



GRAPHICAL ABSTRACT

Paper-1	Heterocyclic Letters 16: iss.-1 (2026), 19-33
<p>Physicochemical properties associated to coupling of twenty-three amide derivatives with acetylcholinesterase</p> <p>Alvarez-Ramirez Magdalena, Rosas-Nexticapa Marcela, Mateu-Armand Virginia, Bonilla-Zavaleta Enrique, Melgarejo-Gutierrez Montserrat Alheli</p> <p><i>Nutrition Laboratory, Faculty of Nutrition, University of Veracruz, Medicos y s/n Odontologos 910210, Unidad del Bosque, Xalapa, Mexico</i></p> <p>In this study, some physicochemical properties involved in the coupling of twenty-three amide derivatives with the surface of the enzyme acetylcholinesterase were reported.</p> <div style="text-align: center;"> </div>	

Paper-2	Heterocyclic Letters 16: iss.-1 (2026), 35-47
<p>Synthesis and anti bacterial evaluation of novel (4-(2-fluoro-4-(1<i>H</i>-1,2,3-triazol-1-yl)phenyl)piperazin-1-yl)ketone analogues</p> <p>Satish V A N^{1*}, Johar Kalidindi¹, Manoj Kumar B¹, A Emmanuel Kola^{2*}</p> <p>¹Dept. of Chemstry, Sir C R Reddy College, Eluru, Andhra Pradesh, India-534007. ²Dept. of Chemistry, Y V N R Government Degree College, Kaikaluru, Andhra Pradesh, India- 521333 Corresponding author, E-mail: dr.kaekola@gmail.com</p> <div style="text-align: center;"> <p>7a-j</p> <p>Antibacterial agents</p> </div> <p>A series of (4-(2-fluoro-4-(1<i>H</i>-1,2,3-triazol-1-yl)phenyl)piperazin-1-yl)ketone derivatives were synthesized and evaluated for their antibacterial activity against three gram positive and three gram negative pathogens</p>	

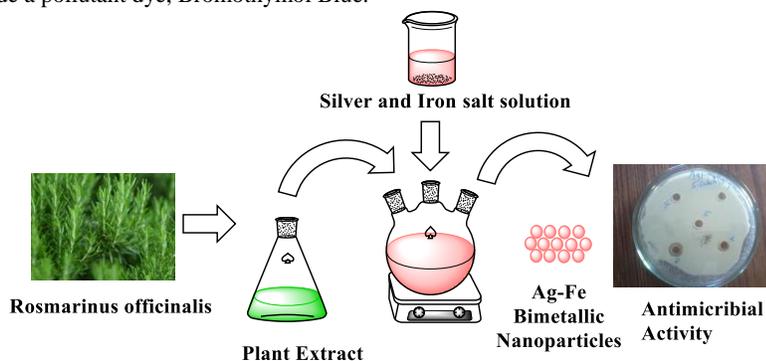


Synthesis of Ag-Fe Bimetallic Nanoparticles Using *Rosmarinus officinalis* Leaf Extract

Bhagyashree Salunkhe^b, Amal Muftah^a, Shobha Waghmode^c, Ajinkya Mandake^b, Devidas Patil^d, Aarif L Shaikh^{d*} and Sharda Gadale^{b*}

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*Author of Correspondences: dagade@rediffmail.com, aarif.shaikh@infiniasciences.com

Simple and ecofriendly method was used for the synthesizing Ag-Fe bimetallic nanoparticles at room temperature. The reducing agent was rosemary extract which competed with silver nitrate (AgNO₃) and ferric chloride (FeCl₃) solution in the formation of Ag-Fe nanoparticles. The formation of highly stable Ag-Fe nanoparticles at room temperature was easy through the use of leaves of the *Rosmarinus officinalis*. The antimicrobial effect of Ag-Fe alloy nanoparticles demonstrated that the nanoparticles can be utilized as effective growth inhibitors to *Escherichia coli* and *Bacillus Substills*. Photocatalytic experiment demonstrated the capability of the catalyst produced to degrade a pollutant dye, Bromothymol Blue.

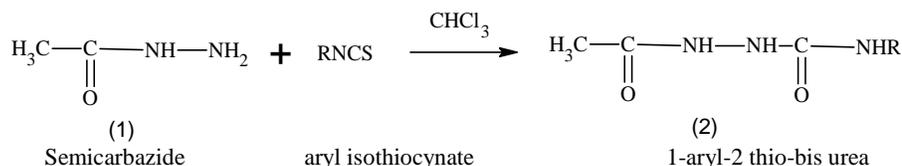


Some acetyl derivatives of thiadiazolidene: synthesis, characterization and biological evaluation

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Semicarbazide (0.01) and aryl /alkyl isothiocyanate (0.01 mole) dissolved in minimum amount of chloroform(10ml).The reaction mixture was heated under reflux for 2 hours .After cooling the reaction mixture the product separated out as crystal was filtered ,washed with water dried and recrystallised from absolute alcohol .





