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Graphical abstract

Paper-1	Heterocyclic Letters 13: iss.-1 (2023), 13-16

Samarium-Iodine-Mediated Reductive Amination of Polycyclic Benzylic Ketones

Aarif L. Shaikh[1] and Bimal Krishna Banik[2*]

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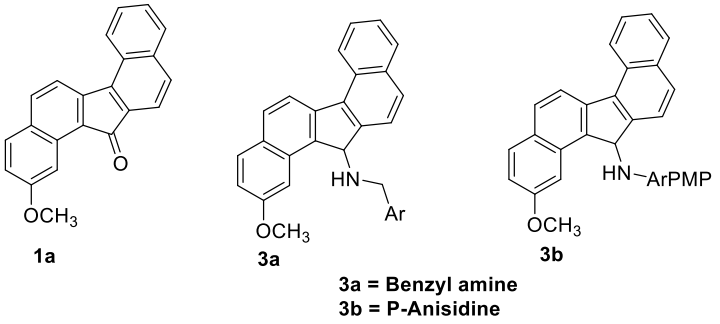

Paper-2	Heterocyclic Letters 13: iss.-1 (2023), 17-26

Computational Studies of Physicochemical Parameters on Optically Active Anticancer β-Lactams

Aparna Das[1*] and Bimal Krishna Banik[2*]

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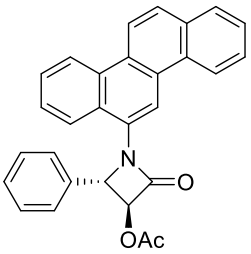
**Corresponding authors: Aparna Das, email: aparnadasam@gmail.com; Bimal Krishna Banik, email: bimalbanik10@gmail.com; bbanik@pmu.edu.sa*



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Paper-3	Heterocyclic Letters 13: iss.-1 (2023), 27-35

Synthesis, characterization and in vitro cytotoxicity of novel arylazo pyrazole derivatives

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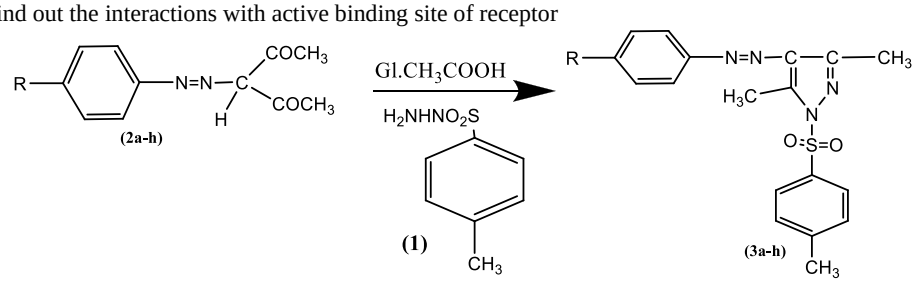
The title compounds 3,5-dimethyl arylazo pyrazole derivatives **(3a-h)** were synthesized by reacting oxobutyratederivatives **(2a-h)** with p-toluenesulfonyl hydrazide **(1)** in glacial acetic acid medium. All the new compounds were established on the basis of spectroscopic data and evaluated for in vitro cytotoxicity activity against MCF-7 and MDA-MB-231 human cell lines. Some of the tested compounds **3g, 3h** displayed moderate activity against both the cell lines. Molecular docking studies were carried out, in order to find out the interactions with active binding site of receptor



Paper-4	Heterocyclic Letters 13: iss.-1 (2023), 37-43

Eco Friendly Synthesis of Some Novel Dipyrano-Pyrrole Derivatives From Of 1-(2, 6-Dichloro-4- Trifluoromethyl-Phenyl)-Pyrrolidine-2,5-Dione.

Savita Chintaman Patil[a]*, Shankarsing Sardarsing Rajput[b], Rahebar Ali Mohammed Ali Sayyed[b]

[a]Department of Chemistry, SSVPS's L K Dr. P. R. Ghogrey Science College, Dhule (M. S), India
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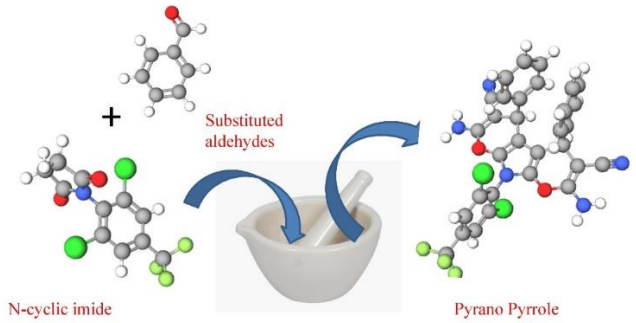
Mixture of N-phenyl succinimide derivatives, aromatic aldehydes, malononitrile and PbO nanoparticles were ground for half hour at a room temperature with a mortar and pestle. It follows ecofriendly method to give series of pyrano pyrrole derivatives. The synthesized compounds were characterized by spectral analysis and were successfully screened for their antimicrobial properties.



