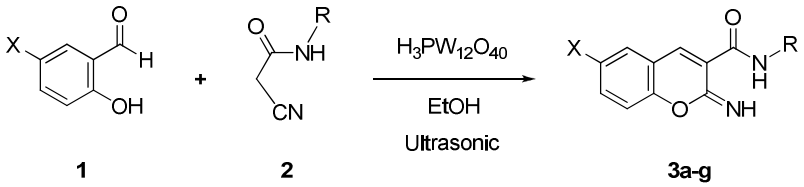
Ultrasonic assisted synthesis of 2-iminochromenes catalyzed by $h_3pw_{12}o_{40}$ as an efficient and reusable catalyst

Mehri Fattahi, Abolghasem Davoodnia*, Mehdi Pordel, and Niloofar Tavakoli-hoseini

Department of chemistry, mashhad branch, islamic azad university, mashhad 9175687119, iran

Efficient and convenient synthesis of *n*-alkyl-2-imino-2*h*-chromene-3-carboxamides by reaction of *n*-alkyl-2-cyanoacetamides with salicylaldehydes using 12-tungstophosphoric acid ($h_3pw_{12}o_{40}$) as a green and reusable catalyst under ultrasonic irradiation is described. The catalyst is inexpensive and readily available and could be efficiently used at least five times without substantial reduction in its catalytic activity. High activity of the catalyst, excellent yields, short reaction times, and simple procedure with an easy work-up are other advantages of the present methodology.



1 **2** **3a-g**

Heterocyclic Letters 7: iss.-3 (2017), 621-627

Visible light as a promoter for the efficient and green synthesis of Tetrahydrobenzoxanthene derivatives

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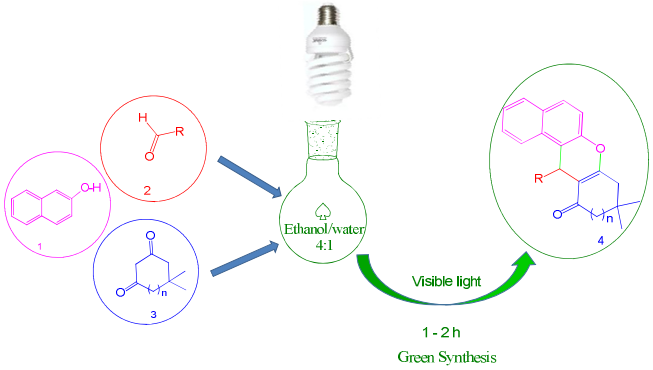
A visible light promoted clean and efficient, multicomponent approach for the synthesis tetrahydrobenzoxanthene is reported. The given process eliminates the use of toxic catalysts, bases and solvents, which harmfully affect the environment and human beings. Other advantages of the given methodology consist of easy-going reaction conditions, operational simplicity broad substrate scope, , short reaction times, easy workup, high yields, the use of green solvent make the protocol very attractive.



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Heterocyclic Letters 7: iss.-3 (2017), 629-634

An Efficient Synthesis of Novel Benzothiazolylpyrazole Substituted Imines: Versatile Synthons for Heterocycles

Jitender Bhalla,[1] Shamsher S. Bari,[1] Bimal K. Banik[2] and Aman Bhalla[1,*]

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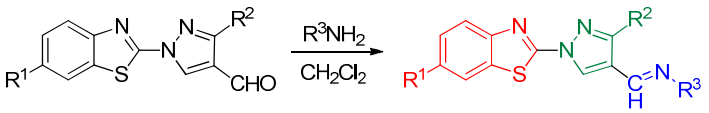
An efficient synthesis of novel benzothiazolylpyrazole substituted imines **5a-e** is described. The substrate i.e. benzothiazolylpyrazole carbaldehydes **4a-c** were prepared via $POCl_3$-DMF mediated cyclization-formylation of benzothiazolyl hydrazones **3a-b**. The target product i.e. benzothiazolylpyrazole substituted imines **5a-e** were synthesized in excellent yields by the reaction between benzothiazolylpyrazole carbaldehydes **4a-c** and various aromatic/aliphatic amines. All the novel compounds were characterized using various spectroscopic techniques such as FT-IR, ^{1}H NMR, ^{13}C NMR and elemental analysis (CHN).



R^1 = OMe, Cl
R^2 = Ph, 4-MeC_6H_4
R^3 = Bz, ^{i}Bu, 4-OMeC_6H_4

Heterocyclic Letters 7: iss.-3 (2017), 635-641

Convenient Synthesis and In Vitro Anti-inflammatory Activity of New 2-(Methylsulphonyl amino)-4- Aryloxy Methyl thiazoles

Rahul A. Waghmare,[1*]RamraoA.Mane,[2] VrushaliPatil[3] andAshish Asrondkar[3]

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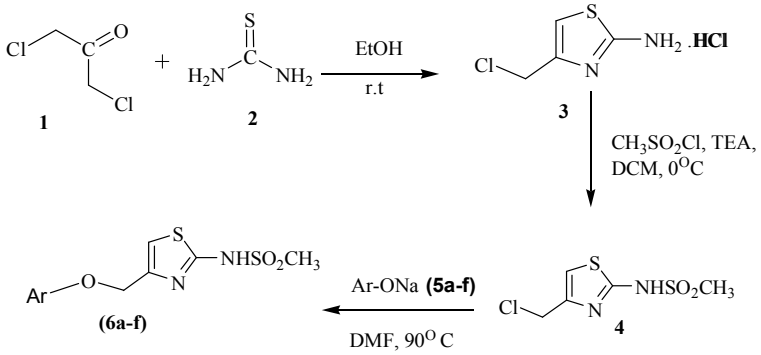
[2]Department of Chemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad-431004.
[3]Haffkine Institute for Training, Research and Testing, Parel, Mumbai, Maharashtra 400 012, India.
**Email: rahulwaghmare100@gmail.com*

The synthesis of new 2-(methylsulphonylamino)-4-aryloxy methyl thiazole by modified Hantzsch synthesis followed by mesylation and etherification has been reported. The synthesized intermediate and final compounds have been characterized by elemental and spectral analyses. An in vitro anti-inflammatory activity evaluation of synthesized compounds is recorded.