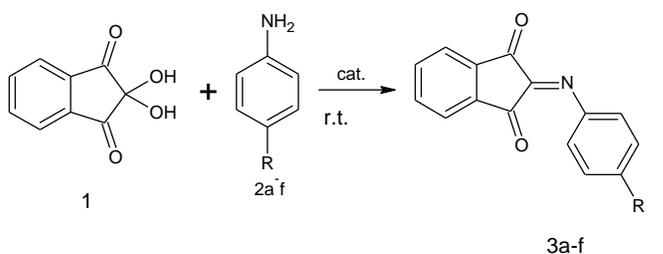
Sustainable Synthesis of Indene-1,3(2H)-dione Derivatives Using Kinnow Peel Powder as a Renewable Catalyst

Rand Fahd Al-Turaif^a, Razan Saeed Al Shamri^a, Wahj Khalied Al Shamri^a, Alaa Muqbil Alsirhani^a, Nadia A.A. Elkanzi^{a*}

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Corresponding Author: Nadia A.A. Elkanzi (Elkanzi N.A.A.), E-mail: nahasan@ju.edu.sa

This study presents an efficient and environmentally sustainable approach for synthesizing a novel series of indene-1,3(2H)-dione derivatives **3a-f** via the condensation of ninhydrin (**1**) with various aromatic amines (**2a-f**), including **aniline**, **4-nitroaniline**, p-Toluidine, 4-Acetyl aniline, 4-Methoxy aniline, and **1-naphthylamine**. The reaction is facilitated by Kinnow peel powder, a green and renewable catalyst, and proceeds under mild conditions (room temperature with stirring). Kinnow peel powder serves as a catalyst, highlighting the eco-friendly nature of the process and aligning with the principles of green chemistry by minimizing environmental impact and promoting sustainability.



2,3a,R=H
 b,R=4-NO₂
 c,R=CH₃
 d,R=CH₃CO
 e,R=OCH₃
 f,R=Ph

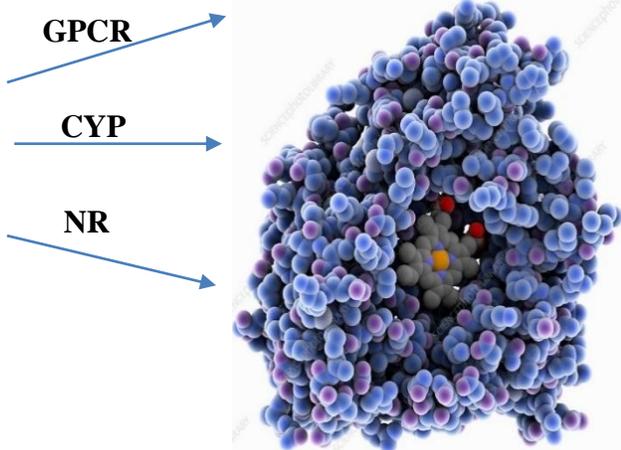
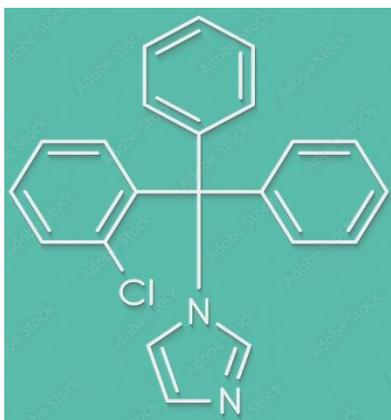


Medicinal properties of clotrimazole – a virtual analysis

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Clotrimazole has positive value to combine effectively with G protein-coupled receptors, which catalyzes cell proliferation and signalling, slightly with enzymes responsible for oxidation and gene production.



Synthesis of functionalized benzo[a]pyrano[2,3-c]phenazine derivatives by using a basic ionic liquid and investigation of their antimicrobial and antifungal activity

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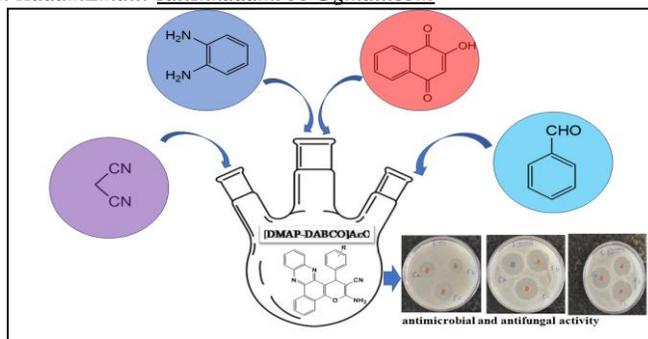
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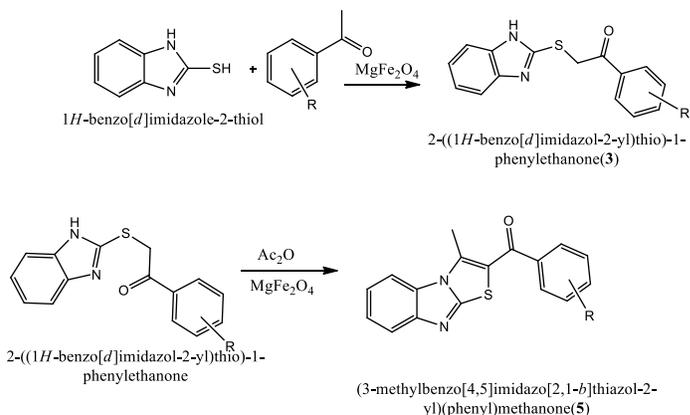
MgFe₂O₄ catalysed synthesis of 3-methylbenzo[4,5]imidazo[2,1-b]thiazol-2-yl(phenyl)methanones