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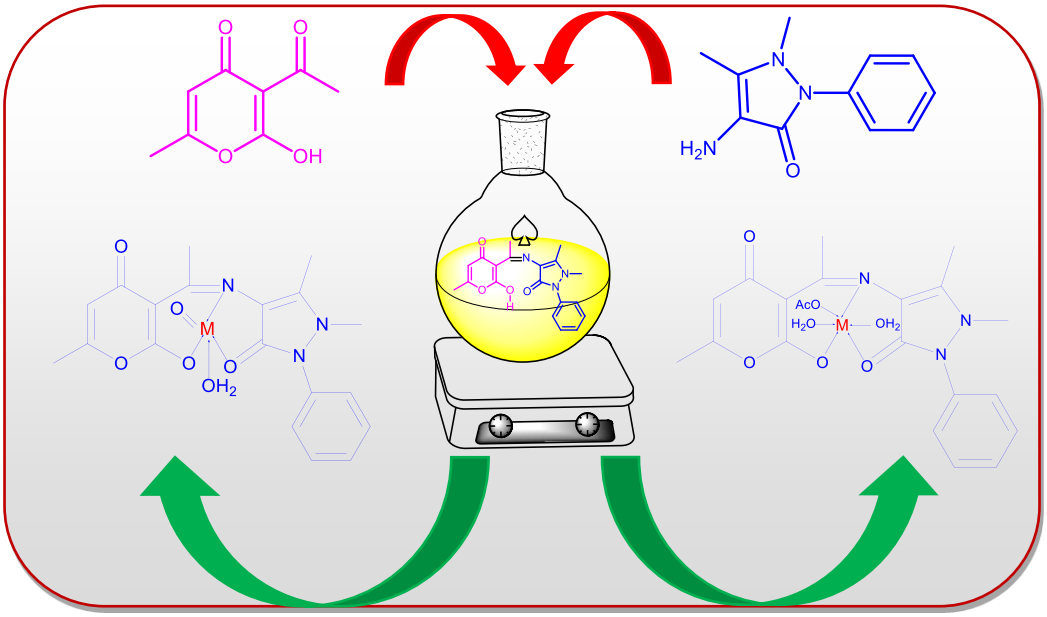
Paper-5	Heterocyclic Letters 13: iss.-1 (2023), 45-52

Synthesis, characterization and antibacterial studies of Ni[II], Co[II] acetate and VO[II] complexes of Schiff base ligand

Yogesh N. Bharate[a], Kuldeep B. Sakhare[b], Sanjeevan A. Survase[c], Mahadeo A. Sakhare[d]*

[a,b,c,d]* Department of Chemistry, Balbhim Arts, Science & Commerce College, Beed. 431122 (M.S.), India, E-mail: yogesh.bharate21@gmail.com

A series of Transition metal complexes of Ni[II], Co[II] and VO[II] have been synthesized from the Schiff base ligand (HEPP) derived from dehydroacetic acid and 4-aminoantipyrine.



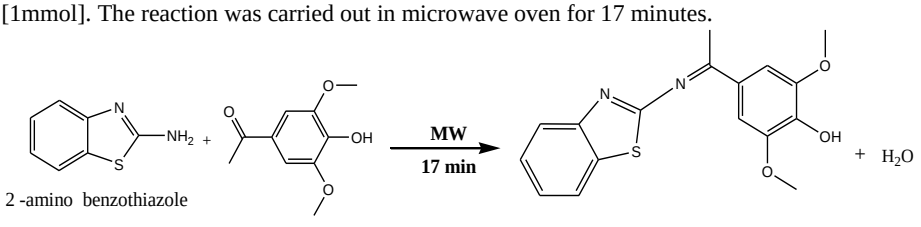
Paper-6	Heterocyclic Letters 13: iss.-1 (2023), 53-60

Synthesis, characterization and antibacterial activity of novel schiff base ligand and its metal complexes derived from 2 amino benzothiazole and 3,5-dimethoxy-4- hybroxyacetophenone.

S S Sonune[a], S P Moharir[b*], M G Undegaonkar[c], A S Kirdant[d].

[1,2]Department of Chemistry, Siddharth Art's, Commerce and Science College Jafrabad dist. Jalna.
[3]Department of Chemistry; ASC College Badnapur, Dist. Jalna (M.S) India.
[4]Department of Chemistry, Vasant college kaij, Dist. Beed (M.S) India.
Corresponding author: sharad9939moh@gmail.com.

The Schiff base has been synthesized by using 2-amino benzothiazole [1mmol] and 3,5-dimethoxy-4-hydroxy acetophenone [1mmol]. The reaction was carried out in microwave oven for 17 minutes.



