*Heterocyclic Letters*
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# Graphical Abstract

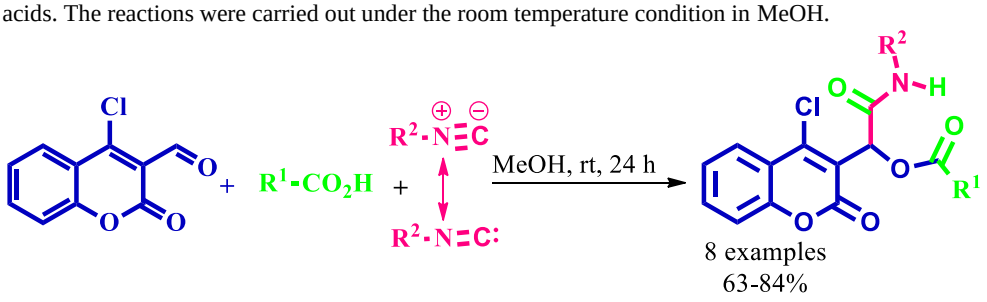
| Paper-1 | Heterocyclic Letters 11: iss.-1 (2021), 11-18 |
|---|---|

**Efficient Synthesis Of Coumarin-Based α-Acyloxy Amides As Promising Starting Materials For Diverse Post-Condensation Reactions**

**Abdolali Alizadeh*, Behnaz Farajpour**

*Department of Chemistry, Tarbiat Modares University, P.O. Box 14115-175, Tehran, Iran*
*E-mail: aalizadeh@Modares.ac.ir, abdol_alizad@yahoo.com*

A series of coumarin-based α-acyloxy amides compounds containing chromene skeleton have been synthesized through the Passerini three-component reaction strategy, from 4-chloro-2-oxo-2*H*-chromene-3-carbaldehyde, isocyanides, and carboxylic acids. The reactions were carried out under the room temperature condition in MeOH.




| Paper-2 | Heterocyclic Letters 11: iss.-1 (2021), 19-23 |
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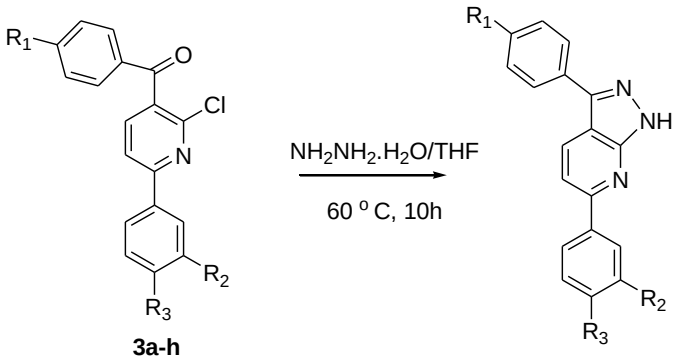
**Microwave-Induced Suzuki-Coupling Toward Pyrazoles**

**Ashutosh Pal* and Bimal Krishna Banik***

*[1]Raja Peary Mohan College, West Bengal, India; [2]Department of Mathematics and Natural Sciences, College of Sciences and Human Studies, Deanship of Research; Prince Mohammad Bin Fahd University, Al Khobar, Kingdom of Saudi Arabia; Email: ashupal33@gmail.com; bimalbanik10@gmail.com; bbanik@pmu.edu.sa*