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One pot multicomponent reactions used in the synthesis of new organic compounds

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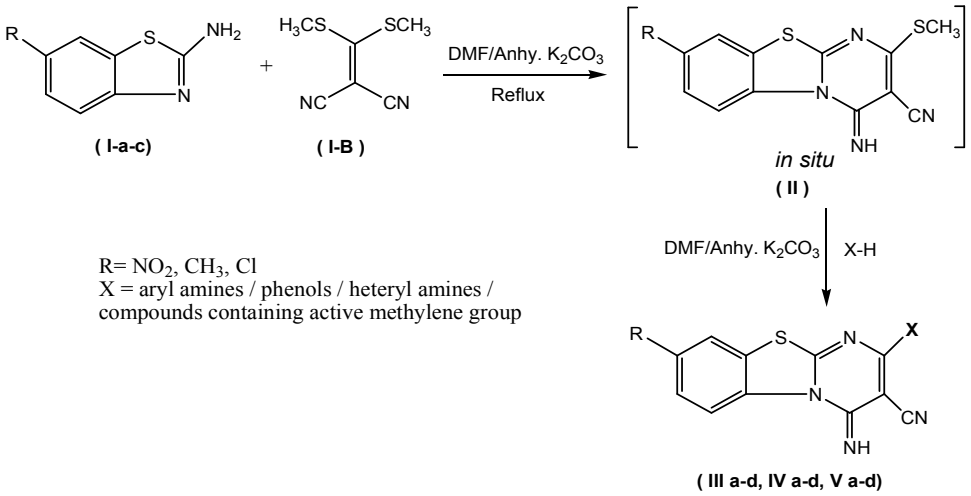
Multicomponent reactions have emerged as useful methods because the combination of two or more components to generate new products in a single step is extremely economical. A green, simple, efficient, and cost-effective procedure has been carried out by this method. A mixture of 2-amino-6-substituted benzothiazole and bis methylthio methylene malononitrile on heating independently with aryl amines / phenols / heteryl amines/ compounds containing active methylene group would result in the formation of corresponding 2-substituted derivatives. The synthesized compounds were characterized by elemental analysis and spectral data.



Heterocyclic Letters 7: iss.-3 (2017), 649-651

Montmorillonite-Impregnated Samarium-Mediated Reduction of Aromatic Nitro Compounds to Aromatic Amines

Indrani Banik, 1 Mans K. Basu1, Susanta Samajdar1 and Bimal K. Banik[1], [2*]

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1515 Holcombe Blvd, TX 77030, USA; 2 Current Address: Community Health Systems of South Texas; 3135 S Sugar Road, Edinburg, TX 78539, USA
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Starting Compound	Product	Yield (%)
4-Methoxynitrobenzene	4-Methoxyaniline	88

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Heterocyclic Letters 7: iss.-3 (2017), 653-666

Synthesis, characterization and SAR of some chalcones, phenyl pyrazolines and isoxazoles containing 1,3,5-triazine scaffold as a new class of antimicrobial and antitubercular agents

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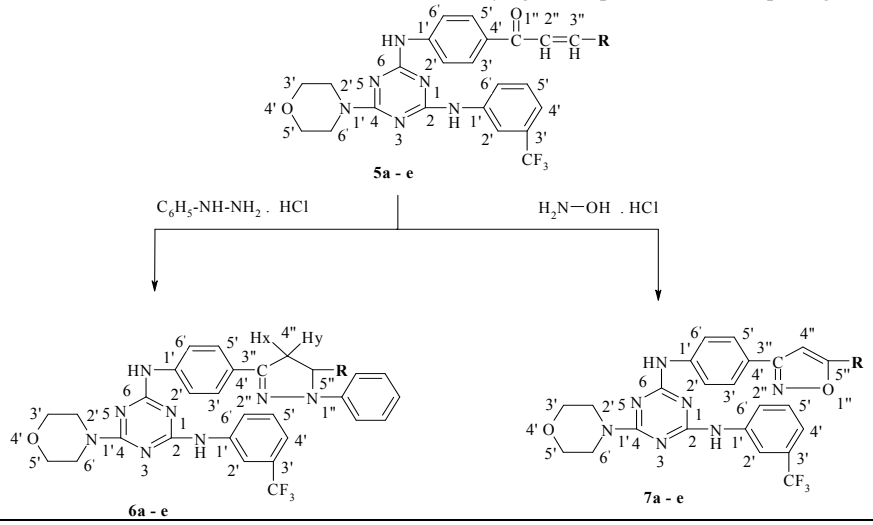
Veer Narmad South Gujarat University, Surat, Gujarat, India
**E-mail: dranjani_solankee@yahoo.com*

In an attempt to control multidrug resistant bacteria, a library of some new heterocyclic derivatives phenyl pyrazoline and isoxazole ring systems bearing 1,3,5-triazine core were designed and synthesised from chalcones. The structures of all the newly synthesised compounds were assigned on the basis of FTIR, ^{1}H NMR, ^{13}C NMR and mass spectral data. The title compounds were screened for their *in vitro* antimicrobial and antitubercular activity against a panel of selected pathogenic strains.

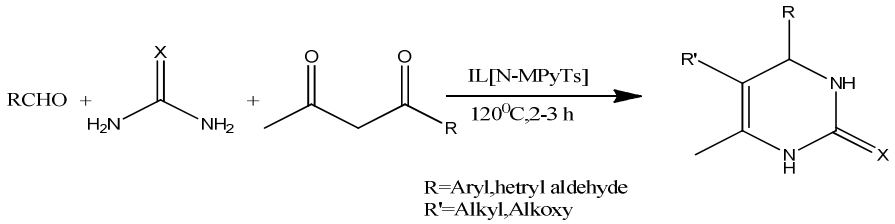


Heterocyclic Letters 7: iss.-3 (2017), 667-670

Ionic liquid mediated one pot synthesis of 3, 4- dihydropyrimidinones (dhpms), using modified biginelli reaction

Dinesh L.Lingampalle, Rahul A.Waghmare, Vasant B. Jagrut, Ram A. Mane.

"Department of Chemistry, Vivekanand Arts, Sardar Dalipsingh Commerce and Science college, Samarth nagar Aurangabad, Maharashtra, India."
"Department of Chemistry, Millind College of Science and Arts, Nagsenvana, Aurangabad, Maharashtra, India."
Email:-dineshlingampalle@gmail.com



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Heterocyclic Letters 7: iss.-3 (2017), 671-682

Design, synthesis and antimicrobial activity of benzyl hydroxamic acid analogues of coumarin

Challa Krishna [a *], M Vijaya Bhargavi [b], G L David Krupadanam

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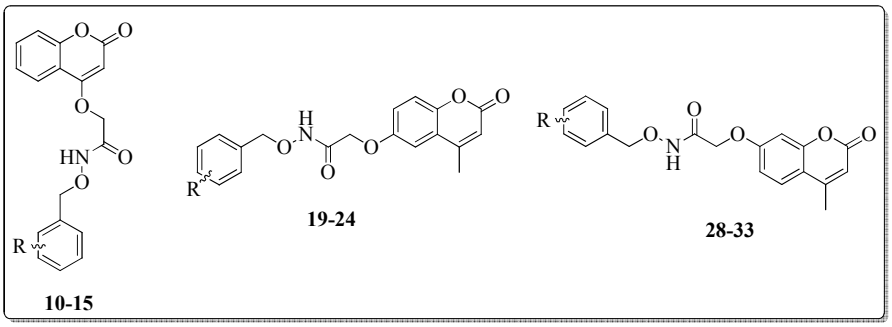
[b]*Department of Pharmacy, Faculty of Technology, Osmania University, Hyderabad-500007*
E-mail: challakrishna76@gmail.com

We reported here the convenient synthesis of N-(benzyloxy)-2-(coumarin-4-yloxy)-acetamides (**10-15**), N-(benzyloxy)-2-(4-methyl-coumarin-6-yloxy)-acetamides (**19-24**) and N-(benzyloxy)-2-(4-methyl-coumarin-7-yloxy)-acetamides (**28-33**) in high yields by amide coupling of acids and oxyamines. The structures of the synthesized compounds are established based on IR, NMR, Mass spectrometric methods and elemental analysis. The antibacterial and antifungal activities of synthesized compounds were evaluated.

