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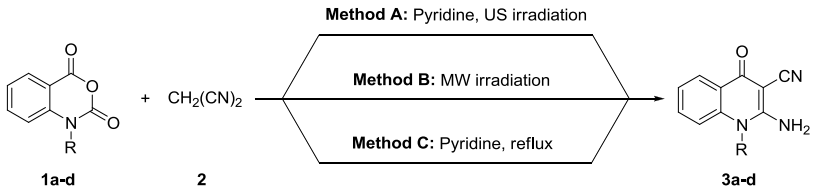
Graphical Abstract

Heterocyclic Letters 7: iss.-4 (2017), 947-952

Comparative study on conventional heating, ultrasonication and microwave assisted synthesis of 2-amino-1-alkyl-4-oxo-1,4-dihydroquinoline-3-carbonitriles

Fereshteh Khoramdelan, Abolghasem Davoodnia*, Mohammad R. Bozorgmehr, and Mahmoud Ebrahimi

Department of Chemistry, Mashhad Branch, Islamic Azad University, Mashhad 9175687119, Iran



a: R = Me
b: R = Et
c: R = n-Bu
d: R = CH_2Ph

In present study, the synthesis of 2-amino-1-alkyl-4-oxo-1,4-dihydroquinoline-3-carbonitriles by the reaction of *N*-alkylisatoic anhydrides with malononitrile using conventional heating method in pyridine is compared with unconventional approaches including ultrasonication in pyridine and microwave irradiation. The results showed that although the reactions completed within shorter period of time under microwave irradiation, the yields of the products were higher under conventional heating and ultrasonication in pyridine. However, the conventional heating method has longer reaction times than others.

Heterocyclic Letters 7: iss.-4 (2017), 953-958

An efficient synthesis of 3-amino alkylated indoles *Via* a mannich-type reaction catalyzed by sio_2-i

Abdul Ahad and Maqdoom Farooqui*

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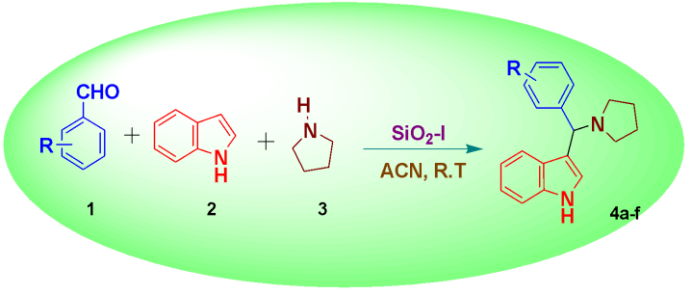
An efficient methodology for the synthesis of 3-aminoalkylated indoles was developed using SiO_2-I as an efficient heterogeneous catalyst via a Mannich-type reaction. The mild reaction conditions, shorter reaction times, excellent yields at room temperature, simple work-up procedure, cost effectiveness and re-usability of the catalyst and no by-product formation are the key advantages of our protocol over reported ones.



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Heterocyclic Letters 7: iss.-4 (2017), 959-966

Thiamine hydrochloride as a promoter for the efficient and green synthesis of spirooxindoles and its derivatives in aqueous micellar medium

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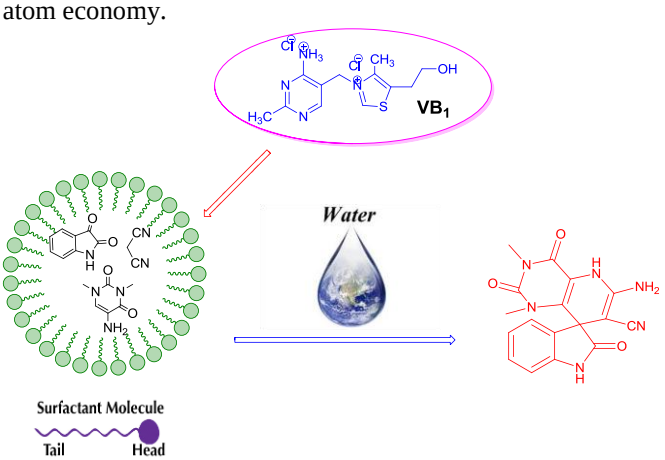
E-mail: aks.modanwal@gmail.com

An efficient, one pot Thiamine hydrochloride promoted, synthesis of spirooxindoles and its derivatives in aqueous micellar medium has been reported. The important aspects of the present methodology is environmentally benign reaction conditions, operational simplicity, cost effectiveness, short reaction times, easily recoverable and reusable catalyst, high yields, 100% atom economy.



Heterocyclic Letters 7: iss.-4 (2017), 967-973

Covalently bonded sulfonic acid magnetic graphene oxide promoted synthesis of 1,2,4,5-tetrasubstituted imidazoles

Ahmad Nakhaei*

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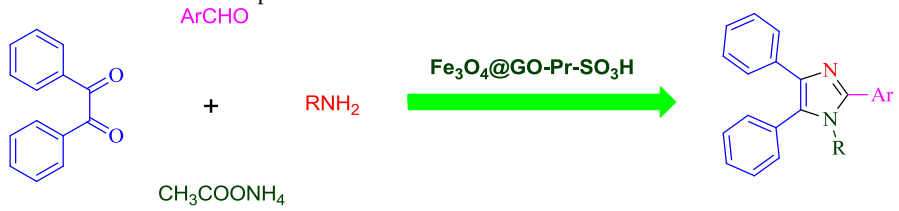
In this research work, fast and green synthesis of 1,2,4,5-tetrasubstituted imidazoles by the one-pot, four-component thermal reaction of benzil with aromatic aldehydes, primary amines, and ammonium acetate in the presence of Fe_3O_4@GO-Pr-SO_3H as catalyst in solvent-free condition has been reported.



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Heterocyclic Letters 7: iss.-4 (2017), 975-980

An efficient synthesis of bis (indolyl) methanes using tartaric acid catalyst

Rakesh P. Chaudhari[1]. Ganesh R.Chaudhari[1]* Bharti P.Koli[1], Hemant T. Ingale[1], Chandrakant H. Sarode[2]

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2.*P.O.Nahata College, Bhusawal,Dist- Jalgaon,MS, India*
Email: *drgrc76@gmail.com*

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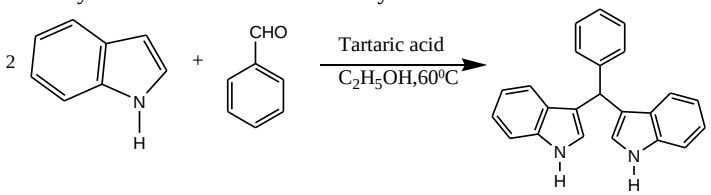
In this report we have investigated the synthesis of various bis (indolyl) methanes catalyzed by tartaric acid.The optimized reaction conditions were screened by different amounts of the catalyst in ethanol solvent.



we studied the influence of 40mmole% tartaric acid in ethanol as a catalyst by reaction with different substituted aromatic aldehydes at 60^{0}C. Substrates with an electron-withdrawing substituent gave excellent yields. The products were characterized by FT-IR, 1H-NMR.