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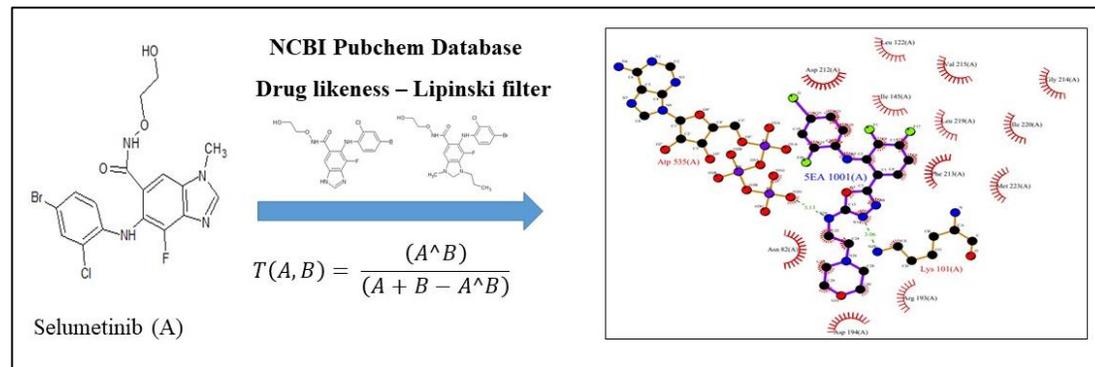


Prediction of mek2 inhibitors using virtual screening and molecular dynamics simulation methods

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3. Center for Computational Biology & Translational Research, Amity Institute of Biotechnology, Amity University, Mumbai, Maharashtra, India.
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The synthesis of functionalized acridionones derivatives catalyzed by tbbab-cesium carbonate in aqueous peg-600

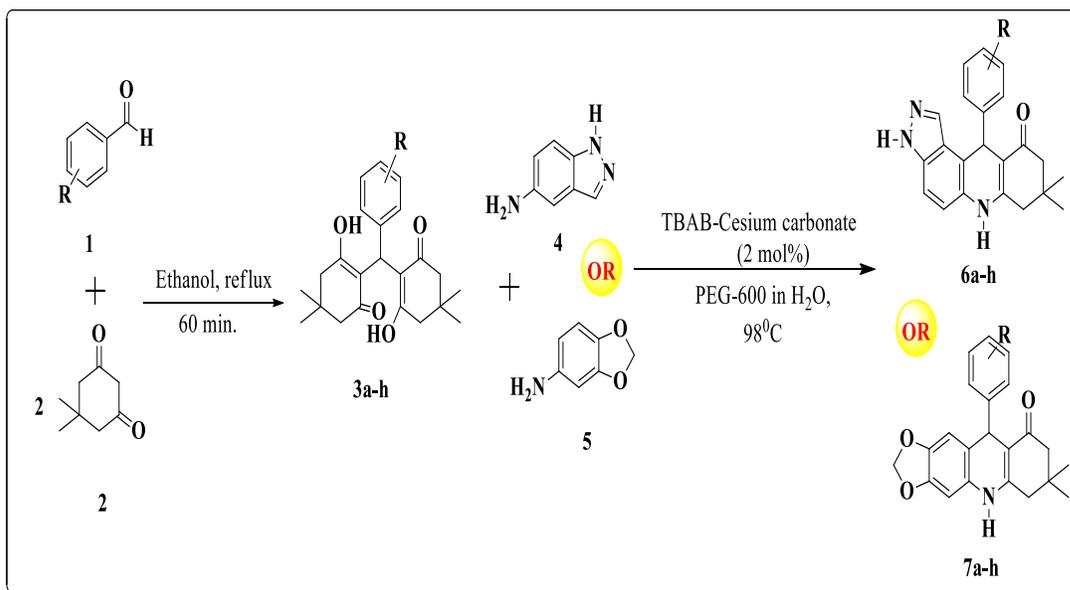
Pavan R. Kale^a & Bhausaheb K. Magar^{b,*}