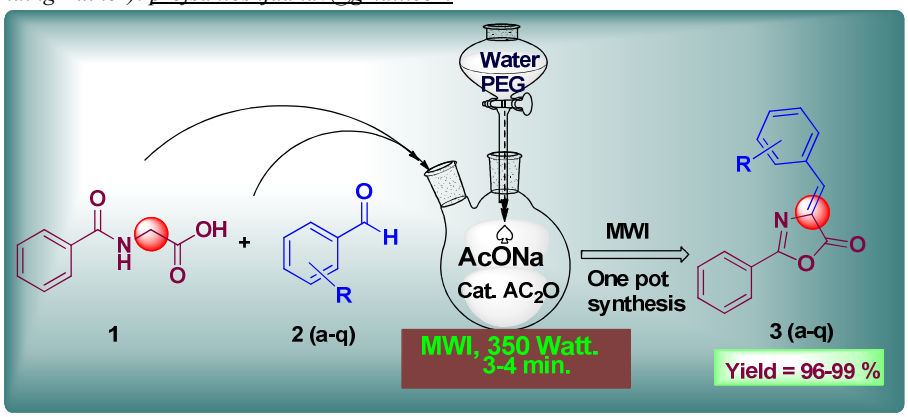


Heterocyclic Letters 7: iss.-3 (2017), 683-691

Rapid one-pot microwave assisted synthesis of 4-arylidene-2-phenyl-5(4h)-oxazolones or azlactones

[1]Santosh A. Jadhav, [2]Rajendra S. Dhamnaskar, [3]Sarkate Aniket P. and [4]Rajendra K. Pardeshi

[1]*Department of Chemistry, Vivekanand Arts, S. D. Commerce and Science College, Aurangabad (MS) 431001 India*
[2]*Joint Director, Higher Education, Aurangabad (MS) 431001 India*
[3]*Department of Chemical Technology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad (MS), 431001 India.*
[4]*Department of Chemistry, Sant Ramdas College Ghansawangi, Jalna (MS) 431209 India*
E-mail (Corresponding Author): profsantoshjadhav@gmail.com



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Heterocyclic Letters 7: iss.-3 (2017), 693-696

Ecofriendly Synthesis of Biginelli Products

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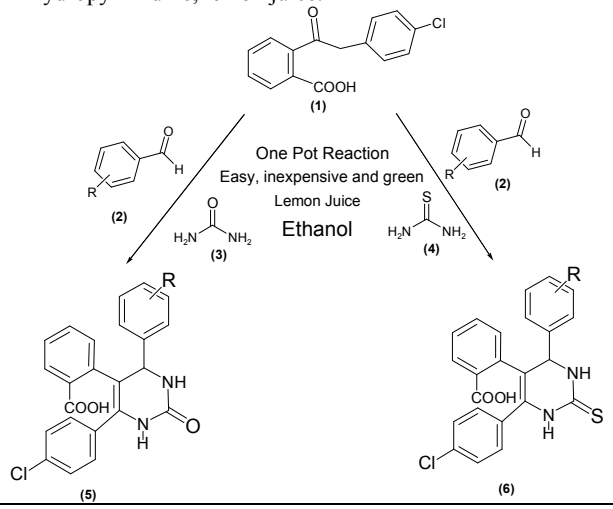
A simple and efficient method has been devised for the synthesis of 2-[6-(4-chlorophenyl)-2-oxo-4-(substitutedphenyl)-1,3,4-trihydropyrimidine-5-yl]benzoic acid **(5)** and 2-[6-(4-chlorophenyl)-2-thioxo-4-(substitutedphenyl)-1,3,4-trihydropyrimidine-5-yl]benzoic acid **(6)**, by a one-pot three component cyclocondensation reaction of compound containing active methylene group**,** aromatic aldehydes and urea/thiourea using catalytic amount of fresh lemon juice in refluxing ethanol. The structures of the products were confirmed by IR, ^{1}H and ^{13}C NMR.

Keywords: Aromatic aldehydes, Dihydropyrimidine, lemon juice.



Heterocyclic Letters 7: iss.-3 (2017), 697-699

Ultrasound-Induced Montmorillonite-Impregnated Bismuth Nitrate-Mediated Aromatic Nitration

Indrani Banik,[1] Mans K. Basu[1], Susanta Samajdar[1] and Bimal K. Banik[1, 2*]

[1]Department of Molecular Pathology, University of Texas M. D. Anderson Cancer Center,
1515 Holcombe Blvd, TX 77030, USA; [2] Current Address: Community Health Systems of South Texas; 3135 S Sugar Road, Edinburg, TX 78539, USA
bimalbanik10@gmail.com; bimal.banik@chsst.org

Starting Compound	Product	Yield (%)
Anisole	4-Methoxy-1-nitrobenzene	90

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Heterocyclic Letters 7: iss.-3 (2017), 701-704

Antimicrobial activity of cobalt(ii) complex with 2-aminobenzoxazole

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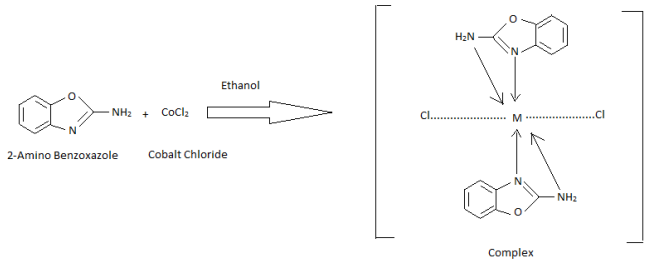
Email id-raj.indu.indu@gmail.com

In view of the fact that a large number of derivatives of benzoxazole have been found to exhibit a wide variety of antimicrobial activities heterocyclic compounds play an important role in medicinal chemistry and exhibit wide range of biological activities. Cobalt(II) chloride reacts with 2-aminobenzoxazole to give complex of the formula $[CoL_2Cl_2]$, where L=2-aminobenzoxazole. The antimicrobial activity of the complex against E.coli ATCC25922, Salmonella abony ATCC6017, Pseudomonas aeruginosa ATCC27853, Staphylococcous aureus ATCC25923, Bacillus subtilis ATCC11774. Benzoxazole derivative have been reported antibacterial activity. The minimum inhibitory concentration (MIC) was determined for the complex . It was found that tested compounds were more active against gram-positive slightly active to gram-negative bacteria.