Heterocyclic Letters 7: iss.-4 (2017), 981-991

Studies of some new thiazole clubbed Schiff base and 4-oxo-thiazolidine derivatives as potent antimicrobial, antitubercular and anticancer agents

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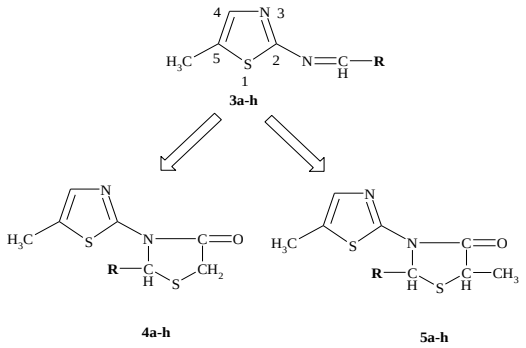
Veer Narmad South Gujarat University, Surat, Gujarat, India
**E-mail: dranjani_solankee@yahoo.com*

In the present work, thiazole clubbed Schiff bases **(3a-h)**, 2,3-disubstituted-4-oxo-thiazolidine **(4a-g)** and 2,3-disubstituted-5-methyl-4-oxo-thiazolidine **(5a-g)** derivatives. The target compounds were characterized by FT-IR, ^{1}H-NMR, ^{13}C-NMR, mass spectroscopy as well as elemental microanalysis. Preliminary examination of target compounds as pharmacological active antimicrobial, antitubercular and anticancer agents have been carried out by using standard method. Some of the compounds serving as a lead potent for future study.



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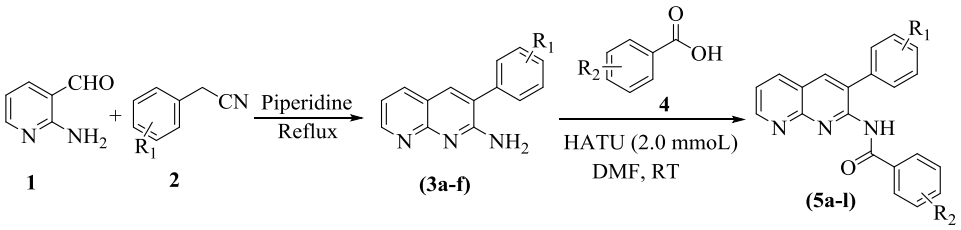
Heterocyclic Letters 7: iss.-4 (2017), 993-1000

Design and synthesis of novel substituted 1,8-naphthyridin-2-yl-amide derivatives at ambient temperature and evaluation of their antimicrobial activity

Banoth Sonyanaik and Boda Sakram*

Department of Chemistry, Osmania University, Hyderabad-500007, Telangana, India
**Email: bschemou@gmail.com*



R_1=H, 4-Br, 3NO_2, 4-Cl, 4-NO_2, 3-Br

R_2= H, 4-Cl

Heterocyclic Letters 7: iss.-4 (2017), 1001-1014

Synthesis, characterization, pharmacological and antimicrobial studies of schiff and mannich bases

Balakrishna Kalluraya[a*], Abdul Rahiman[a], Asma[b] and Manju N[b]

[a *]*Department of Studies in Chemistry, Mangalore University, Mangalagangothri, Mangalore-574199, Karnataka, India.*
[a] *Department of Studies in Chemistry, Government Science College, Hassan-573201, Karnataka, India.*
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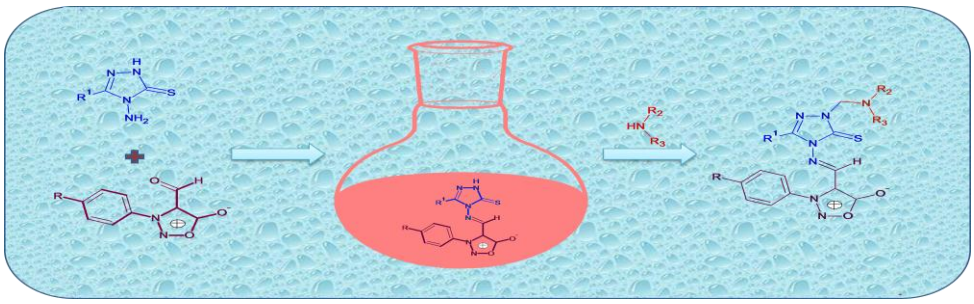

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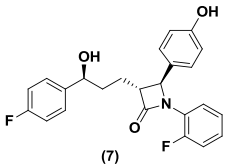
Heterocyclic Letters 7: iss.-4 (2017), 1015-1025

Total synthesis of ezetimbie and their key sterioisomers

Satyanarayana G V[a], Vijaya Bhasker G[a], Laxminarayana E*[b] and Thirumala Chary M[a]

[a]*Jawaharlal Nehru Technological University Hyderabad, Kukatpally, Hyderabad, Telangana -500 085 India*
[b]*Sreenidhi Institute of Science and Technology (Autonomous), Ghatkesaer, Hyderabad-501 301 (Telangana) India* Email: elxnkits@yahoo.co.in



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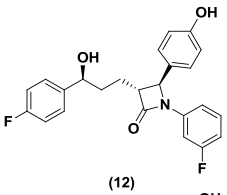

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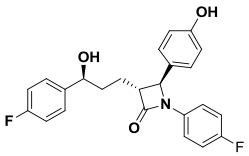

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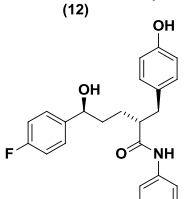

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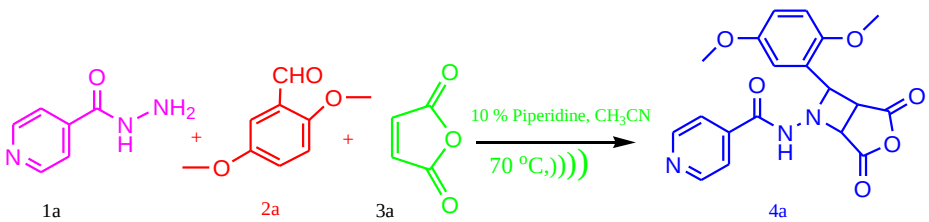
Heterocyclic Letters 7: iss.-4 (2017), 1027-1034

THREE-COMPONENT ONE POT CYCLOADDITION REACTION USING PIPERIDINE CATALYST UNDER CONVENTIONAL / ULTRASONIC TECHNIQUES

PravinChavan[a]*, Shivaji Jadhav[b], D.D.Kayande[c], Megha Rai[b]

[a] *Department of Chemistry, DoshiVakil Arts and G.C.U.B. Science and Commerce College, Goregaon-Raigad, Maharashtra-India ; Email id: chemistryp141286@gmail.com*
[b]*Department of Chemistry, Dr. Rafiq Zakaria College for Woman, Navkhanda, Jublee Park, Aurangabad Maharashtra- India.*
[c]*S.B.E.S college, Aurangabad, Maharashtra- India.*

The synthesis of substituted N-(2,4-dioxo-3-oxa-6-azabicyclo[3.2.0]heptan-6-yl)isonicotinamide derivatives bearing isoniazid moieties have been successfully and conveniently synthesized through efficient three component one pot (2π+2π) cycloaddition reaction with isonicotinic acid hydrazide as starting materials.The synthesized compounds have been characterized by their spectral characteristics.



