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Graphical Abstract

Heterocyclic Letters 4: iss.-2 (2014), 193-197

Facile synthesis of methyl-2-(furyl-2-yl) 3-methyl-4-oxo-4h-furo (2, 3-h) chromene-8-carboxylate

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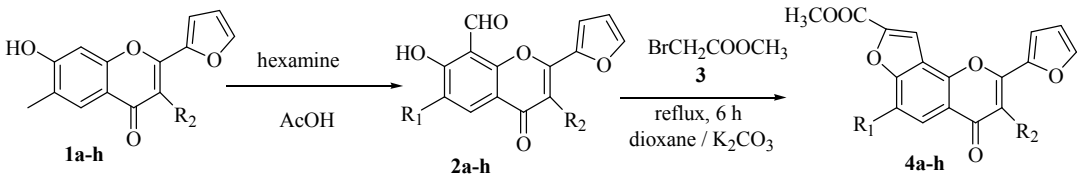
Abstract: New series of methyl furo (2,3-h) chromene-8-carboxylate derivatives have been synthesized from 8-formyl-7-hydroxy furylchromones (**2a-h)** react with methylbromo acetate in as anhydrous K_2CO_3 under inert atmosphere give methyl-2-(furyl-2-yl) 3-methyl-4-oxo-4H-furo (2, 3-h) chromene-8-carboxylates **(4a-h)** in good yields.



1, 2,4 **a** = R_1 = H, R_2 = CH_3 **e** = R_1 = H, R_2 = H
b = R_1 = Cl R_2 = CH_3 **f** = R_1 = Cl R_2 = H
c = R_1 = Br R_2 = CH_3 **g** = R_1 = Br R_2 = H
d = R_1 =CH_3 R_2 = CH_3 **h** = R_1 =CH_3 R_2 =H

Heterocyclic Letters 4: iss.-2 (2014), 199-202

Alumina catalyzed synthesis of benzoxazole derivatives – a green approach

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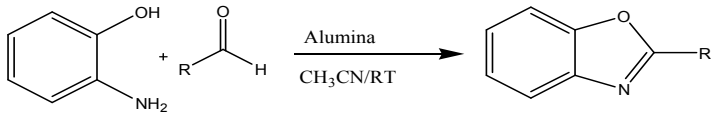
ABSTRACT:
A simple and efficient method has been developed for the synthesis of Benzoxazole derivative. Benzoxazole derivatives show large number of biological and pharmaceutical activities. We have synthesized Benzoxazole derivative in the presence of catalytic amount of alumina at room temperature.



Heterocyclic Letters 4: iss.-2 (2014), 203-213

Reaction of formylated acetophenones with dimedone and NH_4OAc assisted by $KHSO_4$ in aqueous media: A facile environment-friendly one-pot two-step regioselective synthetic strategy for 2-aryl-5-oxo-7,7-dimethyl-5,6,7,8-tetrahydroquinolines

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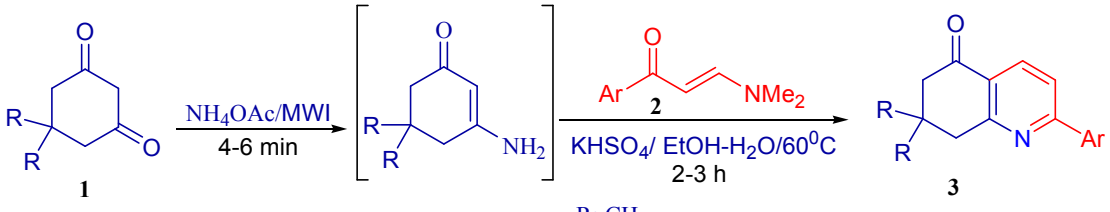
Synthesis of substituted quinolines **3** has been achieved in a one-pot two-step regioselective reaction from formylated acetophenones **2** with dimedone **1** and ammonium acetate assisted by $KHSO_4$ in aqueous media. The structures of 2-aryl-5-oxo-7,7-dimethyl-5,6,7,8-tetrahydroquinoline (**3a-3f**) have been confirmed by IR, ^{1}HNMR, mass spectral data etc.