$R_1$ = 4-$CO_2$Et, 4-OEt, 4-OMe, 4Br
$R_2$ = 3-NHAC, $R_3$ =H,
$R_2$ =H, $R_3$ = 4-$CO_2$Et

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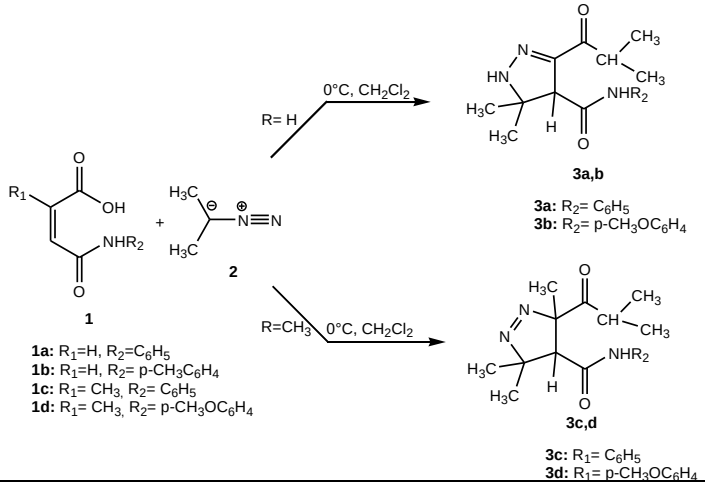
| Paper-3 | Heterocyclic Letters 11: iss.-1 (2021), 25-29 |
|---|---|

**New application of swern oxidation: Preparation of 2-pyrazolines with ‘‘activated’’ dmso**

**Naoufel Ben Hamadi[a,b,*], W. Abd El-Fattah[b], AhlemGuesmi[b]**

[a] *Laboratory of Synthesis Heterocyclic and Natural Substances, Faculty of Sciences of Monastir, , Boulevard of Environment, 5000 Monastir, Tunisia.*
[b] *Chemistry Department, College of Science, IMSIU (Imam Mohammad Ibn Saud Islamic University), Riyadh 11623, kingdom of Saudi Arabia.*

1,3-Dipolar cycloaddition of 2-diazopropane **2** to conjugateddi-substituted alkenes**1** is taking place regiospecifically to give five membered heterocyclic ring **3**. The oxidation of 2-pyrazolines **3a,b** with dimethylsulfoxide and oxalyl chloride under Swern conditions led to a pyrazolenines **5a,b**.



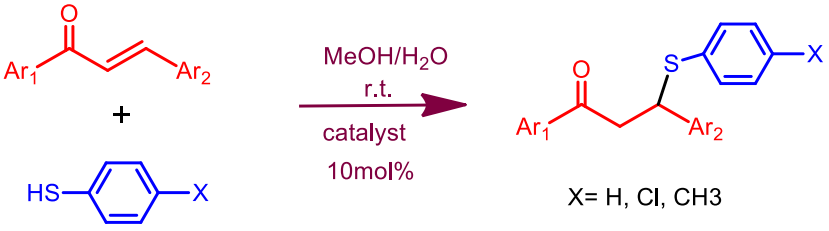

| Paper-4 | Heterocyclic Letters 11: iss.-1 (2021), 31-38 |
|---|---|

**Metal Proline complex catalyzed Michael reactions of mercaptans to chalcones in aqueous media**

**Anand Mohan Jha*, Sanjeev Kumar Jha**

*Department of Chemistry, M. L. T. College, Saharsa, (B. N. Mandal University Madhepura), Bihar- 852201, India.*
Email: amjha6182@gmail.com

Metal complexes of proline were developed and found to catalyze the Michael addition reaction of mercaptans and chalcone in aqueous medium at room temperature. Michael adducts with up to 90% yield were obtained under mild reaction conditions in the presence of efficient metal proline complexes as catalyst.



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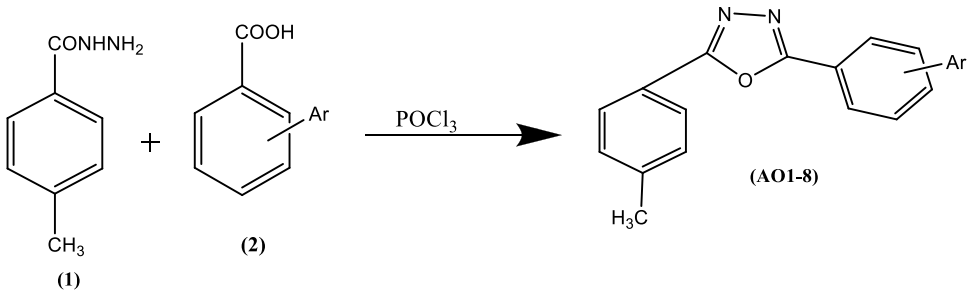
| Paper-5 | Heterocyclic Letters 11: iss.-1 (2021), 39-44 |
|---|---|

