Graphical Abstract

Heterocycl. Commun.4(2009) 239-244

Alternative Products In One-Pot Reaction Of Benzylidene-Malononitrile, Thiocarbamoylacetamide And Alkyl Halides

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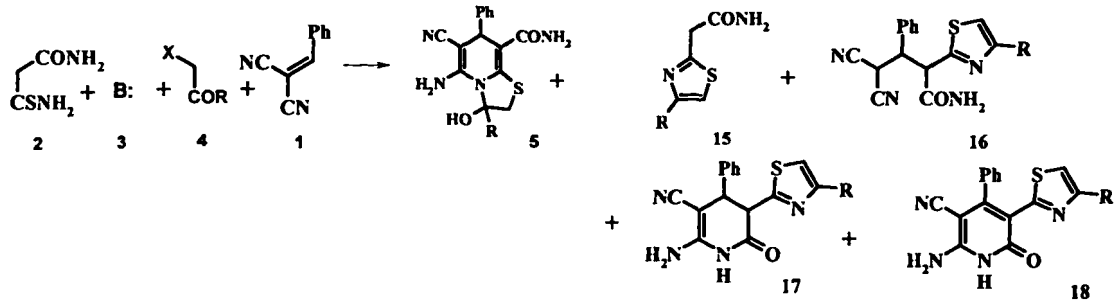
6-Oxo-5-(1,3-thiazol-2-yl)-1,4,5,6-tetrahydropyridine-3-carbonitriles **17**, corresponding 6-oxo-5-(1,3-thiazol-2-yl)-5,6-dihydropyridine-3-carbonitriles **18** and intermediates - 2-(1,3-thiazol-2-yl)acetamides **15** and 4,4-dicyano-2-(1,3-thiazol-2-yl)-butyramides **16** have been obtained as alternative products to 3-hydroxy-2,3-dihydro-7*H*-thiazolo[3,2-*a*]pyridines **5** carrying out one-pot condensation of 2-thiocarbamoylacetamide **2**, base **3**, halomethyl ketones **4** and benzylidenemalononitrile **1**.



Heterocycl. Commun.4(2009) 245-250

One-pot synthesis of 3-(2'-Benzoxazole)-2H-1-Benzopyran -2-One Derivatives with Benzoic Acid Catalysis

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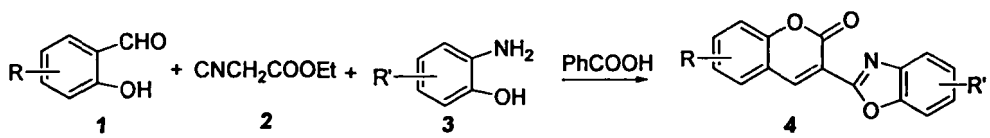

Title compounds **4** were synthesized in one pot with benzoic acid catalysis from salicylaldehydes, ethyl cyanoacetate and o-aminophenols.

Heterocycl. Commun.4(2009) 251-261

Syntheses Of New Heterocycles Derived From 2-Phenyl-3,1-Benzoxazin-4-One And Their Antibacterial And Antifungal Activity

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A series of novel substituted N-(6-substituted-4H-benzo[e][1,3]oxazin-3-yl)- 2-[4-(4-oxo-2-phenyl-4H-quinazolin-3-yl)-phenoxy]-acetamides (9a-b) and N-(6-substituted-2-thione-4H-benzo[e][1,3]oxazin-3-yl)-2-[4-(4-oxo-2-phenyl-4H-quinazolin-3-yl)-phenoxy]-acetamides (10a-b) were designed and synthesized. The structures of the newly synthesized compounds have been confirmed by IR, ^{1}H NMR and mass spectra. The compounds have also been screened for their biological activity.

Heterocycl. Commun.4(2009) 263-272

Synthesis and spectral investigations of covalently linked phthalocyanine-C_{60} dyad via flexible carbon linker

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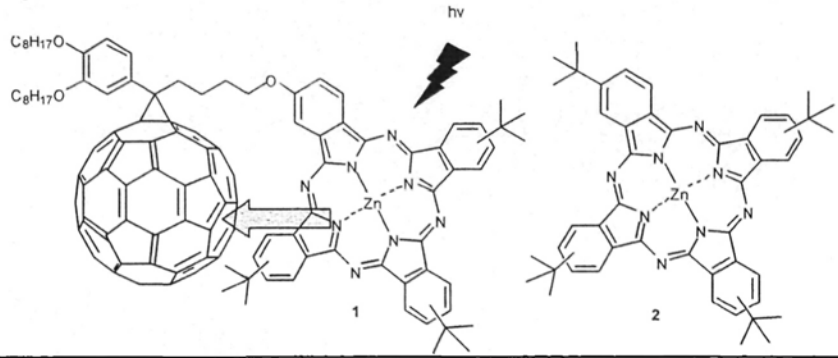
Phthalocyanine-C_{60} dyad **1** via a flexible saturated carbon linker was synthesized. The UV/Vis and fluorescence spectra studies of **1** revealed that intramolecular, not intermolecular, photoinduced electronic communication was observed in the solution state. We also examined UV/Vis and fluorescence spectra of a mixture of C_{60} and conventional tetra *tert*-Bu phthalocyanine **2** for comparison