2 -amino benzothiazole

3',5'-Dimethoxy-4'-hydroxyacetophenone

4-(1-(benzo[*d*]thiazol-2-ylimino)ethyl)-2,6-dimethoxyphenol

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Paper-7	Heterocyclic Letters 13: iss.-1 (2023), 61-69

Synthesis of 2-(tetrazolo[1,5-a]quinolin-4-ylmethylthio)benzo[d]thiazole and its derivatives as antimicrobial agent

M. Dhange[a], S. Patwari[b], B. Madje [c], D. Rajani [d], R. Pokalwar[a*]

[1]*Department of chemistry, Degloor College Degloor, Nanded-431717, Maharashtra India.*
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[4]*Microcare Laboratory and Tuberculosis Research Center, Surat-395003, Gujrat, India.*
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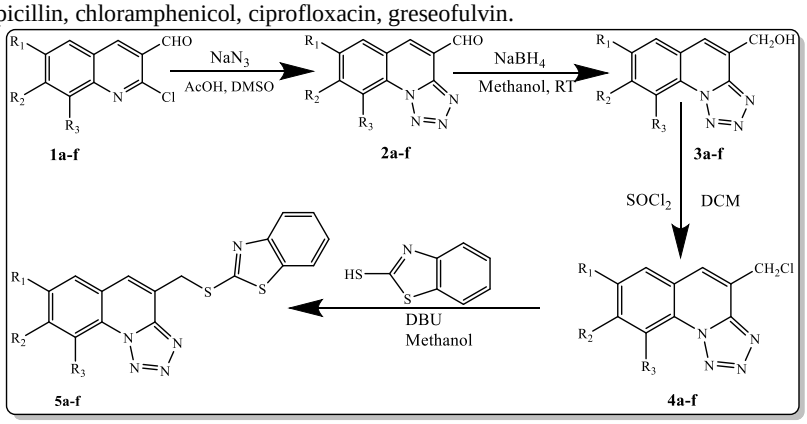
Synthesis of 2-(tetrazolo[1,5-a]quinolin-4-ylmethylthio)benzo[d]thiazole was carried out in simple steps at very mild reaction conditions using 2-chloroquinoline-3-carbaldehyde and Mercaptobenzothiazole as starting materials. The entire products formed were analyzed by H^1 NMR, IR, Mass for the confirmation. The product was tested for microbial activity. The derivative of (2-(tetrazolo[1,5-a]quinolin-4-ylmethylthio)benzo[d]thiazole) shows antibacterial and antifungal activity which is comparable to the existing drugs like ampicillin, chloramphenicol, ciprofloxacin, greseofulvin.



Paper-8	Heterocyclic Letters 13: iss.-1 (2023), 71-91

Synthesis, evaluation, and molecular docking studies of novel 1, 2, 3-triazole tethered indole hybrid derivatives as potent anti-cancer agents

Dharmasothu Veeranna[1], Lakavath Ramdas[1], Guguloth Ravi[1], Vishnu Thumma[2], Jadhav Ramchander[1*]

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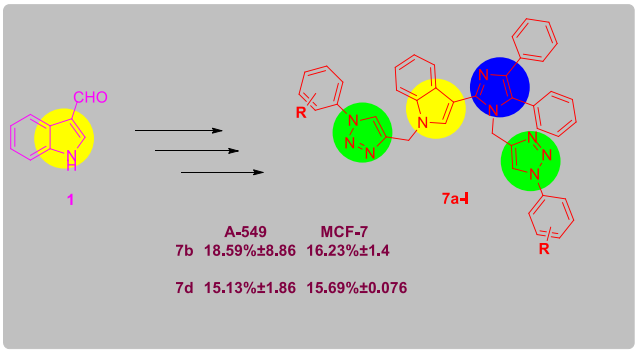
[2]*Department of Sciences and Humanities, Matrusri Engineering College, Hyderabad, Telangana – 500059, India.*
Corresponding author: *Jadhav Ramchander*
Email: ramorgchemou@gmail.com



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Paper-9	Heterocyclic Letters 13: iss.-1 (2023), 93-104

Antifungal Activity, Molecular Docking on COVID-19 Main Protease and Pharmacokinetics of Imidazolone Analogues

T.Vishnu[a], K.Sandhya[a], K.Aruna Kumari[a], Y.Aparna[a*]

[a]Department of Sciences and Humanities, Matrusri Engineering College, Hyderabad, Telangana, 500059, India
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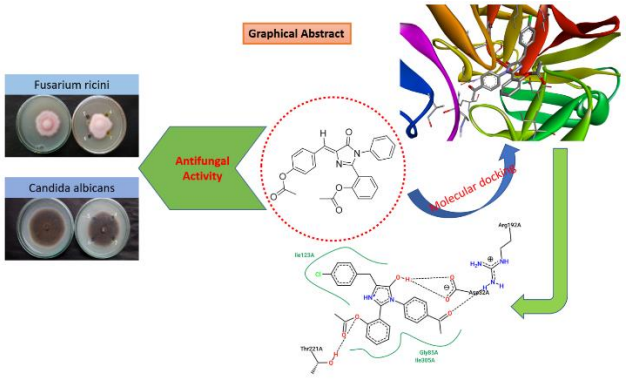
Eleven active imidazolone compounds were screened against two fungal species *candida albicans* and *fusarium ricini*by MIC assay and griseofulvin as standard reference. Insilico studies performed on SARs Cov2 main protease (M^{Pro}). The p-bromo, m-nitro, p-chloro, p-dimethyl amine substituted analogues exhibited outstanding MIC against both fungal strains compared to griseofulvin. Molecular docking studies on these compounds unravel the relative orientation, mode of interaction and nature of bonding with proteinase of Candida albicans and SARs Cov2 main protease. The pharmacokinetics evaluation performed by using SwissADME web server identified their more drug-likeness properties.