Heterocyclic Letters 4: iss.-2 (2014), 215-221

Synthesis, characterization and chelating properties of metal complexes with transition metals

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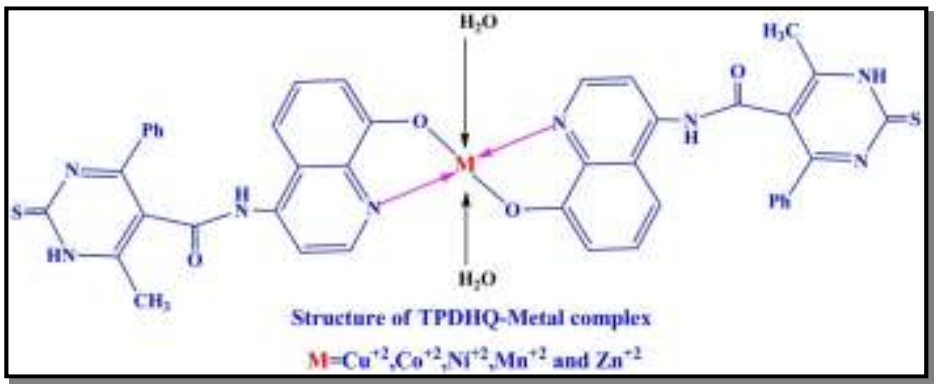
A novel N-(4-hydroxyquinolin-5-yl)-6-methyl-2-thioxo-4-phenyl-1,2-dihydropyrimidine-5-carboxamide (TPDHQ) and its octahedral metal(II) oxinates (1:2 metal to ligand ratio) were synthesized and characterized. This ligand form metal complexes with 3d Series transition metals. The novel ligand and their metal complexes show moderate to good antibacterial and antifungal activities. This might be due to the additive biological effect of parent molecules and/or due to the metal chelating properties.



Heterocyclic Letters 4: iss.-2 (2014), 223-233

Synthesis characterization and biological evaluation of novel 5-((3-((2-(4-phenylthiazole-2-yl)hydrazono)methyl)-1h-indol-1-yl)methyl)-1,3,4-oxadiazole-2(3h)-thione

***S.Muralikrishna, P.Raveendra Reddy, Prof.L.K.Ravindranath,P.jagadeeswara rao,P.Ashok gajapathi raju.**

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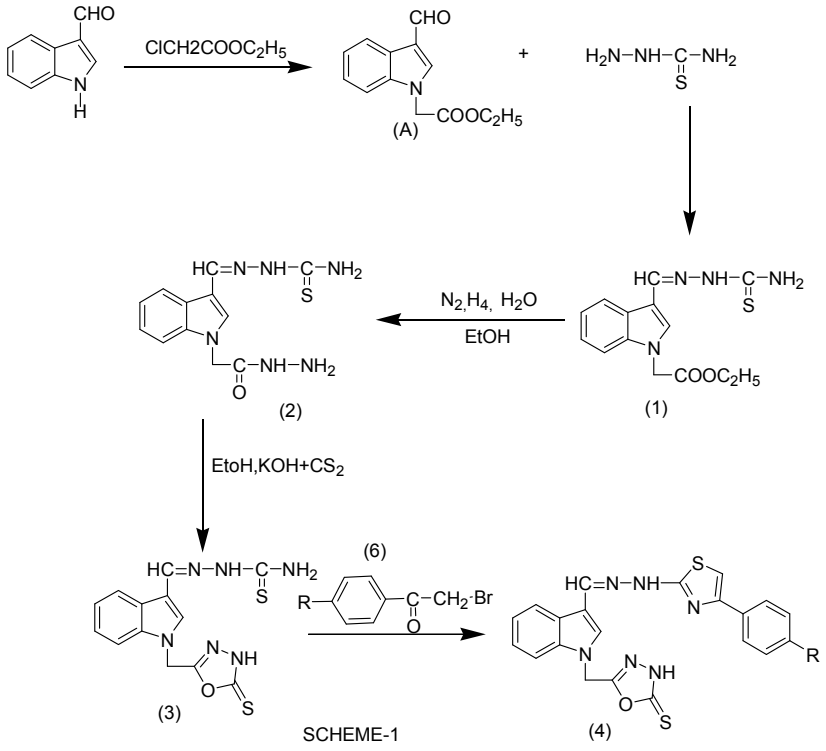
The article is aimed to synthesize,characterize and screening the biological activity of a series of Synthesis of 5-((3-((2-(4-phenylthiazole-2-yl)hydrazono)methyl)-1H-indol-1-yl)methyl)-1,3,4-oxadiazole-2(3H)-thione 4(a-f).