**Antioxidant evaluation of new 1,3,4-oxadiazole derivatives**

**Banylla Felicity Dkhar Gatphoh, B.C. Revanasiddappa***

**Department of Pharmaceutical Chemistry, NGSM Institute of Pharmaceutical Sciences of Nitte -Deemed to be University, Paneer, Deralakatte, Mangalore-575 018,Karnataka, India*
*Email: revan@nitte.edu.in*

A new series of 1,3,4-oxadiazoles **(A01-8)** were synthesized by reacting p-toluic hydrazide and aromatic acids in presence of $POCl_3$. All the new compounds were evaluated for *In-Vitro* antioxidnat activity and the structures were assigned on the basis of spectral data.



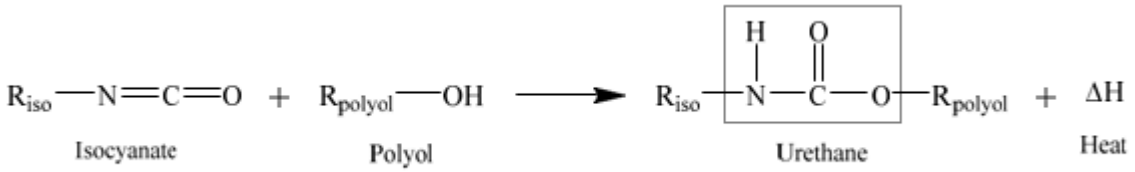

| Paper-6 | Heterocyclic Letters 11: iss.-1 (2021), 45-52 |
|---|---|

**Synthesis and characterisation of novel crosslinked biopolyurethane from cotton seed oil as eco-friendly bio-degradable material**

**Sumathi S[1] , J. Shakina[2]**

*[1]Department of Chemistry, Sarah Tucker College (Autonomous), Tirunelveli-627011, Affliated to Manonmaniam Sundaranar University,Tirunelveli,Tamilnadu, India.*
*[2]Assistant Professor,Department of Chemistry, Sarah Tucker College (Autonomous), Tirunelveli 627011, Affliated to Manonmaniam Sundaranar University,Tirunelveli,Tamilnadu, India.*
*Corresponding author: Email s.sumathi245@gmail.com Mobile: 8754152275*

PUs are polymers that are formed by the reaction between the OH (hedroxyl) groups of a polyol with the NCO (isocyanate functional group) of an isocyanate, and the name is associated with the resulting urethane linkage. This reaction is exothermic, and leads to the production of urethane groups as described before and illustrated in scheme.



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| Paper-7 | Heterocyclic Letters 11: iss.-1 (2021), 53-58 |
|---|---|

**Majid Shaikh[a], Mujahed Shaikh,[a] , Anis Ahmed Sheikh,[a] Sayyad Sultan Kasim*[a]**

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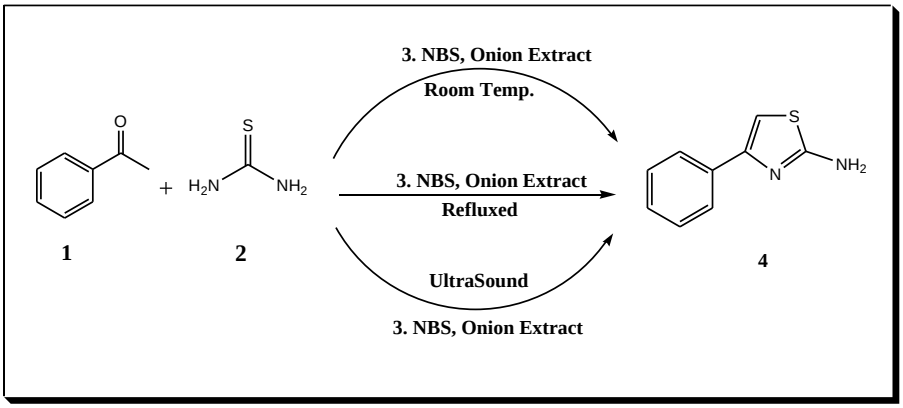
*Email Id (Corresponding author):1) sayyadsultankasim@gmail.com*
*2) mjid.orchid@rediffmail.com*