Paper-10	Heterocyclic Letters 13: iss.-1 (2023), 105-113

"Silica supported phosphotungstic acid as green heterogeneous catalyst for one pot synthesis of 1, 2-dihydro-1-arylnaphtho [1, 2-*e*] [1, 3] oxazine-3-ones"

Anil B Solunke[a], Mahesh P More[a], Sandip U Agare[a], Sandeep D Pardeshi[b], Jayant P Sonar[b] and Tanuja V Kadre[a*].

[a]Department of Chemistry, Dr. A. P. J. Abdul Kalam University, Indore, Madhya Pradesh, India 452016.
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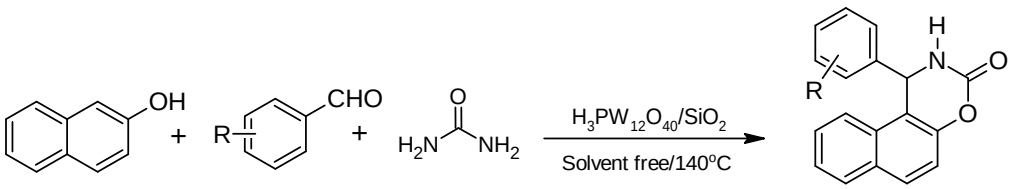
**Correspondence Author Email: tanujavkadre@gmail.com*

$H_3PW_{12}O_{40}/SiO_2$ is used as green catalyst for one pot three component synthesis of 1, 2-dihydro-1-arylnaphtho [1, 2-*e*][1, 3]oxazine-3-one using 2-naphthol, aromatic aldehyde and urea at 140°C. Then catalyst could be recovered and reused at least five times without any appreciable catalyst activity loss. The present procedure offers advantages such as short reaction time, reaction at neat condition, clean reaction, simple workup, recovery and reusability of the catalyst.



R= H, CH3, OH, OMe,
F, Cl, Br, NO2

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Paper-11 | Heterocyclic Letters 13: iss.-1 (2023), 115-127

Synthesis, characterization and in-silico studies of 1, 4-disubstituted 1, 2, 3-triazole 4-formyl benzoate

Nayana R[a], Krishnaswamy G*[a], Lubna Kouser[a], Nayana J[a], Manjushree G R[a], Kavya B[a], Lokesh P[a], Shivaraj G[a,b], Sreenivasa S[b,c] and Suresh D[a]

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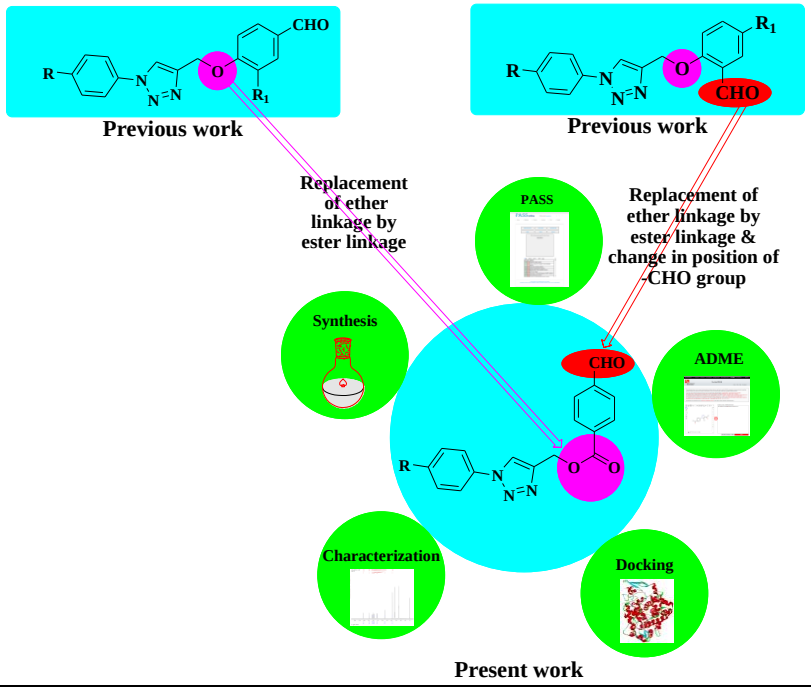
[b]*Department of Studies and Research in Chemistry, University College of Science, Tumkur University, Tumakuru-572 103, Karnataka, India*
[c]*Deputy Adviser, National Assessment and Accreditation Council, Bengaluru-560 072, Karnataka, India*
**Corresponding author (E-Mail: drkrishna23org@gmail.com)*

In continuation to our interest on 1, 2, 3-triazoles, in the present study we report the synthesis, characterization and *in-silico* studies of novel 4-formyl benzoate 1, 4-disubstituted 1, 2, 3-triazoles. The newly synthesised compounds structures were confirmed based on the spectroscopic data (^{1}H & ^{13}C NMR) and were in good agreement with the assigned structures. All the compounds possess “drug like” properties with low toxicity and may act as antimycobacterial agents.