Heterocyclic Letters 7: iss.-3 (2017), 705-720

Glycerol as an efficient recyclable green promoting media for single-pot catalyst free synthesis of densely functionalized 4H-chromenes

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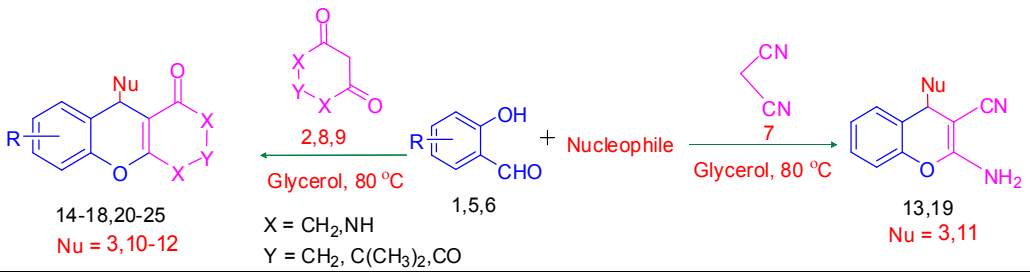
[b]*Department of Chemistry, LRPG College, Sahibabad-, Uttar Pradesh, India*

A clean and efficient, one pot, multicomponent strategy for the synthesis of 4H-chromenes in glycerol, a biodegradable and green promoting media is reported. The present procedure eliminates the use of toxic transition metal catalysts, bases and volatile organic solvents, which adversely affect the environment and living beings. Other advantages of the present methodology include mild reaction conditions, broad substrate scope, operational simplicity, short reaction times, easy workup, high yields, 100 % atom economy, cost effectivenessand recyclability of the solvent.



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Heterocyclic Letters 7: iss.-3 (2017), 721-731

Biological assess of metal heterochelates based on enrofloxacin and dicumarol derivative

Nilam C. Boricha[1], Shailesh V. Patel*[1], Ketan S. Patel[2]

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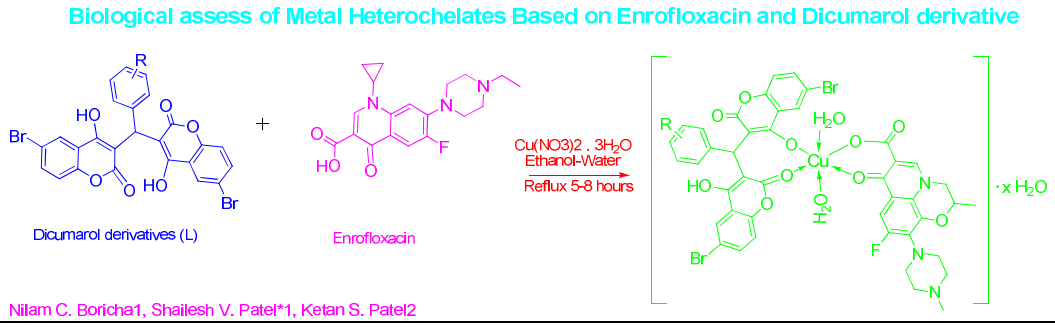
[2] Chemistry Department, Shree P. M. Patel Institute of PG Studies and Research in Science, Sardar Patel University, Anand-388 001, Gujarat- India



Heterocyclic Letters 7: iss.-3 (2017), 733-744

Synthetic Strategy of New 3-chloro benzo[b]thiophene-2-carbonyl linked pyrimido[4,5-d]pyrimidine Schiff, Mannich bases and their Biological Evaluation

Krishna Kunwar Rathore*, Prakash Prajapat, Ram Chandra Senwar and Anita Mehta

Synthetic Organic Chemistry Laboratory, Department of Chemistry,
Mohanlal Sukhadia University, Udaipur-313001, Rajasthan, India
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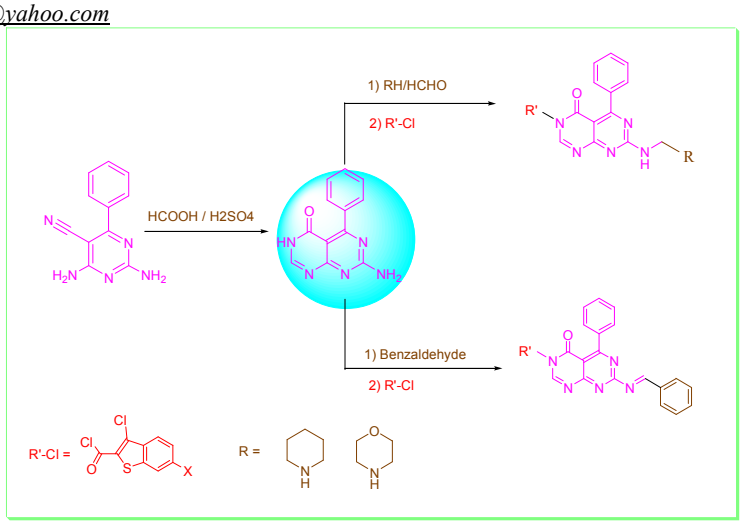

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An efficient iodobenzene diacetate (ibd) catalyzed tetrazolo[1,5-*a*] quinoline incorporated 1,3,4-oxadiazole nucleus: synthesis, characterization and biological evaluation

Nirav H. Sapariya*, Beena K. Vaghasiya, Rahul P. Thummar, Ronak D. Kamani, Kirit H. Patel and Dipak K. Raval

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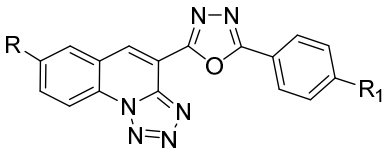
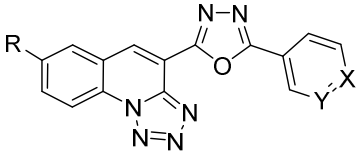
**Corresponding author. Tel.: +91-02692-226856 - Ext. - 211; Fax: +91-02692 236475.*
E-mail: nir.sapariya@gmail.com, dipanalka@yahoo.com

Tetrazolo [1,5-*a*] quinoline incorporated 1,3,4-oxadiazole nucleus based derivatives have been synthesized in good to excellent yield (73-93%) by the cyclisation of corresponding Schiff base derivatives using iodobenzene diacetate (IBD) under room temperature. The synthesized compounds shown to have diversified activities, which vary upon substitution of the different electron withdrawing and donating groups.



6a-l



6m-r

Heterocyclic Letters 7: iss.-3 (2017), 763-767

Spectroscopic Studies of homobinuclear and bivalent Transition metal complexes

Nidhi Gupta

Department of Basic and Applied Sciences
Punjabi University, Patiala
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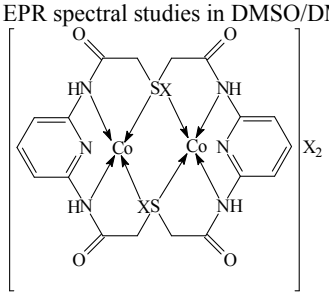
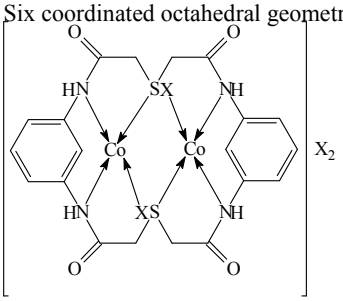
A new series of symmetric tetradentate cyclic ligand and their transition metal complexes have been synthesized and characterized. Macrocyclic ligand has been synthesized by the condensation reaction of the thiodiglycolic acid and 2,6 diammino pyridine or 2,6 diammino phenylene in the molar ratio of 1:1. Light yellow colored ligand was precipitated out . The synthesis of the ligand was confirmed by ir, and mass spectral data. The cobalt complexes were prepared by using the ligand and the metal salt in the ratio of 1:2. Colored cobalt complexes were synthesized and characterized by elemental analysis, molar conductance, IR, Electronic and EPR spectral studies in DMSO/DMF solutions. Six coordinated octahedral geometry were proposed for the complexes.