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The synthesis of a range of Functionalized Acridionones derivatives has been accomplished through a two-step reaction involving aromatic aldehydes, substituted aniline, and cyclic 1,3-dicarbonyl compounds. In the first step, synthesis of bis-hydroxy derivatives takes place, which are confirmed by using TLC as well as NMR and Mass spectroscopy. In second step, the synthesis of functionalized acridionones derivatives carried out using TBAB-Cesium carbonate in aqueous PEG-600 as a cost-effective and efficient catalyst. The reaction's progress was tracked using thin-layer chromatography (TLC), and the resulting products were examined using Fourier-transform infrared (FT-IR) spectroscopy, as well as ¹H and ¹³C nuclear magnetic resonance (NMR) and mass spectroscopy (MS)



HETEROCYCLIC ALKALOID MEDIATED GREEN SYNTHESIS OF SELENIUM NANOPARTICLES FROM *Berberis aristata* AND THEIR ANTIBACTERIAL ACTIVITY

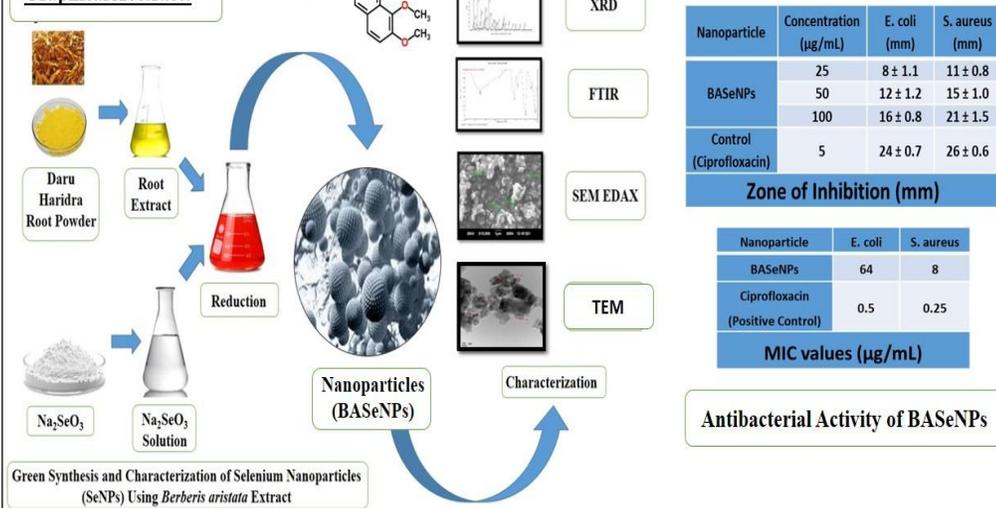
Vivek Jedhe^{a*}, Suraj Adole^b, Pallavi Pantawane^c, Sanjiv Patil^d and Bhuvaneshwari Mehere^e

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^eDepartment of Biochemistry, Shri Shivaji College of Arts, Commerce and Science, Akola, Maharashtra, India

*Corresponding Author Email: vivekbiochem@gmail.com

Graphical Abstract:

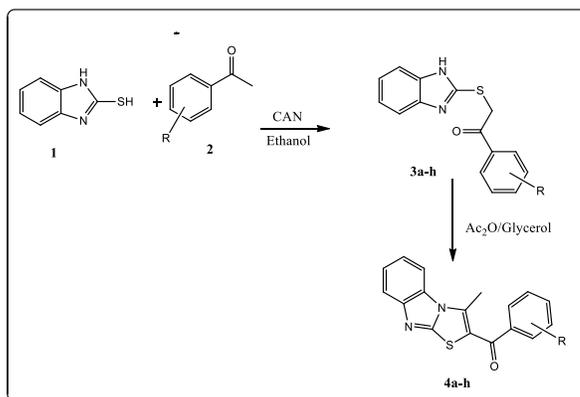


Highly efficient microwave assisted synthesis of 2-benzoyl-3-methylbenzo[4,5]imidazo[2,1-b]thiazole

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Paper-13

Heterocyclic Letters 16: iss.-1 (2026), 145-152

In Silico Prediction of Medicinal Properties and Target Analysis of 1-(1,3-benzothiazol-2-yl)-3-pyridin-2-yl thiourea - A SwissADME Study

P. Kalpana¹, C. Prathipa² and L. Akilandeswari³

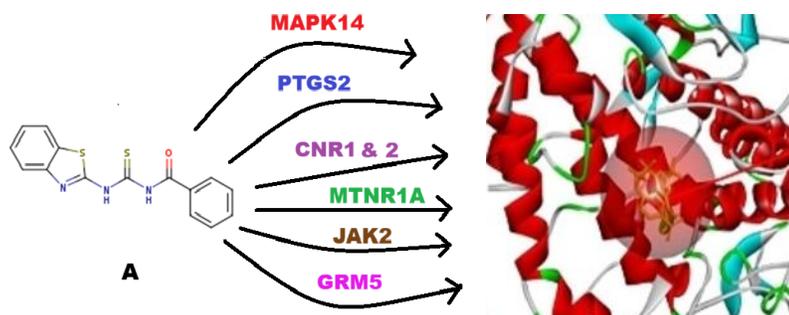
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²Department of Chemistry, Government College of Engineering, Salem - 636 011, Tamilnadu, India.