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Paper-12 | Heterocyclic Letters 13: iss.-1 (2023), 129-136

Synthesis, characterization and antifungal activity of coordination polymers based on 5-chloromethyl-8-hydroxyquinoline and ciprofloxacin derivatives

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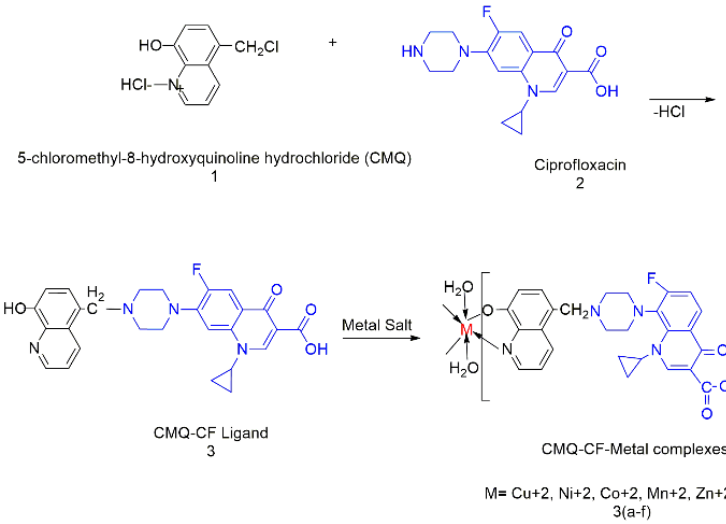
bGovernment Science College, Limkheda, Dist. Dahod, India.
**E-mail: patelswati1501@gmail.com*

A novel ligand namely 1-cyclopropyl-6-fluoro-7-(4-((8-hydroxyquinolin-5-yl)methyl)piperazin-1-yl)-4-oxo-1,2,3,4-tetrahydroquinoline-3-carboxylic acid (CMQ-CF) and its metal coordination polymers are prepared and characterized by using various spectral techniques and TGA studies. All the synthesized compounds are screened for antifungal activity and favourable results are obtained.



5-chloromethyl-8-hydroxyquinoline hydrochloride (CMQ)
1

Ciprofloxacin
2

CMQ-CF Ligand
3

CMQ-CF-Metal complexes

M= Cu+2, Ni+2, Co+2, Mn+2, Zn+2, Cd+2
3(a-f)

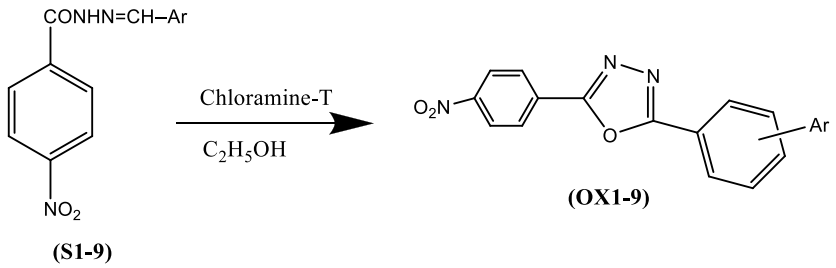
Paper-13 | Heterocyclic Letters 13: iss.-1 (2023), 137-142

Chloramine-T mediated synthesis of novel 1,3,4-oxadiazole derivatives

K. Dhanya B.C. Revanasiddappa*

**Department of Pharmaceutical Chemistry, NGSM Institute of Pharmaceutical Sciences (NGSMIPS), Nitte (Deemed to be University), Mangalore-575018, (Karnataka) India*
Email: revan@nitte.edu.in

A novel series of 1,3,4-oxadiazole derivatives **(OX1-9)** were synthesized by reacting Schiff bases **(S1-9)** and Chloramine-T in alcohol medium. All the new compounds were characterized on the basis of IR, ^{1}H-NMR, Mass spectral data.



(S1-9)

(OX1-9)

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Paper-14 | Heterocyclic Letters 13: iss.-1 (2023), 143-156

Design, synthesis of N-(4-(3-bromophenyl)thiazol-2-yl)-1-azaheteryl carboxamides and their anticancer evaluation against mcf-7 cell line

