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Youji Huaxue

Chinese Journal of Organic Chemistry

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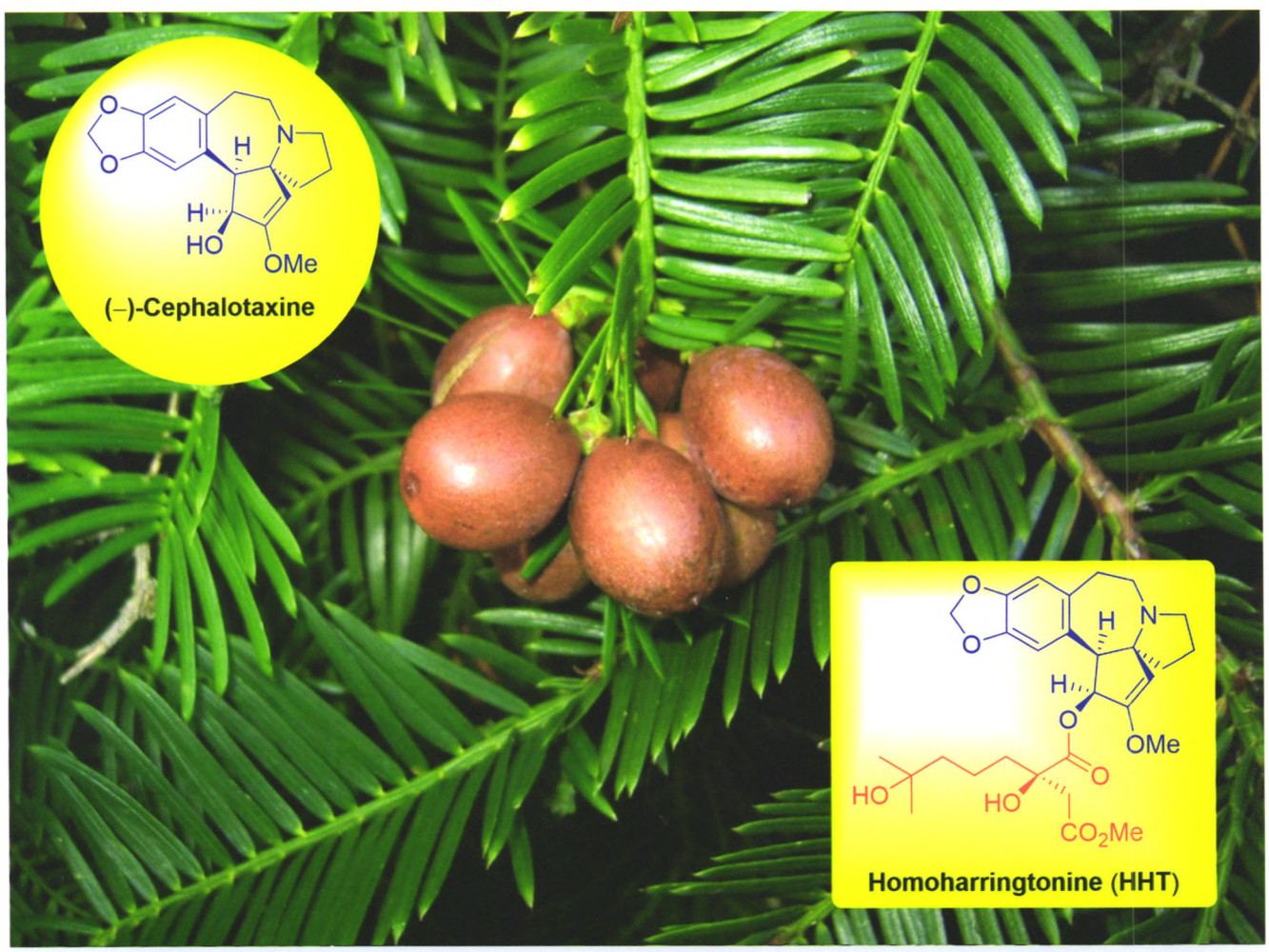

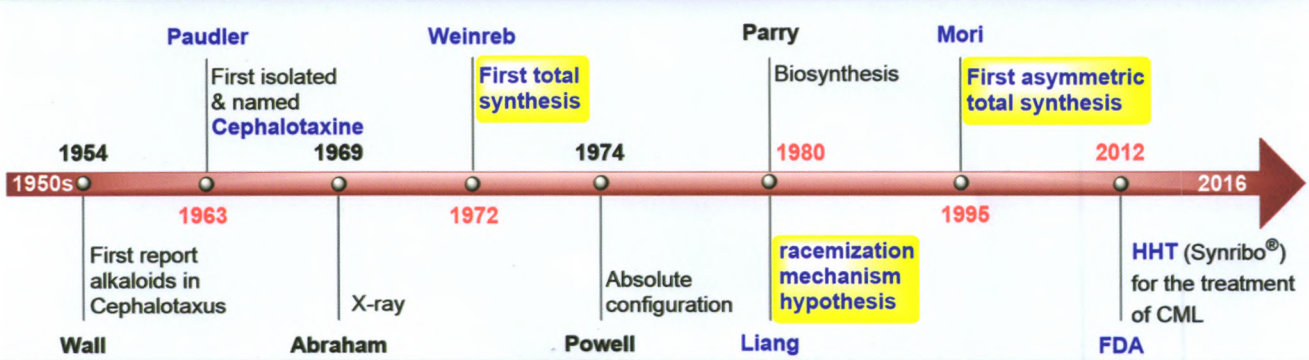

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(YOUJI HUAXUE)

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目 次

综述与进展

研究论文

* 通讯联系人.