1a 2a 3a 4a

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Heterocyclic Letters 7: iss.-4 (2017), 1035-1043

Nano Magnetic Zirconia phosphoric acid as an Efficient and Recyclable Catalyst for the Clean Synthesis of Biscoumarins

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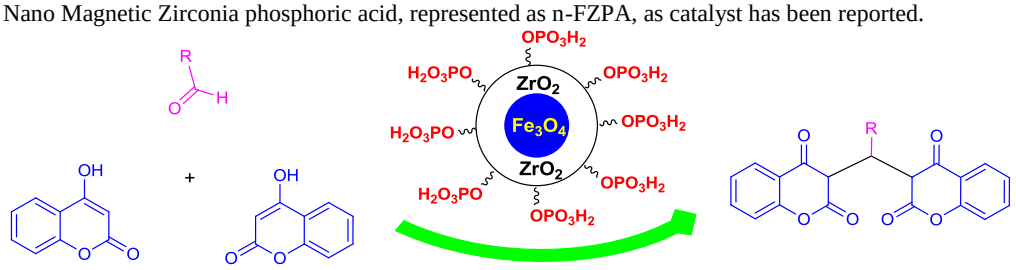
[1]*Young Researchers and Elite Club, Mashhad Branch, Islamic Azad University, Mashhad, Iran*
**E-mail: nakhaei_a@yahoo.com, nakhaei_a@mshdiau.ac.ir*
[2]*Department of Chemistry, Mashhad Branch, Islamic Azad University, Mashhad, Iran*
**E-mail: shirin_ramezani2012@yahoo.com*

In this work, synthesis of biscoumarin derivatives by one-pot reaction of 4-hydroxycoumarin, and aromatic aldehydes in the presence of Nano Magnetic Zirconia phosphoric acid, represented as n-FZPA, as catalyst has been reported.



Heterocyclic Letters 7: iss.-4 (2017), 1045-1054

Synthesis, characterization, cytotoxic& antitumour activities of schiff bases of curcuminoid analogues and their copper complexes

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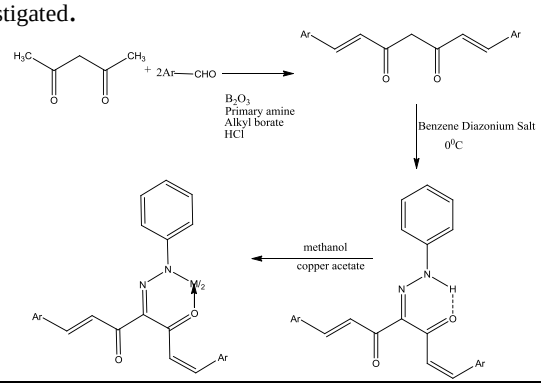
rainajc@gmail.com

Synthesized and characterized Schiff bases of four curminoid analogues and their copper(II) complexes. The cytotoxic and antitumour activities were also investigated.



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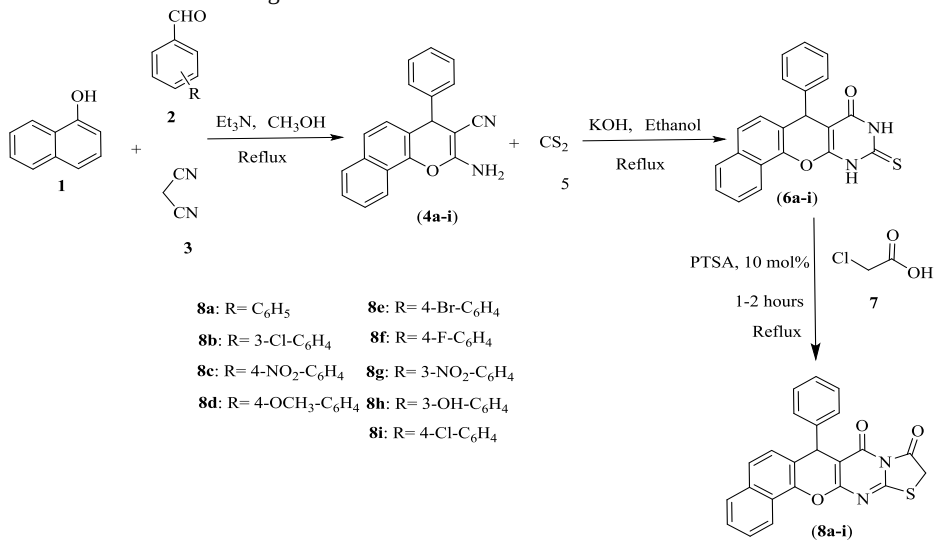
Heterocyclic Letters 7: iss.-4 (2017), 1055-1060

PTSA catalyzed an efficient synthesis of novel thiazolo [3,2-a]pyrimidinone derivatives and their biological evaluation

Banoth Sonyanaik,[1] Boda Sakram*[1] and Kudle karunkar[2]

[1]Department of Chemistry, Osmania University, Hyderabad-500007, Telangana, India
[2]Department of Biochemistry, Osmania University, Hyderabad-500007, Telangana, India
**Email: bschemou@gmail.com*

A highly proficient protocol has been enlarged for the construction of thiazolo[3,2-a]pyrimidinone scaffolds in the presence of *p*-toluenesulfonic acid involving 7-phenyl-10-thioxo-7,9,10,11-tetrahydro-8H-benzo[7,8]chromeno[2,3-d]pyrimidin-8-ones with chloroacetic under reflux conditions analytically pure products are furnished with good yields. All these newly synthesized compounds were confirmed by their spectral data IR, ^{1}H-NMR, Mass spectrometry and elemental analyses. All these compounds **(8a-i)** were screened for their systemic biological evaluation of antibacterial and fungal activities among them compounds **8g** and **8b** showed highest antibacterial and antifungal activities.



8a: R= C_6H_5 **8e**: R= 4-Br-C_6H_4
8b: R= 3-Cl-C_6H_4 **8f**: R= 4-F-C_6H_4
8c: R= 4-NO_2-C_6H_4 **8g**: R= 3-NO_2-C_6H_4
8d: R= 4-OCH_3-C_6H_4 **8h**: R= 3-OH-C_6H_4
8i: R= 4-Cl-C_6H_4

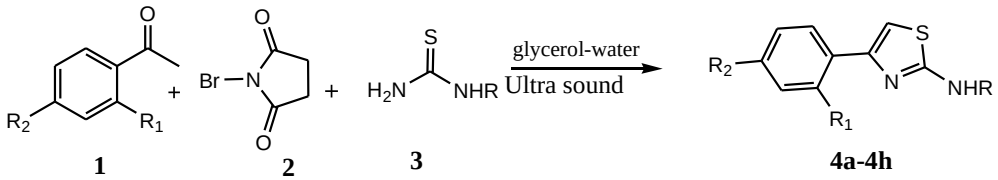
Heterocyclic Letters 7: iss.-4 (2017), 1061-1064

Facile and green one-pot synthesis of 2-aminothiazoles in glycerol-water

Mujahed H. shaikh,[a] Devendra S. Wagare,[a] Mazahar A. Farooqui,[a] Ayesha N. Durrani*[a\]

*[*c]Department of chemistry, Rafiq Zakaria College for Women, Aurangabad (M.S.), India*

Scheme :-



1 **2** **3** **4a-4h**

One-pot synthesis of 2-aminothiazole under ultrasonication.