SCHEME-1

Heterocyclic Letters 4: iss.-2 (2014), 235-238

An alternative synthetic approach towards 2, 4, 5-trisubstituted-1h-imidazole

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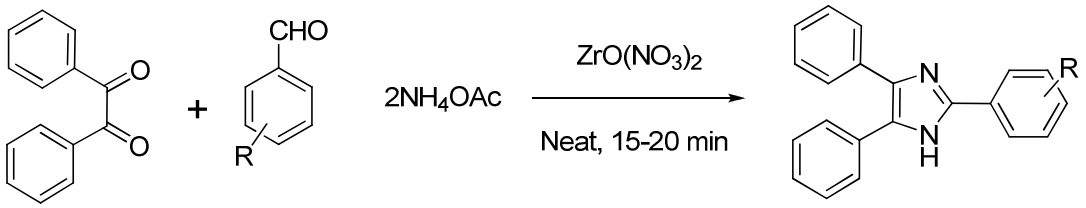
A simple and reliable synthetic method has been developed for 2, 4, 5-trisubstituted imidazoles by the condensation reaction between benzil, ammonium acetate, and various aromatic aldehyde in the presence of $ZrO(NO_3)_2$ catalyst under neat condition.



Heterocyclic Letters 4: iss.-1 (2014), 239-243

Facile synthesis of 4-(2-oxo-2-(4-phenyl-piperazin-1-yl) ethyl) 2h-benzo-4-oxazin-3-(4h) ones

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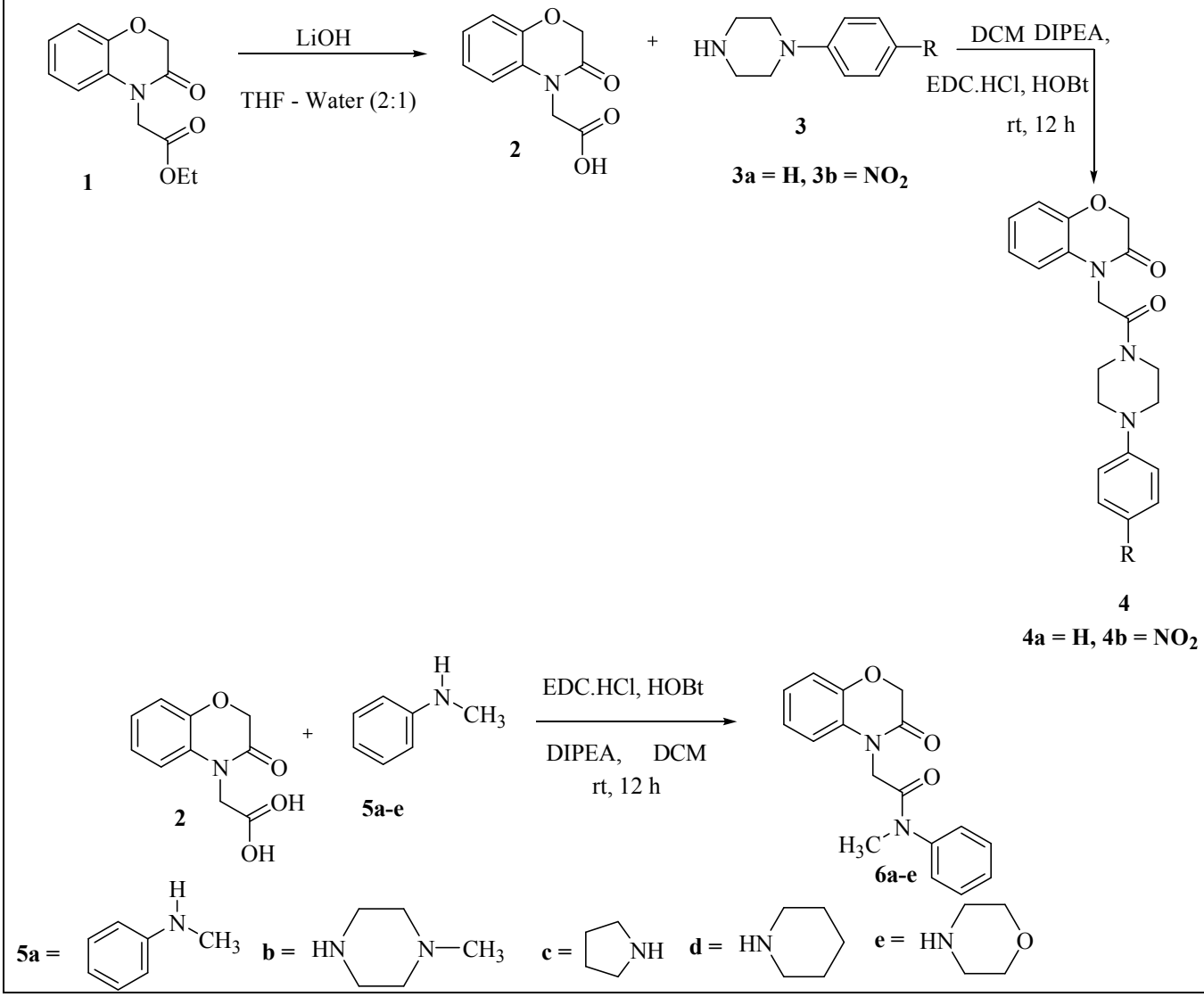
Abstract: *2-(3-oxo-2H-benzo[b] oxazin-4-(3H-yl-acetic acid react with amines* ***(5a-e)*** *in as catalyst HOBt, under EDC.HCl, solvent DCM to give benzoxazol-1-yl-1-amide derivatives* ***(6a-e)*** *in good yields.*