Heterocycl. Commun. 4 (2009) 273-278

A Novel Phospha Sugar Analogue: Synthesis And Evaluation Of 2,3-Dibromo-3-Methyl-1-Phenylphospholane 1-Oxide As A New Class Of Potential Anti-Proliferative Materials For Leukemia Cells

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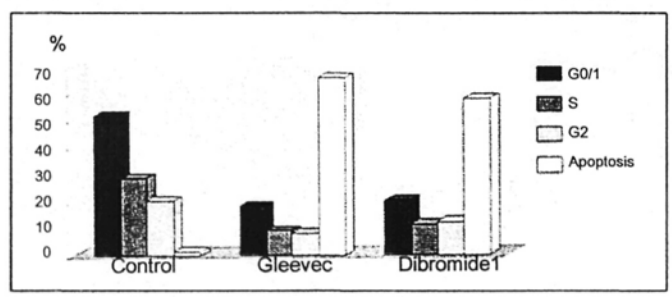
Abstract: A novel dideoxydibromophospha sugar analogue, 2,3-dibromo-3-methyl-1-phenylphospholane 1-oxide (**1**), was prepared from 1-phenyl-3-methyl-2-phospholene 1-oxide (**2**) and evaluated by MTT *in vitro* methods for leukemia cells. The evaluation of dibromide **1** (mixture of diastereomers) as well as the separated diastereomers of dibromide **1a** to **1d** revealed clearly that the synthesized phospha sugar analogue has competent potentials and excellent anti-tumor activities for the human leukemia cells of K562 and U937 in selective and specific manner. The cell cycle analyses by flow cytometry for K562 cells clearly demonstrated that the mechanism of the anti-proliferative effect on the human tumor cells is apoptosis induced by the phospha sugar.



Heterocycl. Commun. 4 (2009) 279-284

Synthesis and Reactions of Some 1*H*-Pyrazole-3 Carboxylic Acid Chloride

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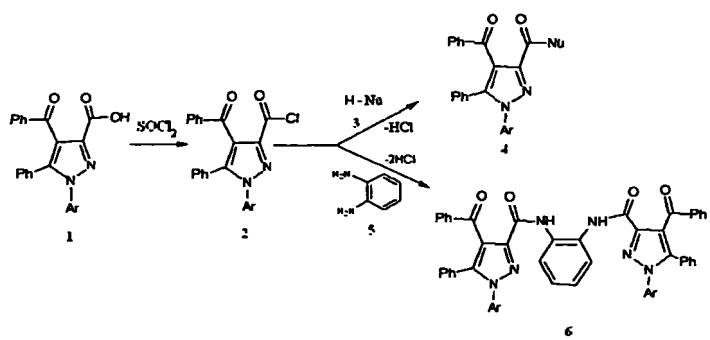
The pyrazole-carboxylic acid chloride 2 was obtained from the reaction of 4-Benzoyl-1-(2,4-dinitrophenyl)-5-phenyl-1*H*-pyrazole-3-carboxylic acid 1 and thionyl chloride. 1*H*-Pyrazole-3 carboxylic acid chlorides 2 can easily be converted into corresponding 1*H*-pyrazole-3-carboxylic acid amide derivatives 4 and 1*H*-pyrazole-3-carboxamide derivatives 6 from the reaction with various aliphatic and aromatic amines. The structures of these new synthesized compounds were determined from the IR, ^{1}H and ^{13}C NMR spectroscopic data and elemental anaylsis.



Heterocycl. Commun. 4(2009) 285-289

Fungicidal Activities of 1,4-Bis[(3-aryl)-s-triazolo-[3,4-*b*]-[1,3,4]thiadiazole-6-yl]naphthalenes