The development of greener synthetic strategies have attracted much attention of researchers for last 25 years. The thiazole having versatile applications in pharmaceutical, agriculture and industrial fields required easy and fruitful method. In this research paper, we have introduced the novel, green and cost effective protocol for the synthesis of most important thiazole moiety by using onion extract as efficient solvent. The synthesis has been performed by reaction between acetophenone and N-BromoSuccinamide in onion juice medium followed by addition of thiourea. The easy work up ,shorter reaction time , environmentally benign and good to excellent yield of product, are some specific features of this protocol. The results obtained are tabulated.



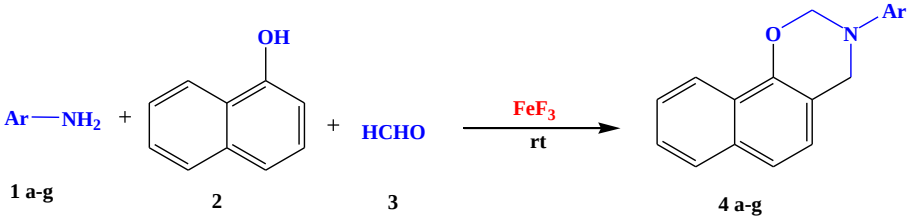

| Paper-8 | Heterocyclic Letters 11: iss.-1 (2021), 59-62 |
|---|---|

**$FeF_3$ mediated synthesis of 3,4-dihydro-3-pyridyl-2*h*-naphtha[2,1-*e*][1,3]oxazine derivatives**

**Shashikala K[a], Praveena D[b], Ramesh M[c] and Laxminarayana E*[b]**

*[a]Geethanjali College of Engineering and Technology, (Autonomous) Cheeryal, Keesara, Hyderabad, Telangana*
*[b]SR University, Warangal Urban-506 371, Telangana, India.*
*[c]Jawaharlal Nehru Technological University Kakinada, Kakinada, Andhra Pradesh, 533003,India*
*[d]Sreenidhi Institute of Science and Technology (Autonomous) Yamnampet, Ghatkesar, Hyderabad Telangana*
*Email: elxnkits@yahoo.co.in*

Biologically active 3,4-dihydro-3-substituted-2H-naphtho [2,1-e][1,3] oxazine derivatives were synthesized using environmentally benign and economically feasible Lewis acid $FeF_3$. They are characterized by FT-IR, HNMR and Mass spectroscopic methods.



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| Paper-9 | Heterocyclic Letters 11: iss.-1 (2021), 63-72 |
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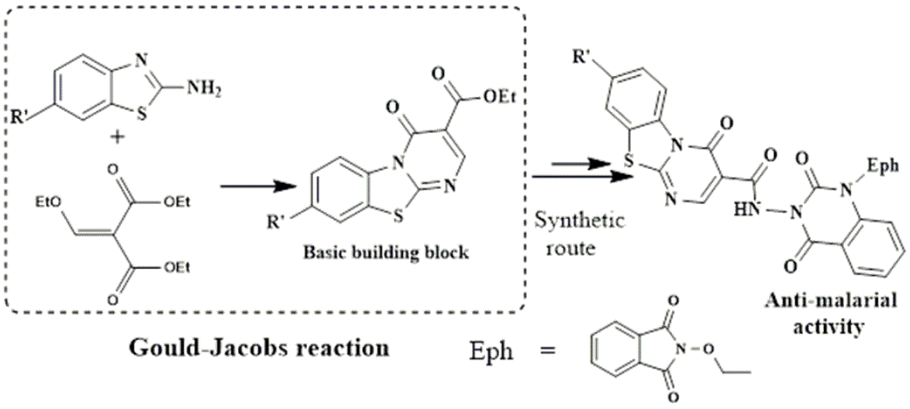
**Synthesis of Biologically Potent Alkoxyphthalimido Plugged N-(2,4-dioxo-1,4-dihydroquinazolin-3(2*H*)-yl)-4-oxo-4*H*-benzo[4,5]thiazolo[3,2-a]pyrimidine-3-carboxamide *via* Gould Jacobs Reaction**