V. Krishna Chaitanya[a,e], P. Jalapathi*[b], M. Ravi Chandar[c], T. Vishnu[d]

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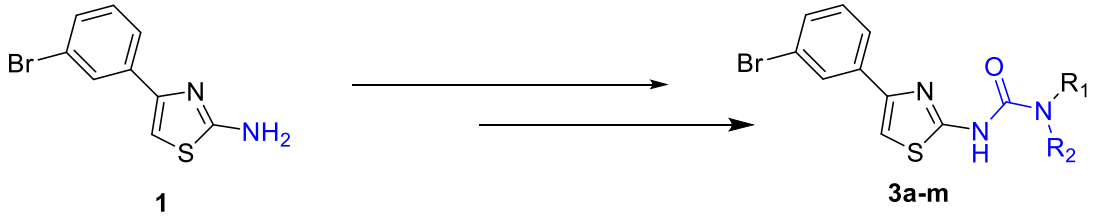
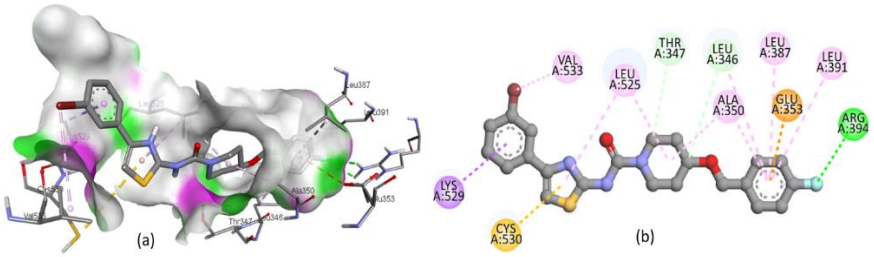
[*b]*Department of Chemistry, Osmania University, Hyderabad, 500007, Telangana, India.*
[c]*Department of Chemistry, Mahatma Gandhi Institute of Technology, Hyderabad, 500075, Telangana, India.*
[d]*Department of Sciences and Humanities, Matrusri Engineering College, Hyderabad, 500059, Telangana, India.*
[e]*Chemveda Life Sciences Pvt Ltd., IDA Uppal Hyderabad, 500039, Telangana, India.*
**Corresponding author email: pochampalli.ou.chemi@gmail.com*

N-(4-(3-bromophenyl)thiazol-2-yl)-1-azaheteryl carboxamides were synthesized by a three component reaction of 2-aminothiazole, various substituted piperazine or piperidines and triphosgene in presence of triethylamine. Evaluated their anticancer activity against MCF-7 cell lines.





Paper-15 | Heterocyclic Letters 13: iss.-1 (2023), 157-164

Lemon juice: greener approach for one pot, three components synthesis of benzthiazole-based betti bases

Julekha A. Shaikh*

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**Corresponding author Email: shaikhjulekha@maharashtracollege.org*

Eco-friendly route for synthesis of 1-[(Benzothiazol-2-ylamino)-aryl-methyl]-naphthalen-2-ol derivatives at 80 °C using lemon juice as a catalyst has been developed.

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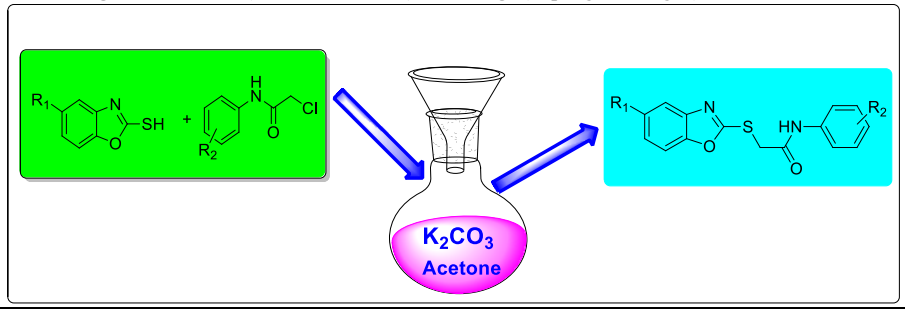
Paper-16 | Heterocyclic Letters 13: iss.-1 (2023), 165-176

Synthesis, characterization and microbial studies of benzoxazole clubbed thiol derivatives

Jasmin Kumbhani[a]*, Hasit Vaghani[b]*, Shweta Patel[b], Sarika Patel[b] and Parimal Chatrabhuji[c]

[a]*M B Patel Science College, Department of Chemistry, S P University, Anand-388001, Gujarat, India*
[b]*Faculty of Science, Mehsana Urban Institute of Sciences, Department of Chemistry, Ganpat University,Kherva,Mehsana-384012,Gujarat, India*
[c]*Pramukh swami Science and H D Patel Arts College, Department of Chemistry, HNGU, Kadi-382715, Gujarat, India*
**Correspondence: jasmin_kumbhani@yahoo.co.in , hvv01@ganpatuniversity.ac.in*

The lead compounds 2-(5-nitrobenzo[d]oxazol-2-yl-thio)-N-arylacetamide Derivatives $4_{a\text{-}n}$ and 2-(5-methylbenzo[d]oxazol-2-yl-thio)-N-arylacetamide $4_{aa\text{-}an}$ were synthesised by three steps. The target molecules were confirmed by means of various spectral analytical techniques like IR, ^{1}H NMR, ^{13}C NMR, Elemental analysis and mass spectrum. The antimicrobial properties of the synthesized derivatives measured. Their ZOI values were evaluated by using the diffusion method against Gram-positive bacteria (*Bacillus subtilis)*, Gram-negative bacteria (*Escherichia coli)* and fungi (*Aspergillus niger)*.