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Heterocyclic Letters 7: iss.-3 (2017), 769-773

Synthesis of new substituted quinoline derivatives

Joshi P. P.* and Shirodkar S.G.

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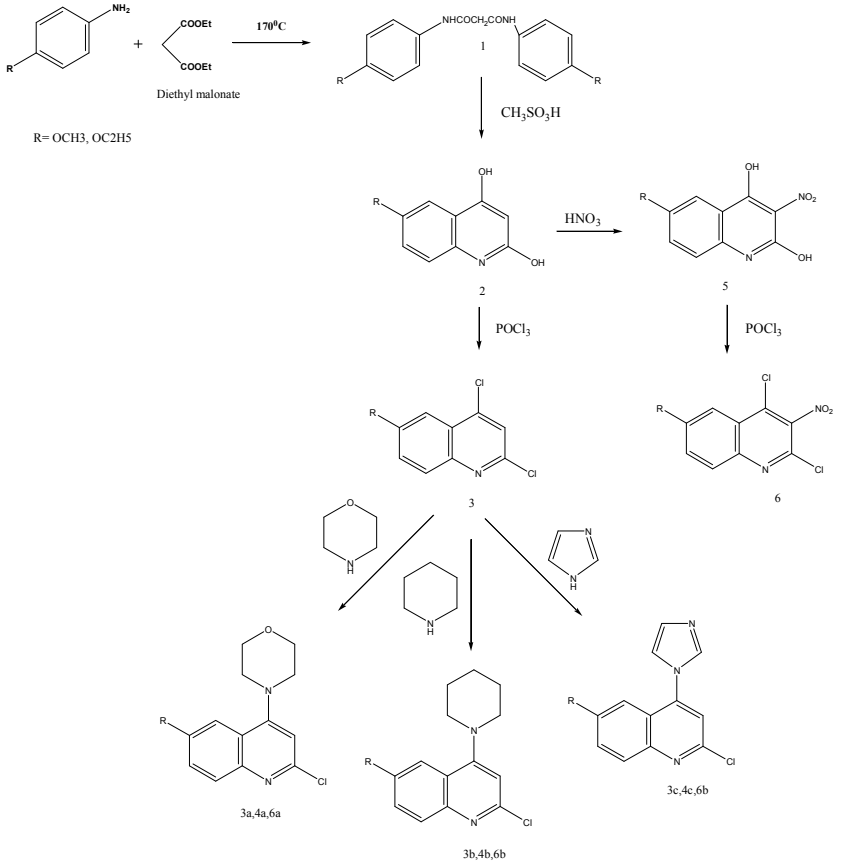
P.G. Department of Chemistry, N.S.B. College, Nanded. 431605
Maharashtra (India).

Substituted aromatic amines on condensation with diethyl malonate yielded N,N'-bis substituted malonamide (1) which on treatment with methane sulfonic acid undergo cyclisation to give substituted 2,4-dihydroxy quinoline (2). Compound (2) on reaction with $POCl_3$ yielded substituted 2,4- dichloro quinoline (3) which on reaction with various cyclic secondary amines afforded a series of new substituted quinoline derivatives . (3a-6c) All the new synthesized compounds were characterized by ^{1}HNMR and FTIR spectroscopy



Scheme

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Synthesis and characterization of Microwave induced pyrano[3,2-*c*]chromene, pyrano[4,3-*b*]pyran and 4*H*-chromene derivatives of substituted 2-(4-substituted) phenyl-*N*-allyl-indole, and their biological screening

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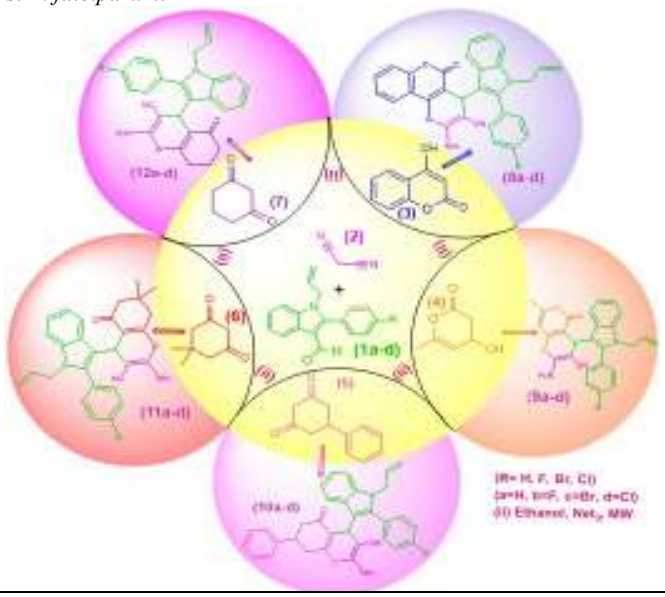
E-mail: patelmanish1069@yahoo.com

A new category of indole based pyrano[3, 2-*c*]chromene, pyrano[4,3-*b*]pyran and 4*H* - chromene derivatives has been designed and synthesized via microwave-induced one-pot three-component cyclocondensation reaction of 2-(4-substituted) phenyl-*N*-allyl-indole-3-carbaldehyde **1a-d** with active methylene malononitrile **2** and different enolizable michael donars **3-7** in the presence of catalytic amount of triethylamine in ethanol. All the newly synthesized compounds have been characterized by elemental analysis and various spectroscopic methods. All the compounds have been screened against a representative panel of pathogenic strains of bacteria and fungi, preliminary *invitro* antituberculosis activity against *M. tuberculosis* H37Rv and also for their antimalarial activity against *P. falciparum*.



Heterocyclic Letters 7: iss.-3 (2017), 791-818

Biological behavior of quinazolin-4(3*h*)-one derivative based platinum(ii) compounds

Miral V. Lunagariya, Khyati P. Thakorand, Mohan N. Patel*

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Vallabh Vidyanagar–388 120, Gujarat, India.
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Square planar platinum(II) complexes with quinazolinone derivative ligands were characterized and studied for *in vitro* antibacterial assay, cellular level cytotoxicity against *S. Pombe* cells, antituberculosis activity, *in vitro* cytotoxicity against brine shrimp lethality bioassay (LC_{50}) and DNA interaction.