Heterocyclic Letters 4: iss.-2 (2014), 245-249

A Facile and Eco-Friendly synthesis of 1-Methyl-2-((alkylthio)methyl)-1H-benzimidazole

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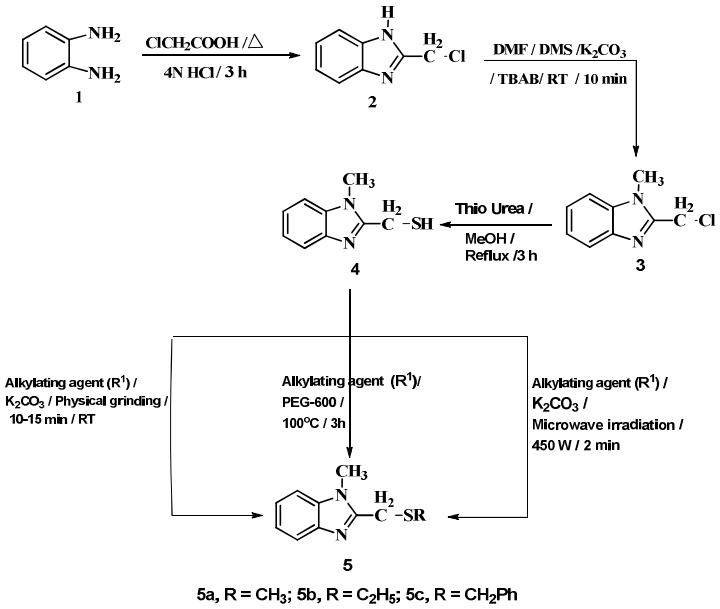
A green approach for the synthesis of 1-methyl-2-(alkylthio)-1*H*-benzimidazoles **5** (R^1= CH_3, C_2H_5, CH_2Ph) under, different conditions has been developed from N-methyl-2-thiomethylbenzimidazole (*i.e.* CH_3) **4** by reaction with an alkylating agent by physical grinding or by using green solvent like PEG-600 or by using micro-wave irradiation technique.



5a, R = CH_3; 5b, R = C_2H_5; 5c, R = CH_2Ph

Heterocyclic Letters 4: iss.-2 (2014), 251-266

Corrosion resistance of mild steel in acid solutions in the presence of [4-methoxy-6-methyl-pyrimidin-2 yl] pyridine-2 ylm ethylene-amine as corrosion inhibitor.

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[b]*SGTB Khalsa College, University of Delhi, Delhi- 110007*
[c]*Hindu College, University of Delhi, Delhi- 110007*
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The new Schiff base namely [4-methoxy-6-methyl-pyrimidin-2-yl] pyridine-2-ylm ethylene- amine (**S_1**) was synthesized and its capability as corrosion inhibitor on the mild steel in 0.5M H_2SO_4 was investigated by using the conventional potentiodynamic polarization studies, linear polarization studies (LPR), electrochemical impedance spectroscopy studies (EIS). Polarisation curves revealed that this compound is a mixed type (cathodic/anodic) inhibitor. Atomic force microscopy revealed that a protective film was formed on the surface of the inhibited sample. The adsorption of the inhibitor was found to confirm Langmuir isotherm and standard adsorption parameters K_{ads}, and ΔG^0_{ads} were determined from adsorption isotherms. Quantum chemical calculations were further applied to reveal the adsorption structure and explain the experimental results.