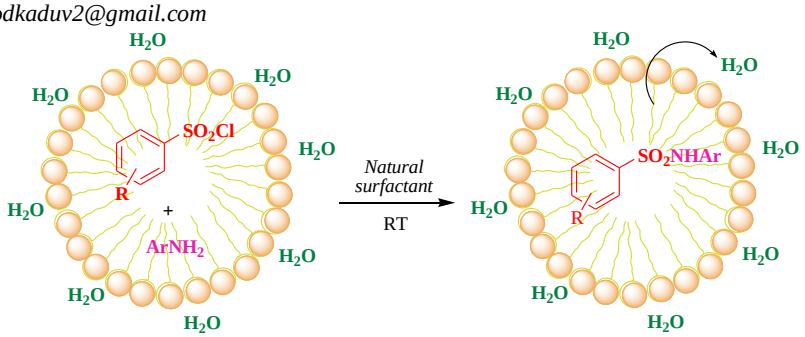


Paper-17 | Heterocyclic Letters 13: iss.-1 (2023), 177-184

Aqueous *Balanites Roxburghii*: a clean and green biocatalyst for synthesis of Sulfonamides

Vinod R. Kadu[a*], Gajanan R. Pandhare[b], Somnath S. Gholap[c] and Amol K. Kharde[a]

[a]*Department of Chemistry, Arts, Science and Commerce College, Kolhar, Tal.- Rahata, Dist.- Ahmadnagar, Pin-413712 (MS), India.*
[b]*Post graduate Department and Research centre, Padmashri Vikhe Patil College, Pravaranagar, A/P-Loni kd, Tal.- Rahata, Dist.- Ahmadnagar, Pin-413713 (MS), India.*
[c]*Department of Chemistry, Arts, Commerce and Science College, Rahata, Tal.- Rahata, Dist.- Ahmadnagar, Pin-423107 (MS), India.*
*Correspondence: *vinodkaduv2@gmail.com*



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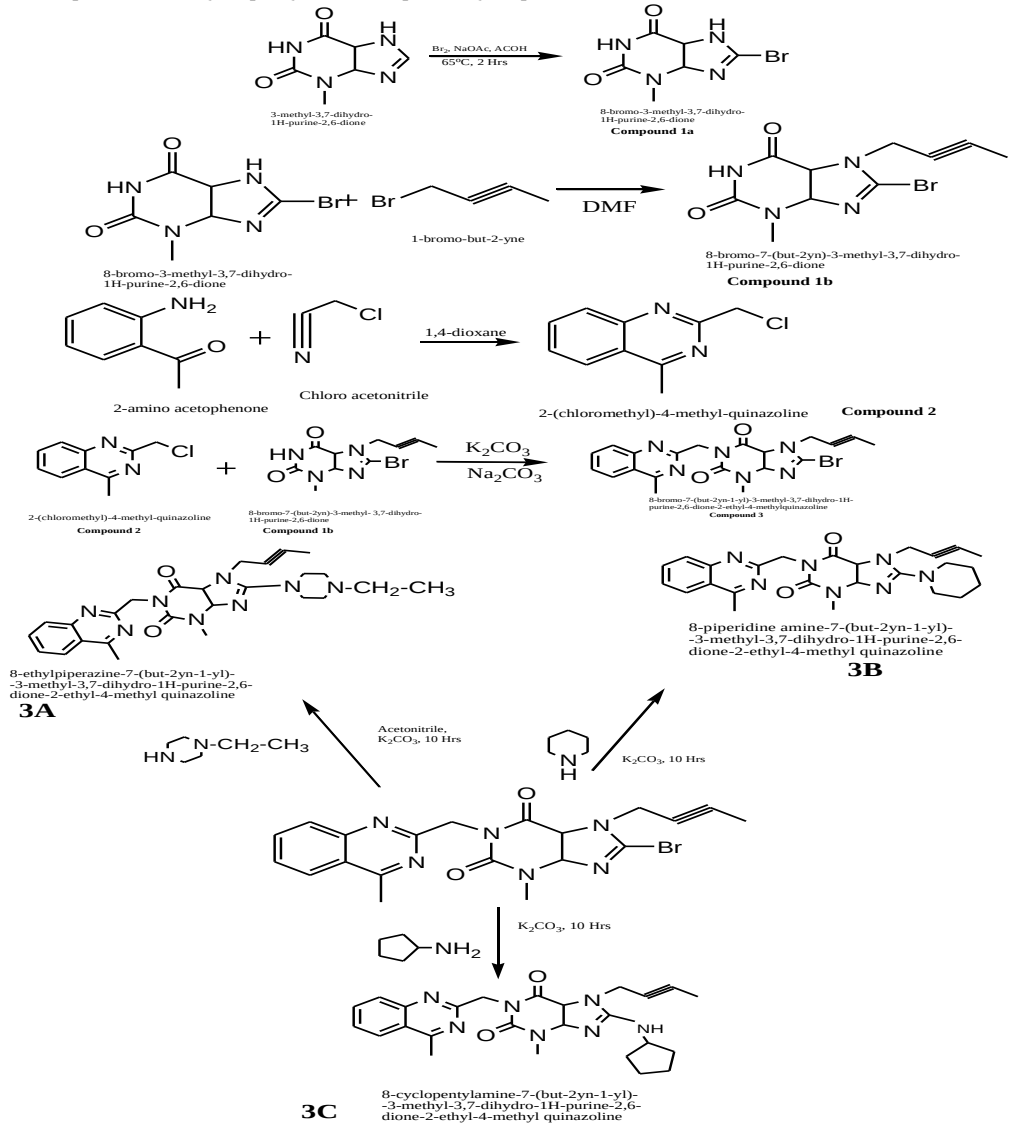
Paper-18 | Heterocyclic Letters 13: iss.-1 (2023), 185-203