**Prakash Prajapat[a*], *Venkata Narayana Pappula*[a],Hasit Vaghani[a], Shikha Agarwal[b], Jayanti Samota[b] and Ganpat L. Talesara[b]**

[a]*Faculty of Science, Department of Chemistry, Ganpat University, Mehsana-384012, Gujarat, India*
[b]*Faculty of Science, Department of Chemistry, M. L. S University, Udaipur-313001, Rajasthan, India*
**Email: psp04@ganpatuniversity.ac.in*




| Paper-10 | Heterocyclic Letters 11: iss.-1 (2021), 73-78 |
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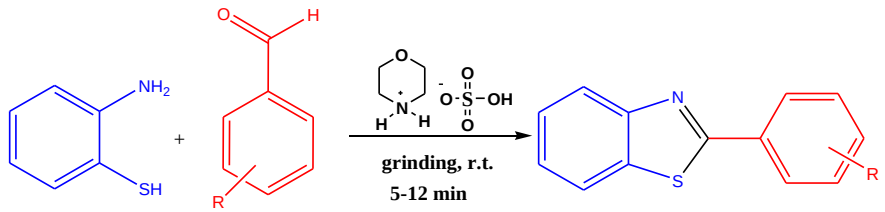
**A Reusable Morpholinium Bisulfate Promoted Synthesis of 2-Arylbenzothiazoles Derivatives under Grind-stone Method**

**Kabeer A. Shaikh[2]* and Uddhav N. Chaudhar[1]**

[1]*Department of Chemistry, Kalikadevi Art's, Science & Commerce College, Shirur (Ka.) Dist. Beed-413 249 [M.S.]-India.*
[2]*P. G. Department of Chemistry, Sir Sayyed College of Art's, Commerce & Science, Aurangabad-431 001 [M.S.]-India*
E-*mail authors: shaikh_kabeerahmed@rediffmail.com/uddhav21@gmail.com*

In this protocol, we have synthesized the 2-arylbenzothiazoles using highly inexpensive, reusable and mild morpholinium bisulfate [morH][$HSO_4$] ionic liquid as a catalyst with the condensation reaction of 2-aminothiophenol and aromatic aldehydes under grind-stone method. The use of highly efficient with high catalytic activity is one more advantages of this protocol.



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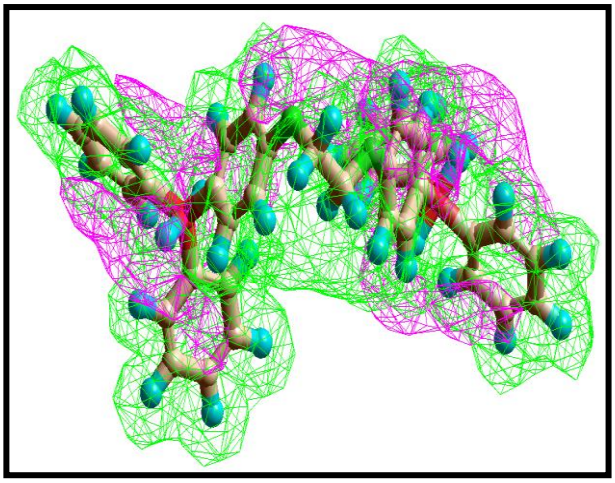
Paper-11 | Heterocyclic Letters 11: iss.-1 (2021), 79-85