Heterocyclic Letters 4: iss.-2 (2014), 267- 270

Synthesis of 2-(4,5-dihydro-3,5-diphenylisoxazole / pyrazol-4-ylthio)-6-methylpyrimidin-4-one

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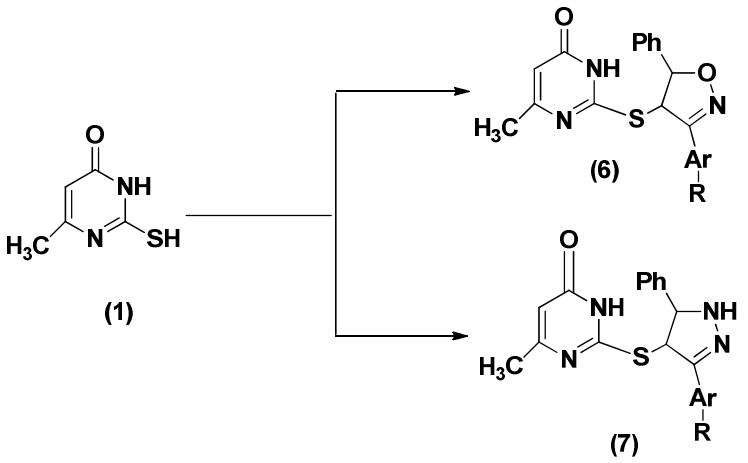
Reaction of 2-mercapto-6-methylpyrimidin-4-one **(1)** with phenacyl bromide(**2**) in DMF in the presence of K_2CO_3 as a mild base for 3 hrs at RT followed by processing, gave 6-methyl-2-(3-oxo-3-phenylpropyl)pyrimidin-4-one (**3**). The latter on treatment with benzaldehyde (**4**) in ethanol under reflux yielded 2,1-oxo-1,3-diphenylprop-2-en-2-ylthio)-6-methylpyrimidin-4-one (**5**). **5** on treatment with hydrazine hydride/ hydroxyl amine hydrochloride in ethanol under reflux yielded 2-(4,5-dihydro-3,5-diphenylisoxazole / pyrazol-4-ylthio)-6-methylpyrimidin-4-one (**6**)/ (**7**).



Heterocyclic Letters 4: iss.-2 (2014), 271-278

Synthesis and biological evaluation of novel 1, 3-diphenyl-2-propene-1-ones having anti-microbial and anti-inflammatory activity

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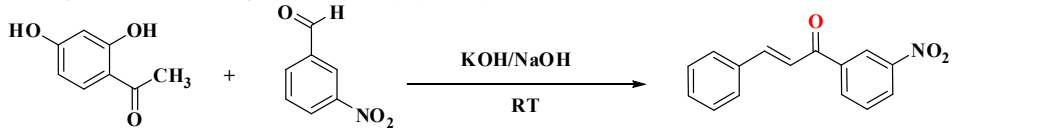
In view of the important biological activities, derivatives of novel 1,3-diphenyl-2-propene-1-one derivatives (or) chalcone derivatives (3a-3d) were synthesized by grinding of resacetophenone (1a) with various substituted benzaldehyde derivatives (2a-2d) in the presence of potassium hydroxide/sodium hydroxide (KOH)/(NaOH).



1-(2,4-dihydroxyphenyl)ethanone

or

Resacetophenone

3-nitrobenzaldehyde

(*E*)-1-(3-nitrophenyl)-3-phenylprop-2-en-1-one (3a)

Heterocyclic Letters 4: iss.-2 (2014), 279-285

Use of amide coupling reagents in the synthesis of polyerizable diacrylamide derivatives of dibenzo crown ethers