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Heterocyclic Letters 7: iss.-4 (2017), 1065-1071

Synthesis and characterization of some novel indazole analogous: thiazolidines for antifungal study

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[2]Department of Chemistry, Chaitanya PG College (Autonomous), Hanamkonda-506001, Warangal, Telangana, India
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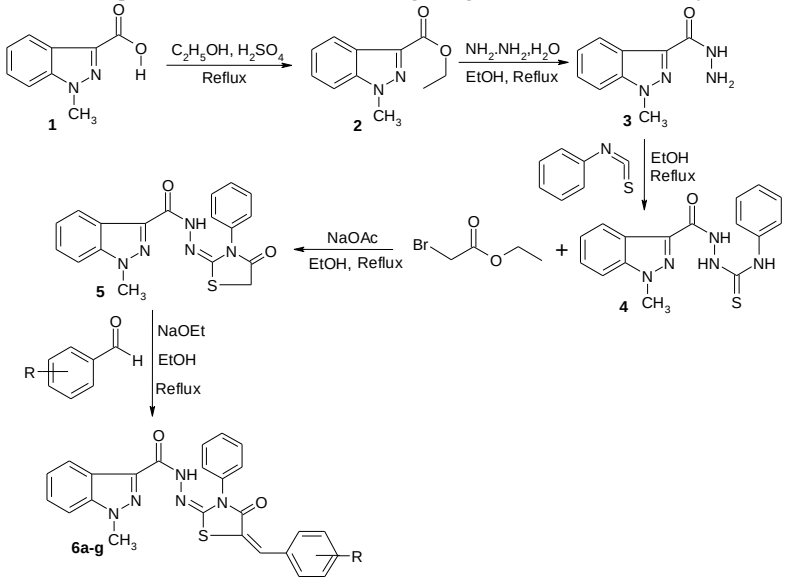
A new series of 1-methyl-1*H*-indazole-3-carboxylic acid (5-benzylidene-4-oxo-3-phenyl-thiazolidin-2-ylidene)-hydrazides **(6a-g)** was synthesized in good yields from 1-methyl-1*H*-indazole-3-carboxylic acid (4-oxo-3-phenyl-thiazolidin-2-ylidene)-hydrazide **(5)** by operating 1-methyl-1*H*-indazole-3-carboxylic acid **(1)** as starting material and 1-methyl-1*H*-indazole-3-carboxylic acid ethyl ester **(2)**, 1-methyl-1*H*-indazole-3-carboxylic acid hydrazide **(3)**, 1-(1-methyl-1*H*-indazole-3-yl)-carbanoyl-4-phenylthiosemicarbazide **(4)** as intermediates. All the resulted compounds were characterized through spectral data and elemental analysis. Eventually, the title compounds were screened for their antifungal activity against four fungal organisms. As per the screening results, tested compounds exhibited moderate to good growth inhibition activity with a degree of variation.

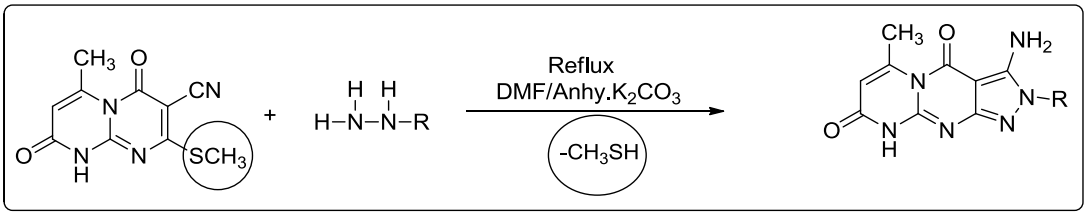


Heterocyclic Letters 7: iss.-4 (2017), 1073-1077

Synthesis of N-substituted pyrazolo pyrimido pyrimidines and their antioxidant evaluation

Sambhaji P. Vartale[1*], Sandeep G. Sontakke[2] and Prashant N. Ubale[1]

[1]P.G. Research Centre, Department of Chemistry, Yeshwant Mahavidyalaya, Nanded -431602, (MS), India.
[2]Department of Chemistry, Dr.B.N.Purandare Arts, Smt.S.G.Gupta Commerce and Science College, Lonavala-410403 (MS), India
Correspondence email-id: spvartale@gmail.com



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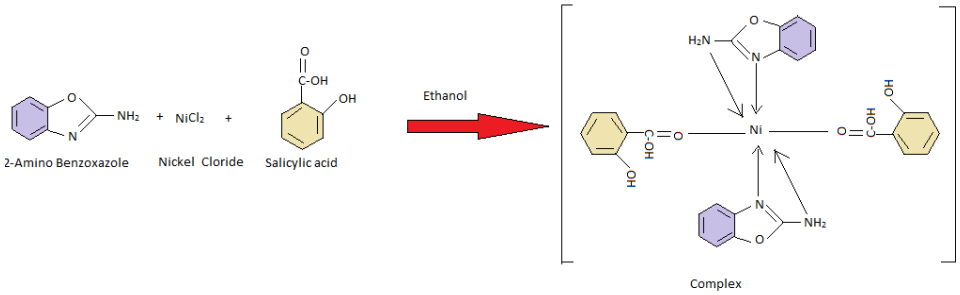
Heterocyclic Letters 7: iss.-4 (2017), 1079-1083

Antimicrobial activity of nickel(ii) complex with 2-aminobenoxazole and salicylic acid

Indu Raj*, Manjul Shrivastava

Department Of Chemistry, Govt. M.H. College Of Home Science And Science For Women autonomous Napier Town Jabalpur. 7509003813, 9301042570.
Email id-raj.indu.indu@gmail.com

Heterocyclic compounds play an important role in medicinal chemistry and exhibit wide range of biological activities. Nickel(II) chloride reacts with 2-aminobenzoxazole and co-ligand salicylic acid to give mixed ligand complex of the formula [NiL_2Cl_2], where L=2-aminobenzoxazole and salicylic acid. 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 and antifungal 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 and antifungal activity against different fungai A.niger ATCC16888, A.flavus MTCC9606, Fusarium oxysporum MTCC1755, paecilomyces variotii MTCC2040 C.albicans ATCC10231.