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1-(1,3-benzothiazol-2-yl)-3-pyridin-2-yl thiourea (A) shows good drug-likeness and possesses positive binding with enzymes for blood cell creation, immunological and neurological responses.



Paper-14

Heterocyclic Letters 16: iss.-1 (2026), 153-159

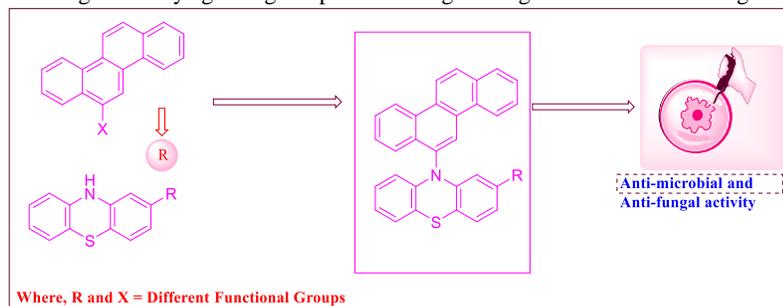
Evaluation of Antimicrobial and Antifungal Properties of New Chrysene-Phenothiazine Derivatives

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We are interested in synthesis and developing the chemistry of Chrysene–Phenothiazine derivatives. For this different aromatic amine, 6-Bromo Chrysene and substituted phenothiazine derivatives to yields the respective Chrysene–Phenothiazine derivatives. The structures of the synthesized compounds were confirmed by Physico-chemical test and spectral techniques, representative samples were screened for their antimicrobial and antifungal activity against gram positive and gram negative bacteria and fungi and yeast





Efficient one-pot synthesis of pyrido[2,3-d]pyrimidines catalyzed by nickel ferrite nanoparticles in water

Santosh B. Katariya^a, Kiran B. Upar^b, Mustaqeem Mohammed Abbas^c, Karthik K. Krishnan^{d,*}

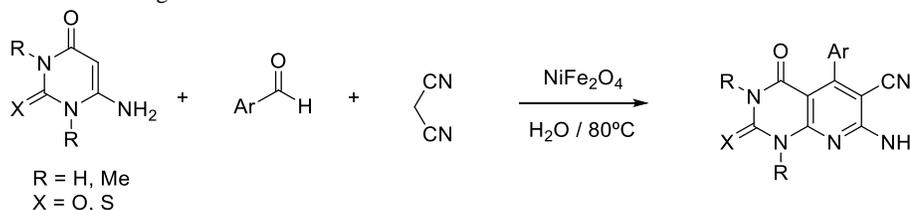
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^bDepartment of Chemistry, NES Ratnam College of Arts, Science and Commerce (Autonomous), Bhandup (West), Mumbai - 400078, Maharashtra, India

^cDepartment of Chemistry, Royal College of Arts, Science and Commerce (Autonomous), Mira Road, Thane – 401107, Maharashtra, India

^{d,*}Department of Chemistry, Guru Nanak College of Arts, Science and Commerce (Autonomous), G.T.B. Nagar, Mumbai - 400037, Maharashtra, India, Email: kcube86@gmail.com

A general and convenient practical approach for the synthesis of pyrido[2,3-d]pyrimidine derivatives has been achieved via one-pot three-component reaction of aromatic aldehyde, 6-aminouracil/ 6-amino-2-thiouracil / 6-amino-1,3-dimethyluracil and malononitrile (3 mmol) in the presence of a catalytic amount of magnetic Nickel Ferrite (NiFe₂O₄), in water under reflux. NiFe₂O₄ nanoparticles used as catalysts were synthesised using sol-gel (citrate gel technique) and were characterized using Powder XRD and SEM. The synthesized compounds have been characterized by spectral characteristics. Simple work-up, mild reaction conditions, inexpensive non-toxic catalyst and excellent yields are the advantages of this method.



Synthesis, Characterization and Thermal Degradation study of Co(II), Ni(II) and Cu(II) Complexes of Heterocyclic Schiff Base Ligand

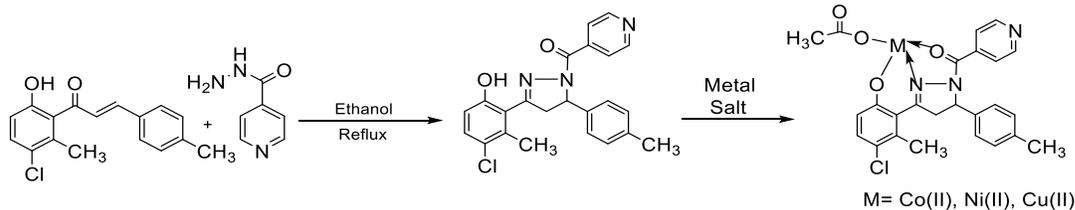
A.Thakare^a and P. Mandlik^b

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^bDepartment of Chemistry, Shri Shivaji Science College, Amravati