**Theoretical and Weight Loss Studies of Polyethylene Glycol Triphenyl Phosphine as Corrosion Inhibitor for Carbon Steel in Sulphuric Acid**

**Hemlata Vashisht, Ompal Singh Yadav, Vandana Sharma and Reena Jain***

*Department of Chemistry, Kirori Mal College, University of Delhi, Delhi-110007*
*Department of Chemistry, Shyam Lal College, University of Delhi, Delhi-110032*
*Department of Environmental Studies, DeenDayalUpadhyaya College, University of Delhi, Delhi-110078*
*Department of Chemistry, Hindu College, University of Delhi, Delhi-110007*
*****Email: *reenajain_70@yahoo.co.in*

The Polyethyleneglycol Triphenyl phosphine **(**PEGTPP) was observed to be an efficient inhibitor for carbon steel corrosion in acidic sulphuric acid medium with the help of quantum chemical calculations and weight loss methods. High surface coverage on metal surface was revealed by the inhibition efficiencies at different concentrations of inhibitor. Corrosion rates are controlled to an apparent level in the presence of inhibitor into the corrosive medium. With increase in the concentration, the degree of adsorption of inhibitor molecules increases on carbon steel increases. The inhibition efficiency decreases with temperature. The negative values of binding energies and the heat of formation suggest that PEGTPP molecules are very stable and less prone to decompose. This paper presents a general review of the inhibitive action of Polyethyleneglycol triphenyl phosphine against corrosion of carbon steel



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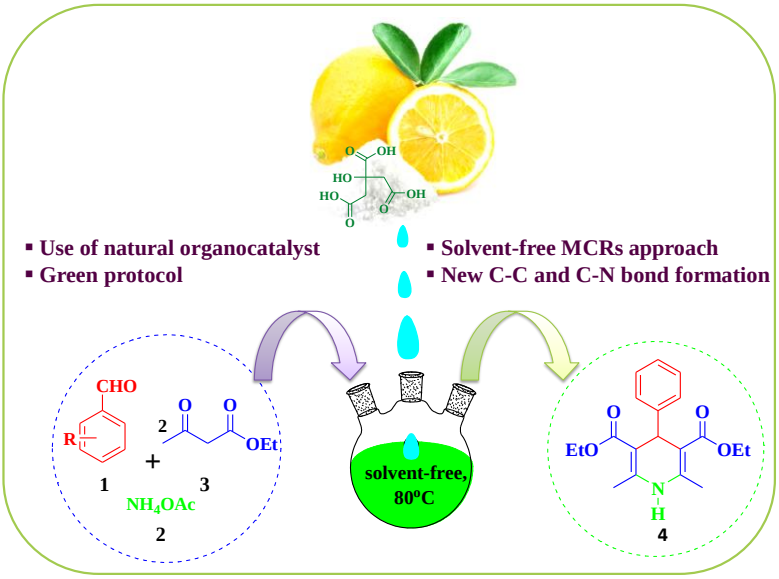
| Paper-12 | Heterocyclic Letters 11: iss.-1 (2021), 87-96 |
|---|---|

**Citrus lemon juice mediated a cost effective one pot efficient synthesis of 1, 4-dihydropyridines**

**Anil G. Gadhave[1], Vijay A. Kadnor[2], Gopinath D. Shirole[3], Bhagwat K. Uphade[1]***

*[1]Department of Chemistry and Research Center, Padmashri Vikhe Patil College of Arts, Science and Commerce, Pravaranagar, Pincode-413713.*
*(Affiliated to Savitribai Phule Pune University, Pune)*
*[2]Department of Chemistry, Arts, Commerce and Science College, Satral, Pincode-413711.*
*[3]Department of Chemistry, Arts, Science and Commerce College, Rahata, Pincode-423107*
*E-mail author:bhagwatuphade@gmail.com*