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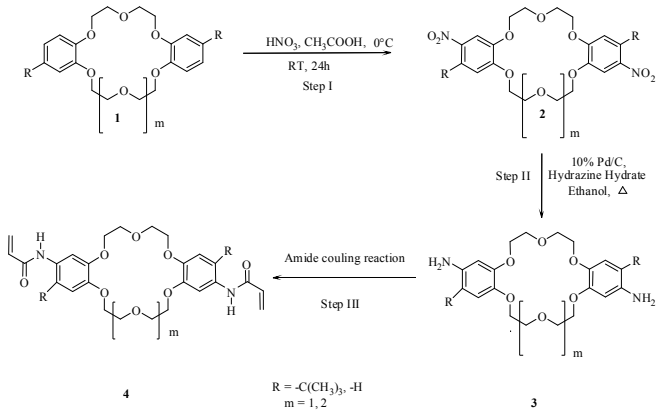
4',4"(5")-Diacrylamidodibenzo-18-crown-6 , 4',4"(5")-Diacrylamido-5',5"(4")-di-tert-butyldibenzo-18-crown-6 and 4',4"(5")-diacrylamidodibenzo-21-crown-7 were synthesized through amide coupling reaction.



Heterocyclic Letters 4: iss.-2 (2014), 287-293

Synthesis, characterization and investigation of schiff base as a corrosion inhibitor for mild steel in H_2so_4 medium

Ompal singh yadav[a], sudershan kumar[b], gurmeet kaur[c], gurmeet singh[a*]

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[b]*Hindu College, University of Delhi, Delhi- 110007*
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The corrosion behaviour of mild steel (MS) in 0.5 M H_2SO_4 was studied by using (4- methoxy-6-methyl-pyrimidin-2-yl)-(1-pyridin-2-yl-ethylidene)-amine (MMPPE) as an inhibitor by using the conventional potentiodynamic polarization studies, linear polarization studies (LPR) and electrochemical impedance spectroscopy studies (EIS). The results showed that MMPPE possesses excellent inhibition effect towards mild steel corrosion. The inhibitor molecules were first adsorbed on the mild steel surface thereby blocking the active sites available for acid attack.

Heterocyclic Letters 4: iss.-2 (2014), 295-300

Synthesis of some new 1-(2,4-dinitrophenyl)/phenyl-4-(substituted phenyl thioureido) hydrazono-3-methyl-2-pyrazolin-5-ones and their biological activity

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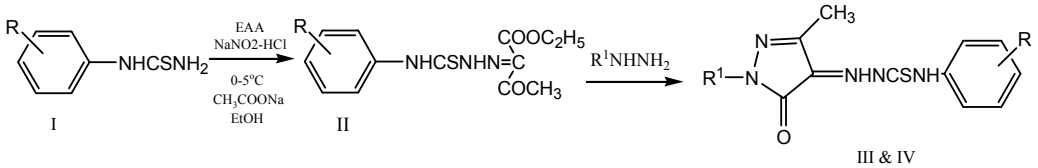
We have synthesized substituted phenylthiourea (I) and reacted it with ethylacetoacetate in presence of sodium nitrite and sodium acetate which yielded 1-ethyl-2-(substituted phenyl thioureido)-hydrazono-3-oxobutyrate (II). Compounds (II) reacted with phenyl hydrazine and 2,4-dinitrophenyl hydrazine to give the title compounds (III &IV) respectively. All the newly synthesized compounds were characterized on the basis of IR, ^{1}H NMR spectra and elemental analysis data. These compounds have been screened for their antifungal activities.



R= 2-NO_2, 3-NO_2, 2,5-diCl, 3-Cl, 4-NO_2, 2-CH_3
R^1= -C_6H_5, 2,4-diNO_2-C_6H_4

Heterocyclic Letters 4: iss.-2 (2014), 301-310

The Synthesis of 3,4-Dihydropyrimidin-2(1H)-one/thione Derivatives using Silica-supported 3-(triethoxysilyl) propan-1-ammonium chloride as Reusable Heterogeneous Catalyst under Solvent-free conditions and Microwave.

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The synthesis of 3,4-dihydropyrimidin-2(1H)-ones or thione Derivatives by three-component Biginelli reaction, one-pot condensation of aromatic aldehydes, β-dicarbonyl compounds, and urea (thiourea) derivatives using silica-supported 3-(triethoxysilyl) propan-1-ammonium chloride without any solvent at 100 °C and Microwave irradiation. This catalyst was characterized by XRD, ^{1}H, ^{13}C NMR and FT-IR. The short reaction times, good recyclability and reusable of the catalyst, consistent yields of products, non-toxic and clean reaction conditions and minimum environmental effects were important features of this protocol which make it a useful process for the synthesis of these important heterocyclic compounds.