*Corresponding author Email id – anmol21086@gmail.com

New Schiff base ligand has been synthesized by the condensation of 3-(3-chloro-6-hydroxy-2-methylphenyl)-5-(p-tolyl)-4,5-dihydro-1H-pyrazol-1-yl(pyridin-4-yl)methanone with isoaniazide in ethanolic solution. This ligand is characterized on the basis of IR, ¹H-NMR and Mass Spectra. From this ligand new Co(II), Ni(II) and Cu(II) complexes were synthesized and characterized on the basis of elemental analysis, IR spectra and Electronic Spectra. The non electrolytic nature for all metal complexes confirmed on the basis of molar conductivity data. The Fremann-Caroll and Sharp-Wentworth methods have been employed to study the thermal behaviour of complexes and to calculate activation energy (E_a), thermal stability, order of reaction (n), entropy change (ΔS), free energy change (ΔF). The activation energy calculated with above two mentioned methods is in close agreement. The ligand is act as tridentate and square planar geometry is suggested to all metal complexes.





Synthesis and antimicrobial evaluation of 3-(((8-hydroxyquinolin-5-yl)amino)methyl)-5-(1-naphthyl)-1,3,4-oxadiazole-2(3H)-thione and its octahedral metal (II) complexes

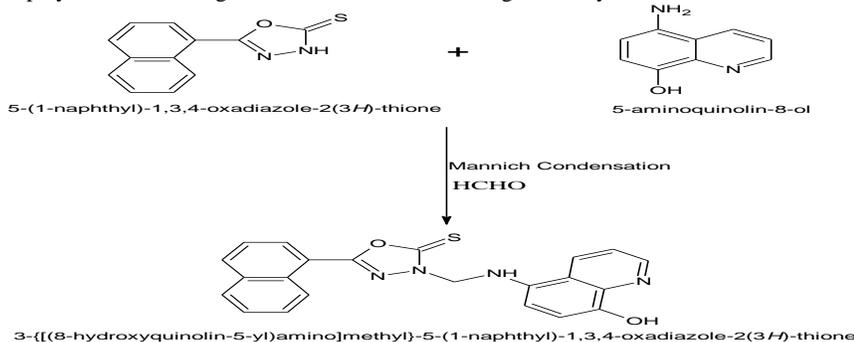
M F Tank^{*1}, G D Acharya²

¹Government Polytechnic, Palanpur-385001(Gujarat), India.

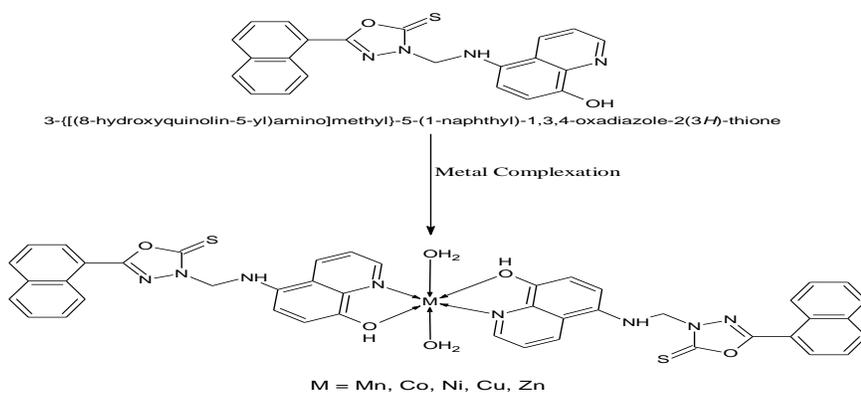
²Head, Dept. of Chemistry, R.R.Mehta College of Science & C.L.Parikh College of Commerce, Palanpur-385001(Gujarat), India.

*E-mail: maheshftank@gmail.com

Synthesis and characterization of a novel clubbed molecule 3-(((8-hydroxyquinolin-5-yl)amino)methyl)-5-(1-naphthyl)-1,3,4-oxadiazole-2(3H)-thione (HAMNOT) and its octahedral metal (II) complexes. HAMNOT and its octahedral metal (II) complexes displayed moderate to good antibacterial and antifungal activity.



Scheme 1



Scheme 2



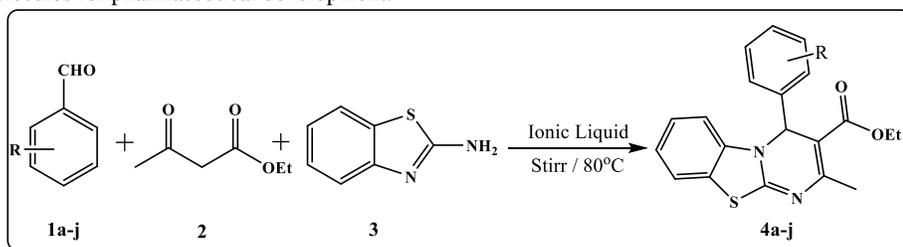
An efficient ionic liquid, one-pot multicomponent synthesis of biologically active benzo [4,5] thiazolo [3,2-a] pyrimidines and their derivatives.