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Synthesis, characterization of new 1, 2, 4-triazole derivatives bearing quinoline nucleus and their antimicrobial and antitubercular evaluation

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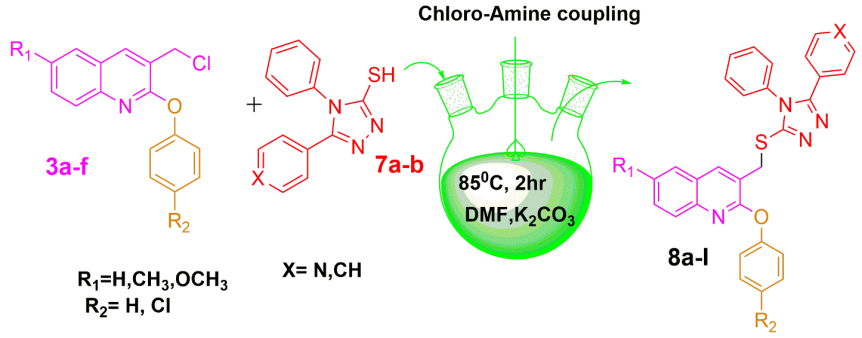
Department of Chemistry, Sardar Patel University, Vallabh Vidyanagar 388120, Gujarat, India
E-mail: patelmanish1069@yahoo.com

A new series of quinoline based 1,2,4-triazole derivatives 8a-l synthesized by chloro-amine coupling of 3a-f and 7a-b using K_2CO_3 as a catalyst. In which substituted 1,2,4-triazole intermediates 7a–b were synthesized from 2-(un)substituted-N-phenylhydrazinecarbothioamide 6a-b using 2N NaOH in reflux condition. The imperative features of this method are easy experimental procedure, high yield, reduce reaction time. The newly synthesized compounds were confirmed by ^{1}H NMR, ^{13}C NMR, FT-IR and Mass spectrometry. The synthesized compounds were evaluated for their antibacterial, antifungal and antitubercular activities.



Heterocyclic Letters 7: iss.-3 (2017), 829-833

One pot synthesis of nitriles from aldehydes and hydroxylamine hydrochloride using calcium chloride in DMF solvent under reflux condition.

Ramesh M. Borde, Rahul A. Waghmare, Satish B. Jadhav, Achyut S. Munde*

Milind College of Science, Aurangabad-431001, Maharashtra, India

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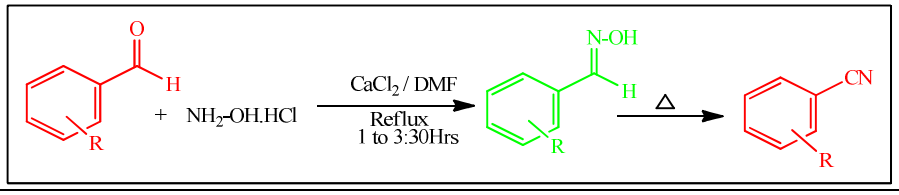
A rapid and facile one pot synthesis of nitrile has been carried out in high yields from the corresponding aldehydes and hydroxylamine hydrochloride in the presence of anhydrous Calcium Chloride and DMF Under reflux condition.

Key words: Nitriles, aldehyde, hydroxylamine hydrochloride, anhydrous calcium chloride.



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Heterocyclic Letters 7: iss.-3 (2017), 835-840

Synthesis of (5Z)-5-substituted-3-[(4-hydroxypyrimidin-2-yl) amino]-2-methyl-3,5-dihydro-4H-imidazol-4-one

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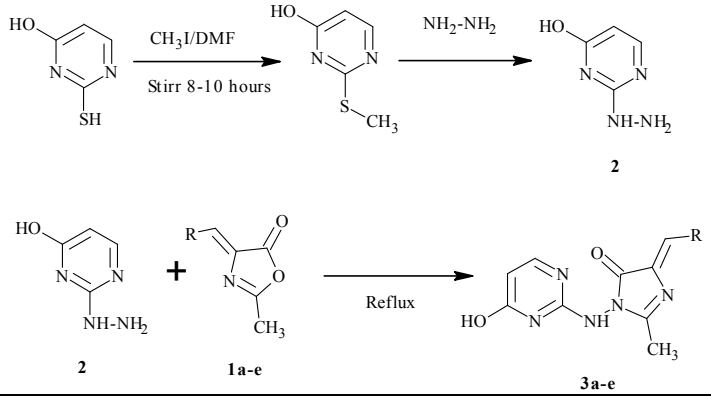
The compounds (5*Z*)-5-substituted-3-[(4-hydroxypyrimidin-2-yl)amino]-2-methyl-3,5-dihydro-4*H*-imidazol-4-one **3a-e** were prepared by refluxing (4Z)-4-substituted-2-methyl-1,3-oxazol-5(4*H*)-one **1a-e** with 2-hydrazinyl-1,4-dihydropyrimidin-4-ol **2** in presence of pyridine. The synthesized compounds were characterized by elemental analysis and spectral studies. Some selected compounds were screened for biological studies.



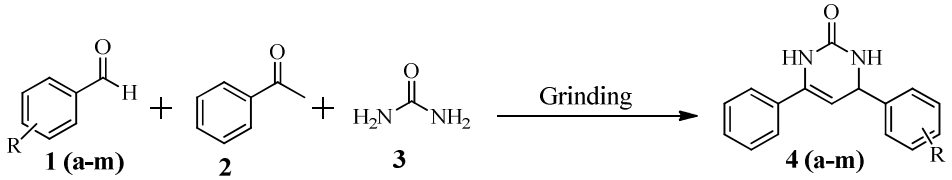
Heterocyclic Letters 7: iss.-3 (2017), 841-844

An efficient synthesis of 5-unsubstituted-3,4-dihydropyrimidin-2(1*h*)-one using grinding method

Deepak S. Kawade, Jaidatt B. Gore and Sayujjata R. Vaidya*,

Department of Chemistry, Vivekanand art's, Saradar Dalipsingh Commerce and science College,
Aurangabad - 431001, Maharashtra, India.
**Corresponding author. Tel.: +91 02402365851*
E-mail address: srvaidya@gmail.com

Herein we reported green method for the synthesis of 5-Unsubstituted-3,4-Dihydropyrimidin-2(1*H*)-One using grinding method. This method having several advantages such as excellent yield, shorter reaction time and economic availability.



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Heterocyclic Letters 7: iss.-3 (2017), 845-851

Synthesis, Characterization, Study of Thermal, X-Ray and Antimicrobial Novel Transition Metal Complexes of Asymmetrical Ligand

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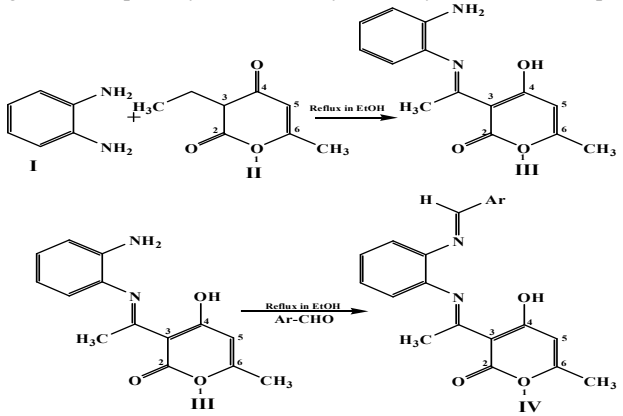
Milind College of Science,Aurangabad,431002,Maharashtra,India.
Email: srannapure@gmail.com

Asymmetrical tetradentate Schiff bases derived from 3-Acetyl-6-methyl-pyran-2,4-dione, *o*-phenylenediamine, and 2-hydroxy 3-methoxy benzaldehyde ,and its five metal complexes have been synthesized and characterized by CHN analysis,[1] H-NMR, mass, IR, UV-visible spectra, magnetic susceptibility, thermal analysis, X-ray diffraction, and proposed its geometry.