Quinazoline- Purine Derivatives as Antidiabetics: Synthesis, *In-Silico* and *In-Vitro* Evaluation.

Faruk Alam[a], Durgaprasad Kemisetti[a*], Biplab Kumar Dey[a],Parameshwar R[b], Chandrasekar MJN[c], and Afzal Azam[c]

[a] *Faculty of Pharmaceutical Scoence, Assam down town University, Guwahati, Assam, India*
[b]*Department of Pharmaceutical Chemistry, Amity Institute of Pharmacy, Amity University, Gwalior, Madhya Pradesh, India*
[c] *College of Pharmacy, J.S.S University, Ooty, Tamilnadu, India*
**Corresponding author Email: kdp251999@gmail.com*

Synthesis: ***8-bromo-7-(but 2 yn -1yl)-3-methyl-3,7-dihydro1H-purine-2,6-dione-2-ethyl-4-methyl quinazoline*** **(3)** was synthesized by the steps presented in the scheme. The derivatives were synthesized namely 3A, 3B and 3C by reacting with N-ethyl piperazine, Piperidine and cyclopentylamine respectively in presence of Potassium carbonate for 10 hrs.



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Paper-19	Heterocyclic Letters 13: iss.-1 (2023), 205-215

"Microwave assisted mg(otf)$_2$.sio$_2$ catalysed synthesis of some heterocyclic sulfonate and sulfonamide bearing quinoline motif"

Mahesh P More[a], Anil B Solunke[a], Sandip U Agare[a], and Tanuja V Kadre[a*].

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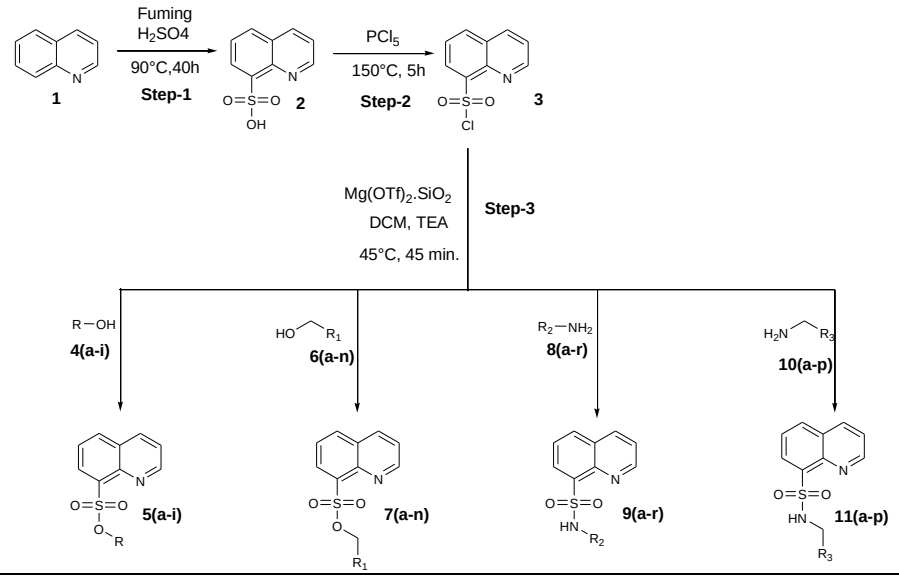
An efficient green route for the synthesis of quinoline sulfonates by reaction of 8-Quinoline sulfonyl chloride (QSC) with Phenol/Benzyl Alcohol/Alcohol while sulfonamides by reaction of Quinoline sulfonyl chloride (QSC) with Aniline/Benzylamine/Amines has been developed under microwave irradiation using Mg(OTf)$_2$.SiO$_2$ as a heterogeneous catalyst. Characterization of prepared molecules was carried out with the help of analytical techniques including MP, MS, ^{1}H-NMR etc.



REVIEW

Review No.1	Heterocyclic Letters 13: iss.-1 (2023), 217-227

A review on synthesis of chalcone derivatives using non-conventional methods.

Alvarez-Ramirez Magdalena[1], Figueroa-Valverde Lauro[2,*], Rosas-Nexticapa Marcela[2], Mateu-Armad Maria Virginia[2], Díaz-Cedillo Francisco[3],

Laboratory of Pharmaco-Chemistry at the Faculty of Chemical Biological Sciences from the University Autonomous of Campeche,

The aim of this research was to characterize some non-conventional method for synthesis of chalcone derivatives using some scientific information systems.