Heterocyclic Letters 7: iss.-4 (2017), 1085-1095

Microwave - assisted synthesis of novel piperidone derivative bearing amino-aryl moiety and their anti-microbial activity assessment

K. Charles Christopher[1]*, S. Sumathi[2,3]

[1]Department of Chemistry, Valliammai Engineering College, Kattankulathur, Tamilnadu-603203, India
[2] Department of Chemistry, Sri Sairam Institute of Technology Chennai-44, Tamilnadu, India
[3]Research and Development Centre, Bharathiar University, Coimbatore-46, Tamilnadu, India
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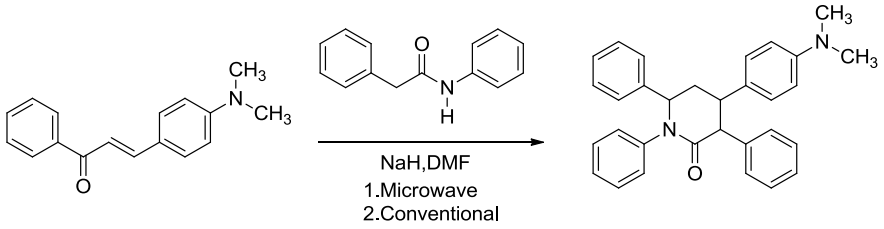
A facile synthesis of new-fangled phenyl united piperidine moieties within the main cyclic chain was synthesized through the Michael addition reaction of phenylethyl acetamide with novel chalcone c in a silica gel medium consisting of sodium hydride has been represented. It's a comparative study of synthesizing compounds by conventional as well as non-conventional microwave irradiation in a commercially modified microwave oven and conjointly confirms the attainable intervention of specific microwave effect. The structures of newly synthesized compounds were characterized by FT-IR, UV-Vis, NMR (^{13}C, ^{1}H) and GC-Mass the synthesized compounds were evaluated for their *in vitro* anti-microbial activity against a variety of microbial strains. The biological screening results indicated that some of the compounds showed significant anti-bacterial and anti-fungal activities.



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Heterocyclic Letters 7: iss.-4 (2017), 1097-1105

Synthesis of 7-(morpholinomethyl)-9-(trifluoromethyl)-4-((4-(trifluoromethyl)phenyl)amino)-1-thia-4,7,8-triazaspiro[4.4]non-8-ene-3,6-dione

S.Muralikrishna, P.jagadeeswararao, P.Ravisankarareddy

[1]Santhiram College of Engineering & Technology, Nandyal-518501, A.P. India
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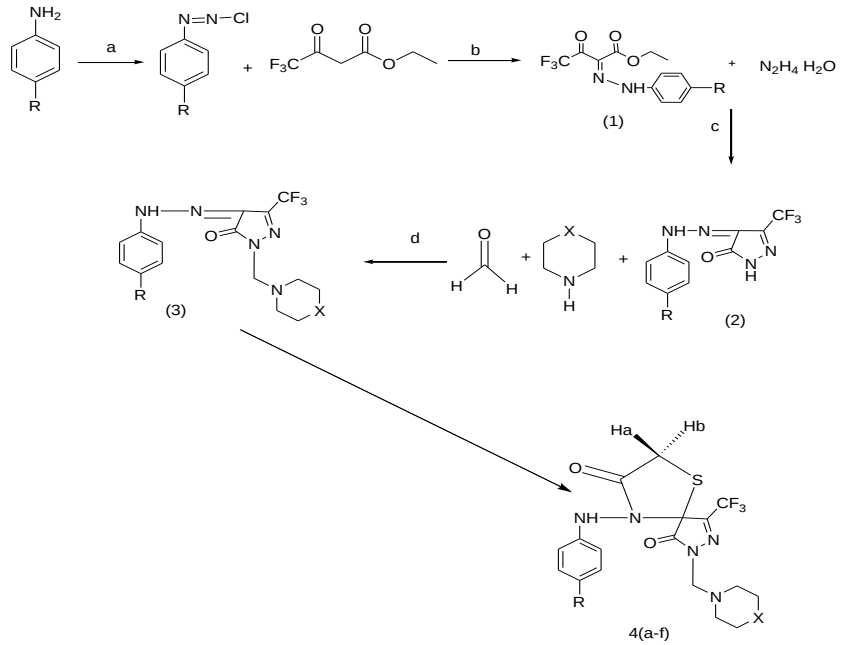
Email ID;-muralisphd@gmail.com

Mannich base synthesis of 7-(morpholinomethyl)-9-(trifluoromethyl)-4-((4-(trifluoromethyl)phenyl)amino)-1-thia-4,7,8-triazaspiro[4.4]non-8-ene-3,6-dione by the condensation of 1-(morpholinomethyl)-3-(trifluoromethyl)-4-(2-(4-(trifluoromethyl)phenyl)hydrazono)-1H-pyrazol-5(4H)-one with mercaptocarboxolic acid.The structure of these newly synthesized compounds were characterised by ^{1}H NMR,^{13}CNMR ,Mass ,IR, and elemental analysis**.**



Compd	4a	4b	4c	4d	4e	4f
R	-H	-CH_3	-OCH_3	-Cl	-NO_2	-CF_3
X	-O-	-O-	-O-	-O-	-O-	-O-

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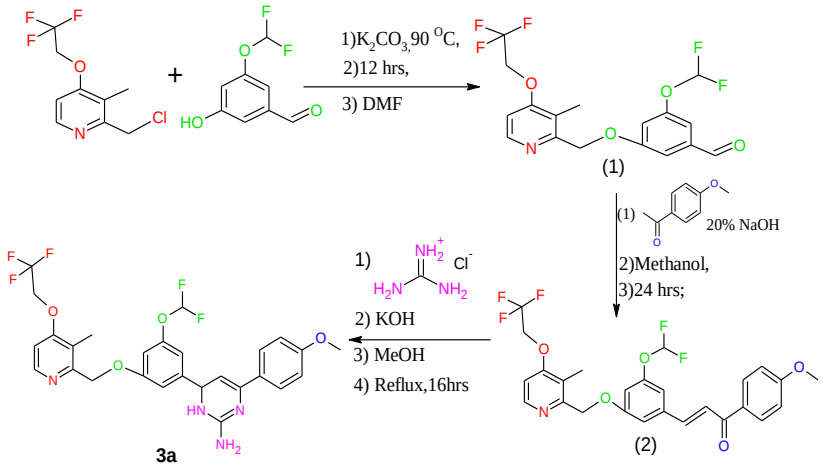
Heterocyclic Letters 7: iss.-4 (2017), 1107-1111

Synthesis of 2-Amino-4-(4′′′′-methoxyphenyl)-6-{[(3′-difluoromethoxy)-5′-(3′′-methyl)-4′′-(2‴,2‴,2‴-trifluoroethoxy)pyridin-2′′-yl]methoxyphenyl}-1,6-dihydropyrimidine

Sandip P. Kakadiya, Dipak M. Purohit*

Shree M.& N. Virani Science College,Chemistry Department,
Kalawad Road,Rajkot-5,Gujarat,(INDIA)
*E-mail:*sandip.k.msc@gmail



2-Amino-4-aryl-6-{[(3′-difluoromethoxy)-5′-(3′′-methyl)-4′′-(2‴,2‴,2‴-trifluoroethoxy)pyridin-2′′-yl]methoxyphenyl} -1,6-dihydropyrimidine (3a-3k) have been synthesized by the condensation (E)-3-{[(3′-Difluoromethoxy)-5′-(3′′-methyl)-4′′-(2‴,2‴,2‴-trifluoroethoxy)pyridin-2′′-yl]methoxyphenyl}-1-aryl-prop-2-ene-1-ones with guanidine hydrochloride in alkali medium.The products (3a-3k) were assigned by IR, ^{1}HNMR, Mass spectral data, TLC and element analysis.