D. Mundhe, G. Shingare, *B. Madje

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Email : mundhedharanidhar@gmail.com

The development of sustainable and efficient synthetic methodologies for heterocyclic scaffolds of biological significance remains a central focus in organic and medicinal chemistry. In this study, we report an efficient, green, and one-pot multicomponent protocol for the synthesis of benzo[4,5]thiazolo[3,2-a]pyrimidines and their derivatives employing an ionic liquid as a recyclable catalyst and reaction medium. The reaction proceeds smoothly via the condensation of 2-aminobenzothiazole, substituted aromatic aldehydes, and β -dicarbonyl compounds under mild conditions, furnishing the desired fused heterocycles in excellent yields within short reaction times. The synthesized compounds were structurally characterized by FT-IR, $^1\text{H-NMR}$, $^{13}\text{C-NMR}$, and Mass spectrometry. Preliminary biological screening revealed that several derivatives exhibited promising antibacterial and antifungal activities highlighting their potential as lead molecules for pharmaceutical development.



Molecular Insights into (E)-2-(4-Chlorobenzylidene)-5,6-dimethoxy-2,3-dihydro-1H-inden-1-one: Synthesis, Structure, FMO Analysis, Spectroscopy, and Antimicrobial Activity – an Experimental and Computational Study

Nutan V. Sadgir^a

^aDepartment of Chemistry, Mahatma Gandhi Vidyamandir's Loknete Vyankatrao Hiray Arts, Science and Commerce College, Panchavati, Nashik-422 003, India

This study looks into the structure, electronics and microbial activity of (E)-2-(4-chlorobenzylidene)-5,6-dimethoxy-2,3-dihydro-1H-inden-1-one by using both experimental and computer-based methods



REVIEWS

Review no.1	Heterocyclic Letters 16: iss.-1 (2026), 209-218
A review on microwave-assisted coupling reactions	
Rosas-Nexticapa Marcela, Alvarez-Ramirez Magdalena, Mateu-Armad Maria Virginia, Bonilla-Zavaleta Enrique.	
<i>Nutrition Laboratory, Faculty of Nutrition, University of Veracruz, Medicos y s/n Odontologos 910210, Unidad del Bosque, Xalapa, Mexico</i>	
In this review, are reported some straightforward routes for the synthesis of different compounds using assisted microwave irradiation.	

Review no.2	Heterocyclic Letters 16: iss.-1 (2026), 219-244
Crucial facets of Advances in β-lactam combinations for allied medicinal practices: An overview of innate chemistry and biological profile	
Vilas Katore, Rajendra S. Dongre, Tahir Sheikh	
<i>Post Graduate Teaching Department of Chemistry, Nagpur University, Campus, Nagpur-440033, Maharashtra India</i> <i>E-mail-vilaskatore10@rediffmail.com, phone: +91-9689490094</i>	
The four membered β -lactam are being very important class of organic compounds in medicinal chemistry. Different types of β -lactam antibiotics are basically used to treat the bacterial infections, but novel inventions in β -lactam chemistry has shown the improved bio-activity of it as antiviral, inflammatory, analgesics, Cholesterol absorption agents, antidiabetics, antitubercular, Neuroprotective agents etc. The hybrid β -Lactam is found effective for versatile medicinal applications particularly as an anticancer drugs.	
Normal beta lactam	Hybrid Beta lactam
β -Lactamase inhibitor enables β -lactam antibiotics to increase its stability towards its enzymatic hydrolysis caused by bacterial enzymes. This results in efficacious bio-logical activity of β -lactam antibiotics to treat different infections.	
Clavulanate + Enzyme	Acyl_Enzyme
	Rearrangement



Review no.3-

Heterocyclic Letters 16: iss.-1 (2026), 245-255

A Review of the Effectiveness and Use of Pain Relief Medicine

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³Faculty of medicine, Zagazig University, Zagazig, Egypt

We describe the design and optimization of poly functional scaffolds based on a fluorescent indolizine core derivatized with various orthogonal groups (amines, esters, oximes, alkynes, etc.). To show one application as tools in biology, the scaffold was used to prepare drug-biotin conjugates that were then immobilized onto avidin-agarose for affinity chromatography. we report a synthetic protocol for the synthesis of carbamates by employing zinc chloride as a catalyst from carbamoyl chlorides and aromatic/aliphatic alcohols. The developed protocol successfully utilizes the gram-scale synthesis of the FDA-approved rivastigmine drug and its derivative .Synthesis of spiroindolo quinazolines via one-pot three-component condensation reactions of trypanothione, malononitrile or ethyl cyanoacetate, and nucleophiles was carried out in MeOH using triethylamine as the base catalyst under reflux conditions. This method has the advantages of short reaction time, excellent yields, and an easy work-up procedure.