Where Ar =3-methoxy-salicylaldehyde

Heterocyclic Letters 7: iss.-3 (2017), 853-862

Synthesis, Characterisation, Antimicrobial studies of Co, Ni, Zn Complexes with Schiff base Ligand derived from 2-thioxo-1,2-dihydropyridine-3-carbaldehyde and 4-phenylpyrimidine-2-carbohydrazide

Virupakshi Prabhakar[*1], B.Ramakrishna[2], V.M.Dayalan[3]

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[3]Faculty of Chemistry, Siddartha Institute of Technology,JNTU-A,- Putturu, A.P., INDIA.
*.*Corres. Author E-mail:-***viruchem765@gmail.com**

New coordination complexes of Co, Ni and Zn with Schiff base bis ((4-phenylpyrimidin-2-yl)(((2-thioxo-1,2-dihydroquinolin-3-yl)methylene)hydrazono)methoxy) have been synthesized and characterized by several techniques using elemental analysis (C, H, N), IR spectra and ^{1}HNMR spectra. The new Schiff base has been synthesized by the reaction of 4-phenylpyrimidine-2-carbohydrazide and 2-thioxo-1,2-dihydropyridine-3-carbaldehyde. The Schiff base behaves as tridentate ONS donor ligand and exhibited octahedral geometry. The Schiff base ligand and complexes were tested for their antibacterial activity against Staphylococcus aureus, Escherichia coli and Proteus vulgaris to assess their inhibiting potential. In screening medium was nutrient agar and biological screening were performed by employing cup plate method. Antibacterial activity of the ligand and its metal complexes is compared with the standard drug ciprofloxacin. In this series Co (II) complexes showed high antibacterial activity and the other complexes showed moderate antibacterial activity against different bacteria.

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Heterocyclic Letters 7: iss.-3 (2017), 863-866

Synthesis of schiff base by green method and their antimicrobial activity

Anjali Yeole, Sayujjata Vaidya, Mangal Bagal

Vivekanand Arts Sardar Dalipsing Commerce and Science College Aurangabad
Emailmrbagalchem@gmail.com

A new Schiff base ligands derived from substituted aldehyde and hydrazine hydrate by green method. The ligands were characterized by *M. P.,TLC,* ^{1}*H-NMR* and *MASS.* The Schiff base ligands were screened for antibacterial activity against *Pseudomonas Aeurogenosa* and *Escherichia coli and fungicidal activity were tested against Aspergillus Niger and Trichoderma.*

Heterocyclic Letters 7: iss.-3 (2017), 867-873

Iron (III)-catalyzed efficient one-pot synthesis of functionalized dihydrobenzo[4,5-*d*]imidazo[1,2-*a*]pyrimidines

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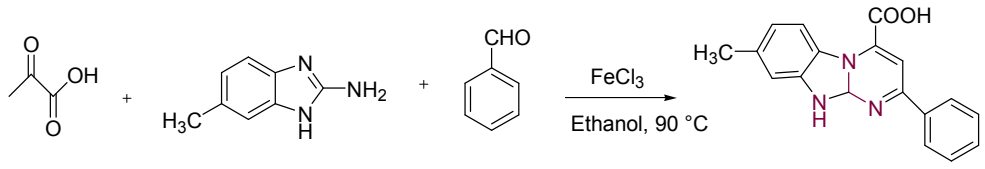
[$]*DESM, Regional Institute of Education (NCERT), Ajmer-305004*
[#]*Bhagwant University, Ajmer, (Rajasthan), India- 305004*
✱*E-mail: rai2iocl@gmail.com*

A concise and efficient Iron(III)-catalyzed one-pot domino synthesis of functionalized dihydrobenzo[4,5-*d*]imidazo[1,2-*a*]pyrimidines has developed by reaction of 2-aminobenzimidazole with substituted aromatic aldehyde and pyruvic acid in ethanol. The present methodology provides a convenient, atom-economical and eco-friendly approach for the synthesis of biologically important imidazopyrimidines from easily available substrates under mild reaction conditions.



1 2a 3a 4a

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Synthesis, charterization and evaluation of iron chelation and antioxidant activity of novel heterocyclic compounds containing 1, 2, 4-triazole ring

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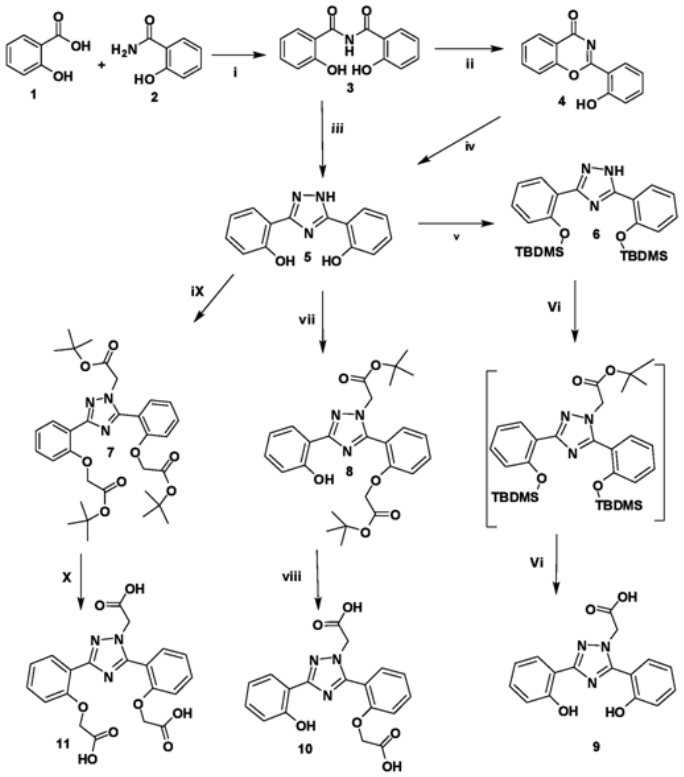
[1, 2] Research and Development Centre, Bharathiar University, Coimbatore-641046, Tamilnadu, India.
[3]corresponding Author: PG & Research Department of Chemistry, Muthurangam Govt. Arts College, Vellore 632002, Tamilnadu, India,*
**Corresponding author E-mail: sai_gugan@yahoo.com*

A novel iron chelation agents 2, 2'-(1H-1, 2, 4-triazole-3, 5-diyl) diphenol derivatives has been synthesized and chelation properties has been demonstrated. This molecule showing iron chelation activity and chelation activity is comparable with Deferasirox. The antioxidant activity was conducted and comparable with Ascorbic acid. The antibacterial activity in the series of triazole based on heterocycle derivatives. The synthesized compounds were evaluated by FTIR, UV-Vis, ^{1}H- NMR, ^{13}C – NMR, Mass spectrometry and elemental analysis.