Heterocyclic Letters 7: iss.-4 (2017), 1113-1119

Catalyst-Free & Water Mediated: Step-Wise, Tandem & One-Pot Syntheses Of 2-(1H-Benzo[D]Oxazole-2-Yl)-*N*-Arylbenzamides

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

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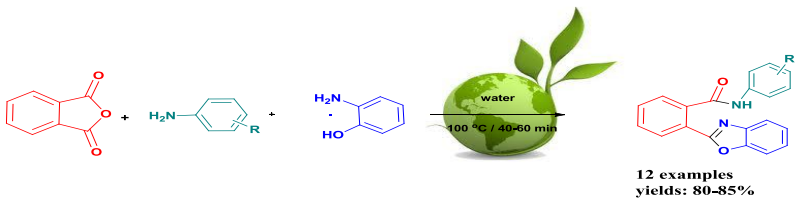
Email: eswar.sapireddy@gmail.com

Catalyst-free & water mediated, step-wise, tandem & one-pot three-component synthesis of 2-(1*H*-benzo[d]oxazole-2-yl)-*N*-arylbenzamides have been developed by combining phthalic anhydride with anilines & *o*-aminophenol.



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Antimicrobial Activity of Newly Synthesized and Characterized of Mixed Bi-Heterocyclic Azo Compound (3-Pyridyl-Azo-Benzimidazole)

Mathur Tanmay[1*], Seal Madhurima[3], Chatterjee Soumendranath[3], Saha Chandra Nimai [2]

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[3] *Vice-Chancellor*
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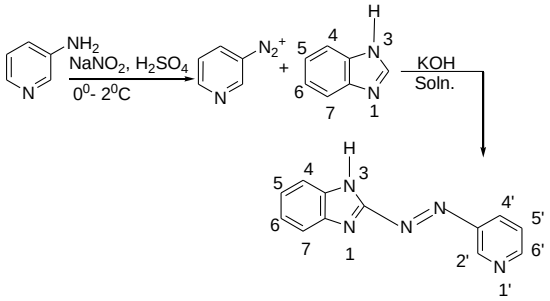
Rajbati, Burdwan, West-Bengal-713104, India;

Azo-imine group containing Pyridine and benzimidazole bi-heterocyclic azo compound should have versatile activities in biological fields. We are convinced from the literature survey of pyridine and benzimidazole derivatives to synthesize pyridine and benzimidazole containing mixed bi-heterocyclic azo compound, (2-[(3-pyridyl)azo]benzimidazole). Synthesis has been carried out by the reaction between diazonium salt of 3-aminopyridine with the benzimidazole in alkaline solution at low temperature. The structure of the newly synthesized compound has been characterized on the basis of IR, UV-Vis, ^{1}H NMR and Elemental analysis. Investigation of invitro anti-microbial activity of synthesized compound was done by well diffusion method against some common Gram positive and Gram negative bacteria. The successfully synthesized compound exhibited highest to moderate inhibitory effect against Gram-negative bacteria Pseudomonas fluorescence, Salmonella sp and E. Coli.



Heterocyclic Letters 7: iss.-4 (2017), 1127-1131

Microwave assisted synthesis and antimicrobial activity of 4-((4-substitutedphenyl)sulfonyl)morpholines

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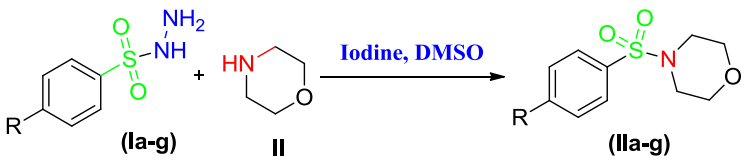
E-mail: *chithalurianji39@gmail.com*

A series of 4-((4-Substitutedphenyl)sufonyl)morpholines have been synthesized from 4-substitutedbenzenesulfonohydrazides and morpholine under microwave irradiation and conventional heating methods. All the compounds tested for their in vitro antimicrobial activity against bacterial and fungal organisms and they were characterized on the basis of spectral data such as IR, ^{1}H NMR, ^{13}C NMR, mass spectral data and elemental analysis.



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Antimicrobial activity of magnese(ii) complex with 2-aminobenoxazole and salicylic acid

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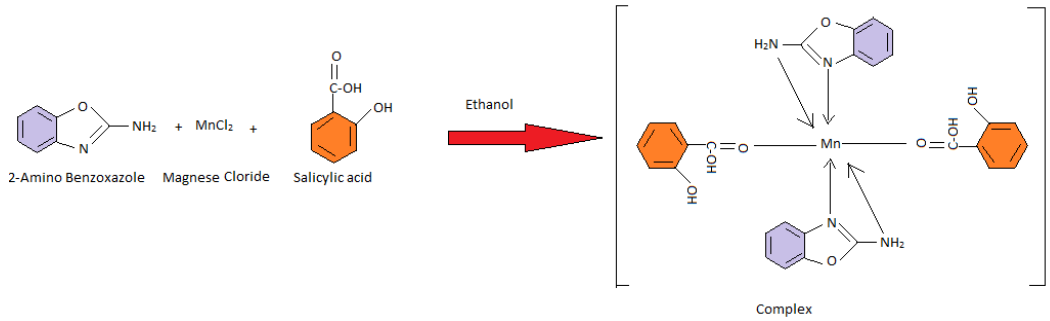
Heterocyclic compounds play an important role in medicinal chemistry and exhibit wide range of biological activities. magnese(II) chloride reacts with 2-aminobenzoxazole and co-ligand salicylic acid to give mixed ligand complex of the formula $[MnL_2Cl_2]$, where L=2-aminobenzoxazole and salicylic acid. 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 and antifungal 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 and antifungal activity against different fungai A.niger ATCC16888, A.flavus MTCC9606, Fusarium oxysporum MTCC1755, paecilomyces variotii MTCC2040 C.albicans ATCC10231.

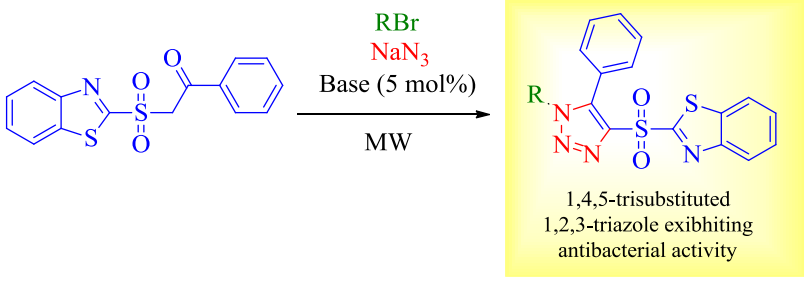


Heterocyclic Letters 7: iss.-4 (2017), 1139-1146

Microwave-assisted one-pot synthesis of benzo[*d*] thiazole containing 1,2,3-triazoles by using organo catalytic reaction and their antibacterial activity