Review no.4

Heterocyclic Letters 16: iss.-1 (2026), 257-267

Sources of chemical contaminants in foodstuff and their wellbeing implications

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The Preventative Measures to Control Food Contamination



Transition-metal catalysts for oxidation reactions

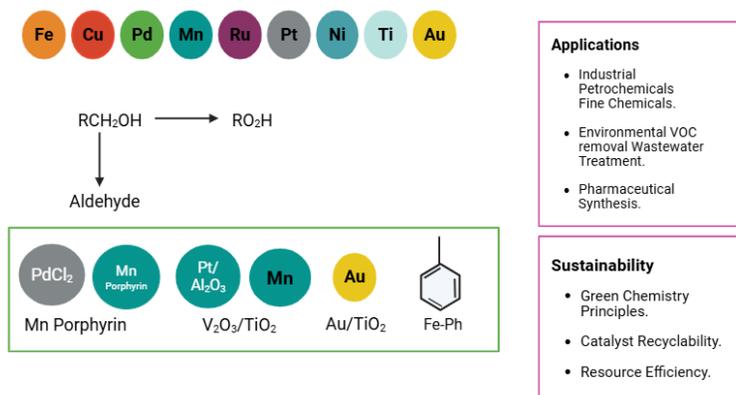
Arti Jain^{a*}, Khushi Madaan^a, Gunanvee Pandey^a, Lata Vodwal^{b*}

^aDepartment of Chemistry, Daulat Ram College, University of Delhi, Delhi-110007, India ^bDepartment of Chemistry, Maitreyi College, University of Delhi, Delhi, India

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Oxidation reactions are essential processes in both natural and commercial contexts, and transition metal catalysts are essential in promoting these reactions. The importance of oxidation reactions/processes, and applications of transition metals for catalyzing oxidation reactions are covered in detail in this review.

TRANSITION-METAL-CATALYZED OXIDATION REACTION





Review no.6

Heterocyclic Letters 16: iss.-1 (2026), 289-313

Review on: Sustainable Innovations with Green-Synthesized Nanoparticles – Advancing Eco-Friendly Solutions

Sourabh Mohite¹, Lokesh Gurumoorthy², Supriya Shukla², Devidas Patil³, Aarif L Shaikh^{3*}, and Sharda Gadale^{1*}

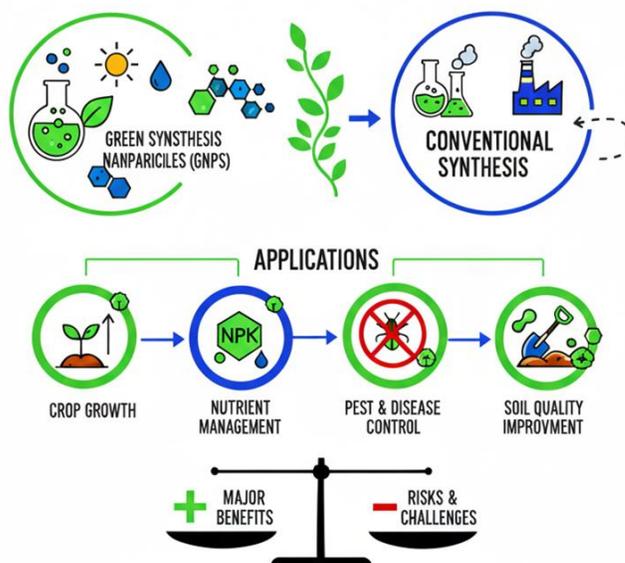
¹Department of Chemistry, Yashwantrao Mohite College of Arts, Science and Commerce, Bharathi Vidyapeeth (Deemed to be University), Maharashtra, India

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New technologies are being explored at a rapid pace to improve crop yield and productivity with minimum detrimental effects on the environment. Nanoparticles (NPs) of unique physicochemical properties synthesized through green processes can play an attractive role in sustainable agriculture. This review provides a comprehensive overview of their uses in enhancing crop's growth, managing nutrients, eliminating pests and diseases, and improving soil quality. In addition to their major benefits, nanoparticles for agricultural use also pose several risks and challenges. Further, this review, compares how green synthesis differs from conventional synthesis methods and emphasizes the potential for sustainable agriculture through the application of Green-synthesized Nanoparticles (GNPs).





Review no.7

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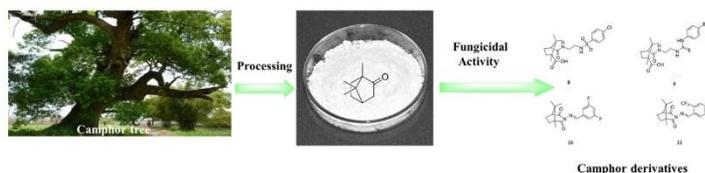
Recent Advances in Development of Camphor Based Fungicides

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Comprehensive review on 12-aryl-8, 9, 10, 12-tetrahydrobenzo[a]xanthene-11-one derivatives and its applications

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