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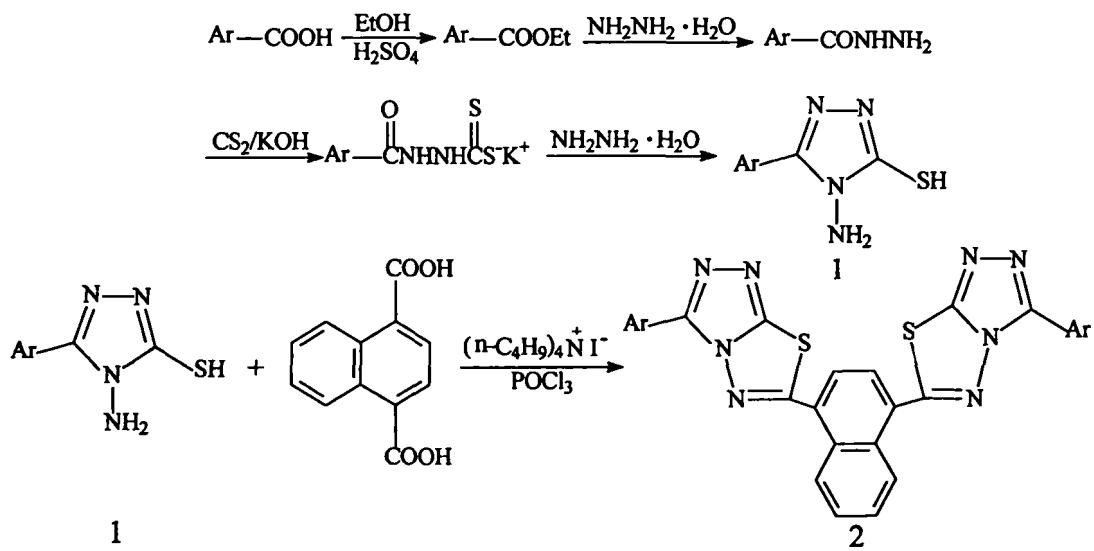
1,4-Bis[(3-aryl)-s-triazolo[3,4-*b*]-[1,3,4]thiadiazole-6-yl]naphthalenes **2** were synthesized in high yields by reaction of 3-aryl 4-amino-5-mercapto-1,2,4-triazole **1** with 1,4- naphthalic acid in the presence of $POCl_3$ and tetrabutylammonium iodide as catalyst. The structures have been established on the basis of elemental analysis and spectral date. The preliminary antibacterial tests showed that **2b**, **2c** and **2d** exhibited good fungicidal activities against *Cerospora beticola sacc.*



Heterocycl. Commun. 4 (2009) 291-296

A facile synthesis of 3-[4'-(2',6'-dimethyl-3',5'-dicarbethoxy-1',4'-dihydropyridyl)]chromenes

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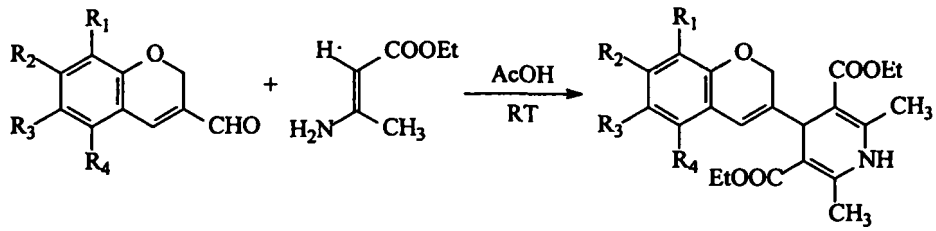
Abstract: 2H-3-Chromenecarbaldehydes (**3a-h**) on reaction with ethyl 3-aminocrotonate (**4**) in the presence of acetic acid gave 3-[4'-(2',6'-dimethyl-3',5'-dicarbethoxy-1',4'-dihydropyridyl)]chromenes (**5a-h**) in good yields.



Heterocycl. Commun. 4 (2009) 297-301

Synthesis Of 6- Alkoxycarbonylmethylsulfanyl-5-Cyano-2-Methyl-4-Phenyl-1,4-Dihydropyridine-3-Carboxylates

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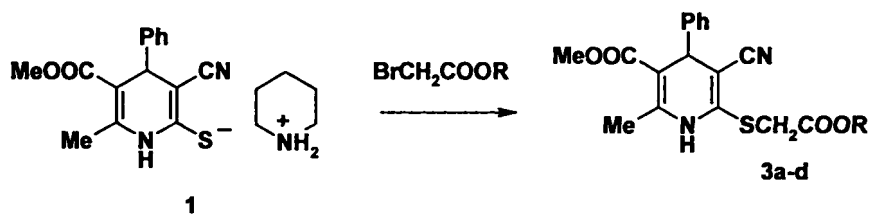
6-Alkoxycarbonylmethylsulfanyl-5-cyano-2-methyl-4-phenyl-1,4-dihydropyridine-3-carboxylates **3** which are more lipophilic derivatives of the biologically active 6-methylsulfanyl-1,4-DHP-3-carboxylates **2** have been prepared by alkylation of 1,4-dihydropyridine-6-thiolates **1** with alkyl bromoacetates. Reactivity of **2** with KOH/H_2O was investigated.



1 **3a-d**

a) R = Me; b) R = Et; c) R = i-Pr; d) R = *t*-Bu

Heterocycl. Commun. 4 (2009) 303-310

Synthesis and antimicrobial activities of 5-(2', 5'-disubstituted 1H- indol-3'-yl)-5h-thiazolo[4,3-b]1,3,4-oxadiazole, -1,3,4-thiadiazole, -1,2,4-triazole and their derivatives

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5-(2', 5'-disubstituted 1H- indol-3'-yl)-5H-thiazolo[4,3-b]1,2,4-triazoles (5) -1,3,4-thiadiazoles (6) and -1,3,4-oxadiazoles (7) and their analogues were synthesized from **4.**