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Heterocyclic Letters 7: iss.-3 (2017), 889-892

Synthesis, characterization, antimicrobialand antifungal activitiesof some new 1*e*-1-{3-ethoxy-1-(2,4-dinitrophenyl/phenyl)-5-oxo-1*h*-pyrazol-4-(5*h*)-ylidene}-4-(substituted phenyl)thiosemicarbazide

V. Kumar, V.Khatri, V.Sareen and S.Sareen*

Department of Chemistry, University of Rajasthan, Jaipur-302004, India
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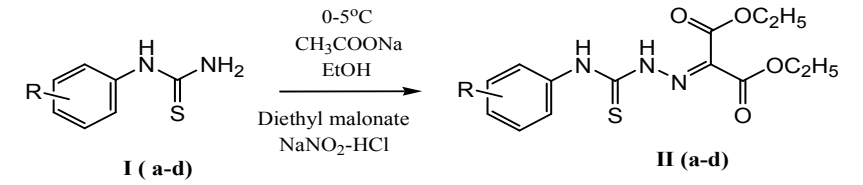
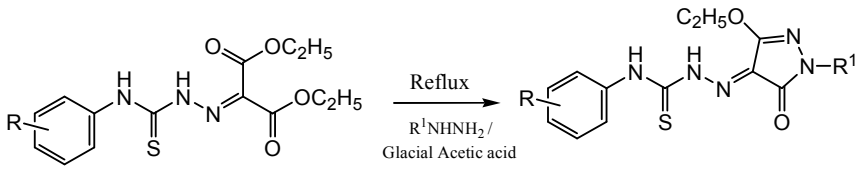
**S. S. Jain Subodh P. G. MahilaMahavidyalaya, Ram Bagh, Jaipur, Rajasthan, India*
E-mail: sareenparmod@yahoo.com



I (a-d) **II (a-d)**



II (a-d) **III (a-d) & IV (a-d)**

Heterocyclic Letters 7: iss.-3 (2017), 893-894

Carbon Dioxide-Mediated Preparation of Pyrroles in Water Following Paal Knorr Method

Ram Naresh Yadav[a] and Bimal K. Banik[a, b*]

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1201 W. University Dr., Edinburg, TX 78539 USA;
[b]Current address: 3135 South Sugar Road, Edinburg, TX 78539 USA; bimalbanik10@gmail.com and bimal.banik@chsst.org

Carbon dioxide-mediated synthesis of N-substituted pyrroles

Starting Compound	Product	Yield (%)
2,5-Hexanedione and aniline	N-Phenyl 2,5-dimethylpyrrole	95

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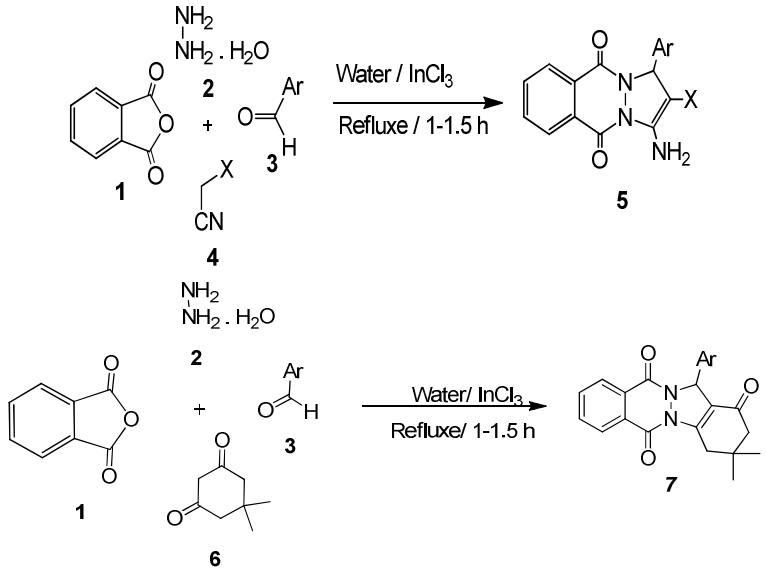
Water mediated one- pot- synthesis of 1*H*-pyrazolo[1,2-b]phthalazine-5,10-diones and 2H-indazolo[2,1-b]phthalazine-1,6,11(13H)-triones

Eswararao.S.V[1], Venkataramireddy.V[2], Sreenivasareddy.M[3]*, and Pramod kumar[4]*

[1,2&3] R&DCentre Sreenilabs Pvt. Ltd, SurveyNo.124/P, PlotNo.24, TechPark,IDA,Nacharam, Hyderabad-500076, Telangana, India.
[4]Retired Professor, Centre for Chemical Sciences and Technology, IST, Jawaharlal Nehru Technological University Hyderabad, Kukatpally, Hyderabad-500085,India.
Email: eswar.sapireddy@gmail.com



Heterocyclic Letters 7: iss.-3 (2017), 905-906

Carbon Dioxide-Mediated Synthesis of Pyrroles in Water

Ram Naresh Yadav[a]and Bimal K. Banik[a, b*]

[a]Department of Chemistry, University of Texas-Pan American, 1201 W. University Dr., Edinburg, TX 78539 USA;
[b]Current address: 3135 South Sugar Road, Edinburg, TX 78539 USA; bimalbanik10@gmail.com and bimal.banik@chsst.org

Starting Compound	Product	Yield(%)
2,5-Dimethoxytetrahydrofuran and aniline	N-Phenylpyrrole	90

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Glycerol promoted synthesis of tetrahydrocyclopenta[*b*]pyran via a multicomponent-tandem strategy under catalyst free conditions

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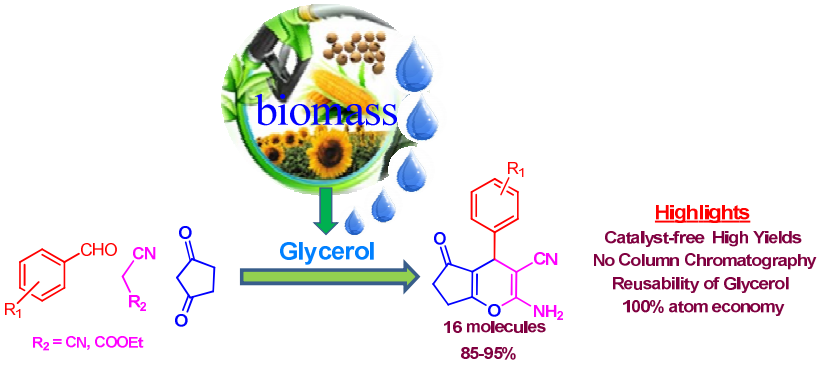
The development of a one pot, multicomponent-tandem, catalyst free, facile synthesis of cyclopenta[*b*]pyran and its derivatives is reported. The key feature of the reported method is the use of glycerol, an inexpensive, eco-sustainable, biodegradable and reusable, biomolecule as a solvent cum promoter making it really a useful green method.



MISCELLANEOUS

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Undergraduate and high school students research mentoring

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Effective mentoring of undergraduates and high school students in the research laboratory is a significant challenge. This complex responsibility is rewarding for senior scientists, faculty members and community leaders, as well as many young students. Evidenceis given that high school and undergraduate students are capable of conducting competitive research