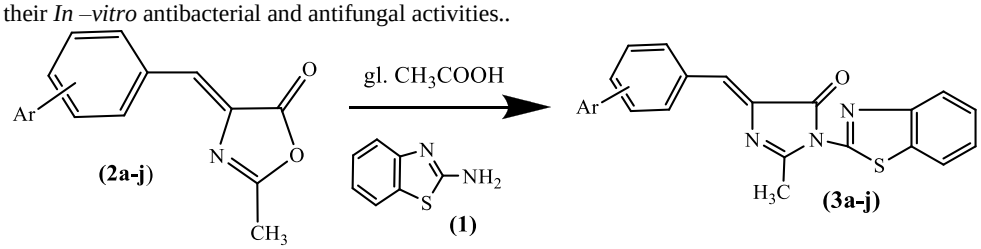

| Paper-13 | Heterocyclic Letters 11: iss.-1 (2021), 97-100 |
|---|---|

**Synthesis and biological evaluation of some new benzothiazole embedded imidazolinone derivatives**

**Jasmine Kalsi, B.C. Revanasiddappa***

**Department of Pharmaceutical Chemistry, NGSM Institute of Pharmaceutical Sciences of Nitte -Deemed to be University, Paneer, Deralakatte, Mangalore-575 018,Karnataka, India*
*Email: revan@nitte.edu.in*

2-Aminobenzothiazole **(1)** reacts with oxazolones **(2a-j)** in glacial acetic acid medium to yield the title compounds Imidazolinone derivatives **(3a-j)**. The new compounds were assigned on the basis of spectral data. All the newly synthesized compounds were evaluated for their *In –vitro* antibacterial and antifungal activities..



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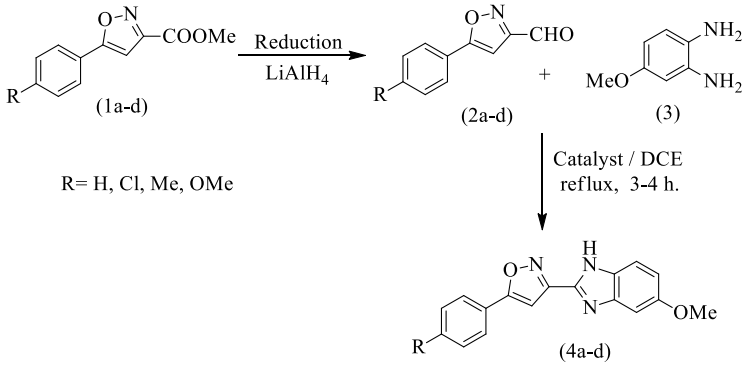
| Paper-14 | Heterocyclic Letters 11: iss.-1 (2021), 101-104 |
|---|---|

**Novel synthesis of phenyl isoxazol-3-yl-5-methoxy-1H-benzoimidazole and its substituted derivatives**

**Anil Chidrawar**

*Research Center & P G Department of Chemistry, Degloor College, Degloor- 431717*
*S.R.T.M.U, Nanded. Maharashtra, India.*
*Email :* anilchidrawar74@gmail.com

Methyl 5-(4-substituted phenyl)isoxazole-3-carboxylate (1a-c) on reduction with $LiAlH_4$ gives 5-(4-substituted phenyl)isoxazole-3-carbaldehyde (2a-d). Which on refluxed with 4-methoxy benzene-1,2-diamine (3) in presence of DCE as a catalyst for 3-4 hours to obtain number of substituted derivatives of phenyl isoxazol-3-yl-5-methoxy-1H-benzoimidazole(4a-d) in very good yields.