Sirassu Narsimha,[a,b] Kumara Swamy Battula,[a] Nagavelli Vasudeva Reddy [a] *

[a]*Department of Chemistry, Kakatiya University, Warangal, T S- 506 009, India*
[b]*ABV Government Degree College, Jangon, T S- 506167, India*
vasujac3@gmail.com



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Condensed bridgehead nitrogen heterocyclic systems : Synthesis and bioactivity of imidazo [2, 1-b]-1,3,4-thiadiazolo [2,3-c]- a-triazoles, s-triazolo[3,4-b]-1,3,4-thladiazolo [3,2-b] imidazo[4,5-b] quinoxaline and bis-(s-triazolo[3,4-b]-1,3,4-thiadiazolo[3,2-b][imidazo[4,5-b] cyclohexane]-5a,6a-diene)

Anju Rathee Ahlawat

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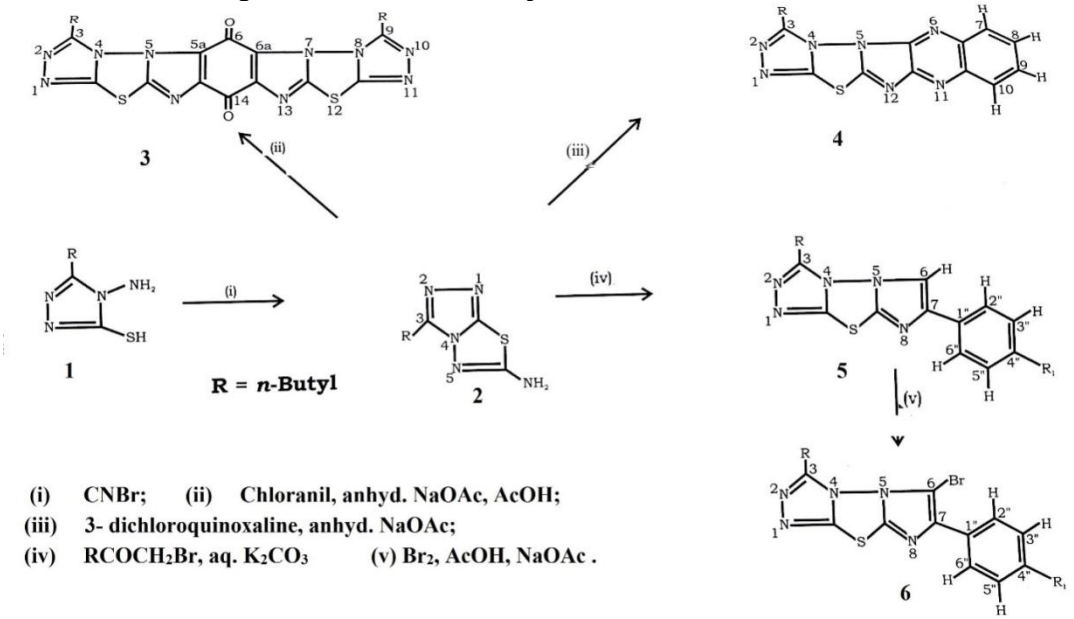
Condensation of 4-amino-3-n-butyl-5-mercapto-*s*-triazole 1 with cyanogen bromide gives 6-amino-3-n-butyl-*s*-triazolo[3,4-*b*]-1,3,4-thiadiazole 2 which on condensation with chloranil yields 3,9-di-n-butyl-6,14-dioxo-*bis*-(*s*-triazolo[3,4-*b*]-1,3,4-thiadiazolo [3,2-*b*] [imidazo [4, 5-*b*] cyclohexane]-5a, 6a-diene) 3. 3-n-butyl -*s*-triazolo [3,4-*b*]-1, 3,4-thiadiazolo [3,2-*b*]imidazo [4, 5-*b*]quinoxaline4 is obtained by a similar condensation of 2 with 2,3-dichloroquinoxaline. The reaction of 2 with α - haloketones followed by bromination affords 7-aryl-3-n-butyl-imidazo [2,1-*b*]-1,3,4-thiadiazolo[2,3-*c*]-*s*-triazoles5 and their 6-bromo analogues 6 respectively. The antibacterial and antifungal activities of some of the compounds have also been evaluated.



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Heterocyclic Letters 7: iss.-4 (2017), 1153-1156

Synthesis of Schiff base of 1,2,4-triazole by green method and their antimicrobial activity

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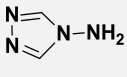
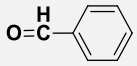
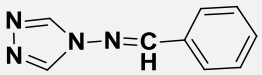
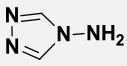
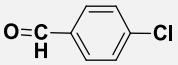
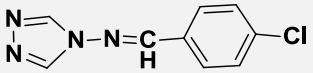
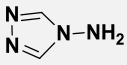
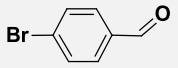
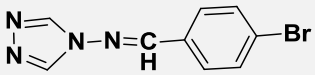
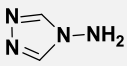
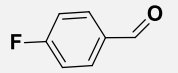
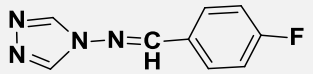
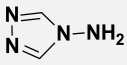
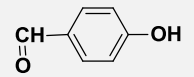
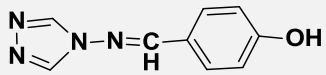
Emailmrbagalchem@gmail.com

The equimolar quantities of substituted aldehyde and 1,2,4-triazole were taken in 500 ml round bottomed flask, 5ml ethanol and 2-3 drops of glacial acetic acid was added and shaked reaction mixture for 1-2 minute at room tempreture, solid crude product was obtained, poured on crushed ice and recrystallise from minimum quantity of ethanol. Purity of product was checked by *TLC* and melting point

Table 1. Synthesis of ligand

Sr.	Reactant	Reactant	Product
1	 4*H*-1,2,4-triazol-4-amine	 benzaldehyde	 *N*-benzylidene-4*H*-1,2,4-triazol-4-amine
2	 4*H*-1,2,4-triazol-4-amine	 4-chlorobenzaldehyde	 *N*-(4-chlorobenzylidene)-4*H*-1,2,4-triazol-4-amine
3	 4*H*-1,2,4-triazol-4-amine	 4-bromobenzaldehyde	 *N*-(4-bromobenzylidene)-4*H*-1,2,4-triazol-4-amine
4	 4*H*-1,2,4-triazol-4-amine	 4-fluorobenzaldehyde	 *N*-(4-fluorobenzylidene)-4*H*-1,2,4-triazol-4-amine
5	 4*H*-1,2,4-triazol-4-amine	 4-hydroxybenzaldehyde	 4-(((4*H*-1,2,4-triazol-4-yl)imino)methyl)phenol

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Bridgehead nitrogen heterocyclic systems: Synthesis and antimicrobial activity of spiro [2, 6-di-p-anisyl piperidine-3', 4(4'-H)-[2H] thiazolo [3, 2-b]-s-tetrazine]

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Maharaja Surajmal Institute of Technology, Janakpuri New Delhi-110058
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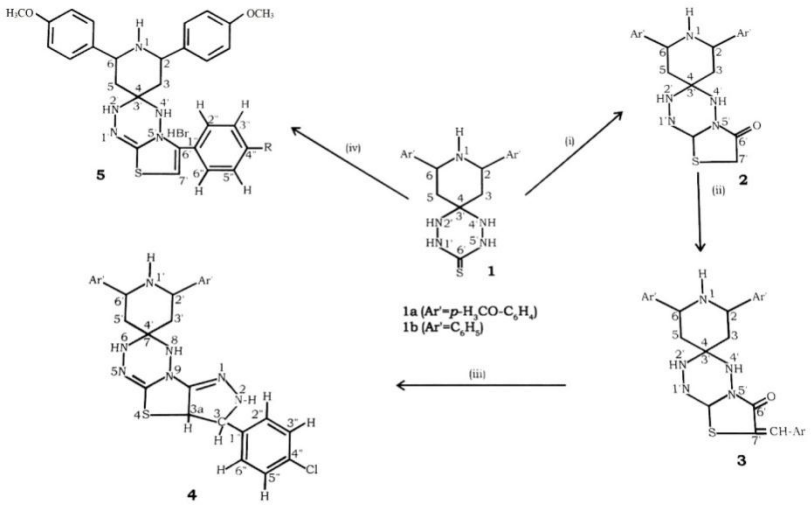
The reaction of spiro[2,6-di-p-anisylpiperidine-3',4-1', 2', 4', 5'-tetrahydro-s-tetrazine-6'-thione] 1 obtained from 2,6-di-p-anisylpiperidin-4-one and thiocarbohydrazide, with chloroacetic acid results in the facile synthesis of 6'-(7'H)-oxospiro[2,6-di-p-anisylpiperidin-3',4(4'H)-[2H]thiazolo[3,2-b]-s-tetrazine] 2. 7'-arylidene derivatives 3a-b have been prepared by the condensation of thiazolidinone 2 with aldehydes. Condensation of 3a with hydrazine hydrate yielded 3, 3a-dihydro-2H-3-aryl-2', 6'-di-p-anisyl spiropiperidin-4', 7(8H)-[6H] pyrazolo [3,4-d]thiazolo[3,2-b]-s-tetrazine 4. The antibacterial activity of some of the compounds have been evaluated.



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One pot synthesis of 4-(benzylidene substituted benzylidene)-n-aryl amino-2-(styryl/substituted styryl) 1h-imidazole-5(4h)-one derivatives and their anti-bacterial activity evaluation

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Department of Chemistry, Jawaharlal Nehru Technological University Hyderabad
College of Engineering, Kukatpally, Hyderabad (A.P), India - 500 085.
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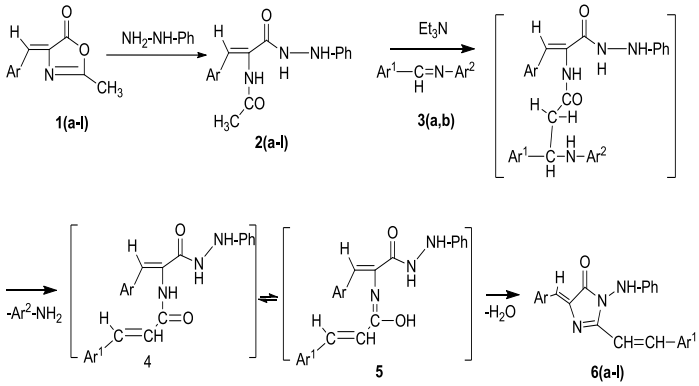
Synthesis of 4-(benzylidene/substituted benzylidene)-N-aryl amino-2-(styryl/substituted styryl)-1H-imidazole-5(4H)-one derivatives have been carried out with good yields from 4-(benzylidene/substituted benzylidene)-2-methyl- oxazolin-5-ones in presence of phenyl hydrazine, schiff's bases and triethylamine as catalyst and their antibacterial activity against *Escherichia coli, Providencia aeruginosa, Pseudomonas azotogensis* and *Baccilus Subtillis* has been carried out by comparing with standard drug *streptomycin*. Some of the synthesized compounds possess good activity against *Escherichia coli* and *Baccilus Subtillis*.



Heterocyclic Letters 7: iss.-4 (2017), 1175-1183

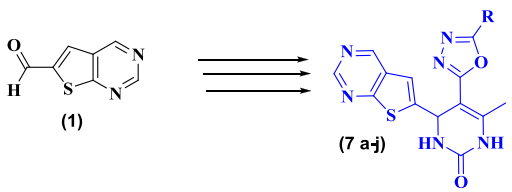
Design and Facile Method for Synthesis of Novel 1, 3, 4-Oxa diazole Derivatives by using Biginelli Reaction

Virupakshi Prabhakar[1*], Kondra Sudhakar Babu[2], L.K. Ravindranath[2],

[1]Faculty of Chemistry, IIIT ONGOLE, RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES-AP, INDIA,
[2] Department of Chemistry, Sri Krishnadevaraya University, Ananthapuramu, (A P), INDIA.
**Corres. Author E-mail:- viruchem765@gmail.com*

An efficient synthesis of 3,4-dihydropyrimidinones from the aldehyde, β-keto ester and urea in ethanol, using Zirconium tetrachloride as the catalyst. A new series of 6-methyl-4-(thieno[2,3-*d*]pyrimidin-6-yl)-5-(5-p-Substituted-1,3,4-oxadiazol-2-yl)-3,4-dihydropyrimidin-2(1H)-one derivatives (7a-j) were synthesized after refluxing 6-methyl-2-oxo-4-(thieno[2,3-d]pyrimidin-6-yl)-1,2,3,4-tetrahydropyrimidine-5-carbohydrazide (5) with different aromatic/Heterocyclic carboxylic acids (6a-j) in the presence of $POCl_3$.The chemical structures of these compounds were confirmed by various physico-chemical methods viz. IR, ^{1}H-NMR, EI-Mass, ^{13}C-NMR analysis.

Synthetic Scheme



Reagents and Reaction conditions: (a) $ZrCl_4$, Ethanol, reflux, Conc.HCl, 4-5hrs
(b) Hydrazine hydrate, Ethanol, Reflux, 16 hrs (c) $POCl_3$, Reflux, 6 hrs.

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REVIEWS

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Diverse Pharmacological Aspects of 2-Amino-4-Phenylthiazole Derivatives-A Review

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Thiazole derivatives are known for their wide range of biological activities such a cardiotonic, fungicidal, sedative, anaesthetic, bactericidal and anti-inflammatory. Among thiazole class of compounds 2-amino-4-arylthiazoles and their derivatives occupy a unique position. They have long been used as precursors for the synthesis of a series of other biologically active molecules. In this review article we wish to describe the various biological activities of 2-amino-4-arylthiazoles along with their synthetic methods..

PERSPECTIVE

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Diverse Methods for the Synthesis of Imines

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Imines are versatile starting compounds for the preparation of many nitrogen-containing organic compounds. Diverse methods for the synthesis of imines are discussed. This reaction takes place through a condensation of aldehydes or ketones with primary amines. It is found that acidic catalysts and solid surfaces are good stimulant for the preparation of imines. This reaction also proceeds in the absence of any catalyst.