| Paper-15 | Heterocyclic Letters 11: iss.-1 (2021), 105-110 |
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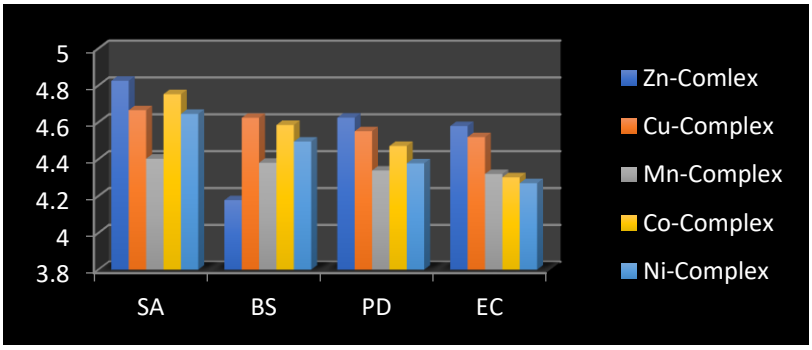
**Synthesis and Biological Evaluation of Mixed Ligand Complexes Derived From Azo Dye and 2-Amino-4-Nitrophenol Using Transition Metal Ions**

**Manisha Sharma*and D Sharma**

*Department of Chemistry, Jaipur National University,*
*Jaipur 302017, Rajasthan*
**Email:* sharmamani21@gmail.com

Present communication deals with synthesis, characterization and antimicrobial screening of mixed ligand complexes derived from 2, 4-dimethyl-3-arylazo-6-thiopyrimidine and 2-amino-4-nitrophenol using transition metal ions viz. Mn(II), Co(II), Ni(II), Cu(II) and Zn(II). The characterization of these synthesized complexes has been carried out with the help of spectral techniques such as IR, $^1$H-NMR and electronic spectra. The antimicrobial activities carried out on the derived complexes reveal that all these complexes are biologically active against *Bacillus subtilis*, *Staphylococcus aureus*, *Escherichia coli* and *Pseudomonas diminuta*.




**Anti-microbial screening results of mixed ligand complexes (Y-axis accounts for –log MIC values in µg/ml)**

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## Reviews

| Review -1 | Heterocyclic Letters 11: iss.-1 (2021), 111-130 |
|---|---|

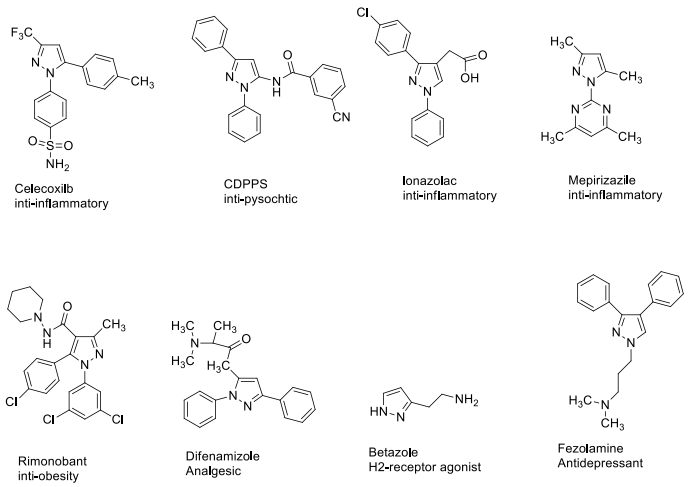
**Short review on pharmacological characteristics and synthesis of pyrazole**

**Nadia Ali Ahmed Elkanzi[a,b*], F.M.Zahou[c]**

[a]*Chemistry Department, College of Science, Jouf University, P.O. Box: 2014, Sakaka, Saudi Arabia*
[b]*Chemistry Department, Faculty of Science, Aswan University, P.O. Box: 81528, Aswan, Egypt*
[c] *Biology Department, college of Science, Jouf University, sakaka , 2014, Saudi Arabia*

**e-mail: kanzi20@yahoo.com*

This review show pharmacological activity ,synthesis and biological activity of heterocyclic compounds containing pyrazole nucleus




pharmaceutical drugs containing pyrazole Unit.