研究简报

Chinese Journal of Organic Chemistry

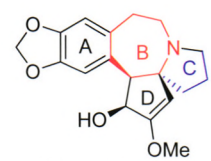
Vol. 37 No. 8 August 2017

On the Cover

The recent progresses in the asymmetric total synthesis of (−)-cephalotaxine are reviewed by Chen and Li on page 1885, with different synthetic strategies towards azatricyclic ring construction being delineated. Cephalotaxine is the parent structure of a series of natural *Cephalotaxus* alkaloids. Despite the inactivity of cephalotaxine itself, homoharringtonine as one of its natural esters alkaloids has been approved by the Food and Drug Administration (FDA) for treatment of chronic myeloid leukemia since 2012.

REVIEWS

Asymmetric Total Synthesis of (−)-Cephalotaxine



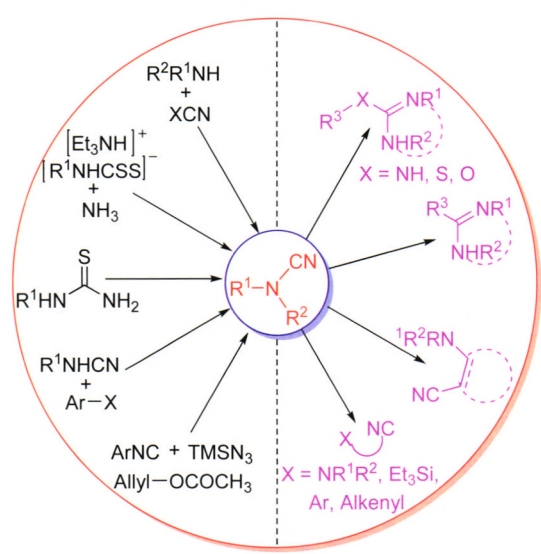
(-)-Cephalotaxine

Cephalotaxine is the parent structure of an anticancer drug homoharringtonine. The strategic approaches toward the asymmetric total synthesis of (−)-cephalotaxine are summarized.

Chen, Yang; Li, Wei-Dong Z.*

Chin. J. Org. Chem. **2017**, *37*(8), 1885

Progress on the Synthesis and Applications of Cyanamides



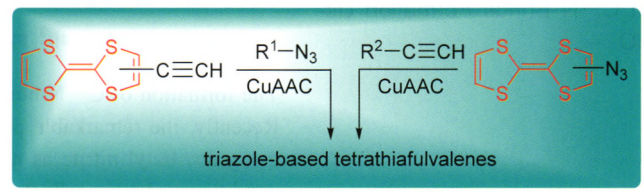
Cyanamides are an important class of fine chemicals containing amino and cyano functionalities, which have been widely used for the synthesis of pharmaceuticals, agricultural chemicals, health products and materials, and attracted considerable attention from both organic synthetic chemists and medicinal chemists. Great advances in the synthesis and transformations of cyanamides were made, a diversity of synthetic methods and transformations of cyanamides were developed in the past two decades. In this paper, various synthetic methods and reactions of cyanamides are introduced comprehensively, their characteristics, rules, advantages and disadvantages are also summarized and discussed for the development of new synthetic methods and reactions of cyanamides.

Li, Jihui*; Li, Zhengzhang; Zhang, Yucang; Xu, Wenrong; Xu, Shuying

Chin. J. Org. Chem. **2017**, *37*(8), 1903

CONTENT

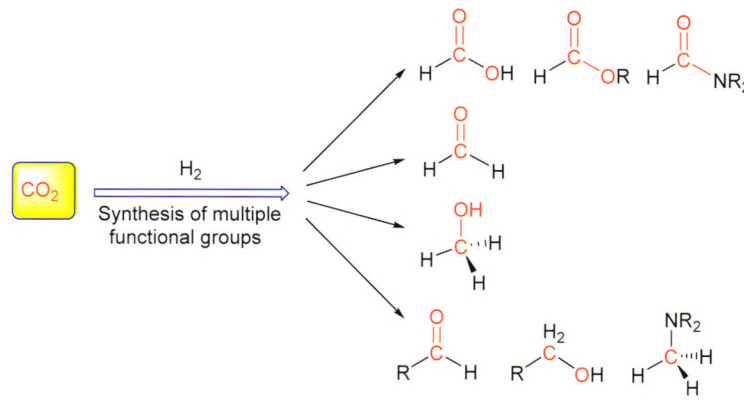
Progress on Synthesis and Application of Triazole-Based Tetrathiafulvalene Derivatives



Zhao, Bangtun*; Tao, Jingjing; Chen, Xiaoji; Zhu, Weimin*
Chin. J. Org. Chem. **2017**, *37*(8), 1964

The evolution of the clicked tetrathiafulvalenes for molecular recognition, molecular assembly along with photoelectric and photovoltaic functional materials is reviewed.

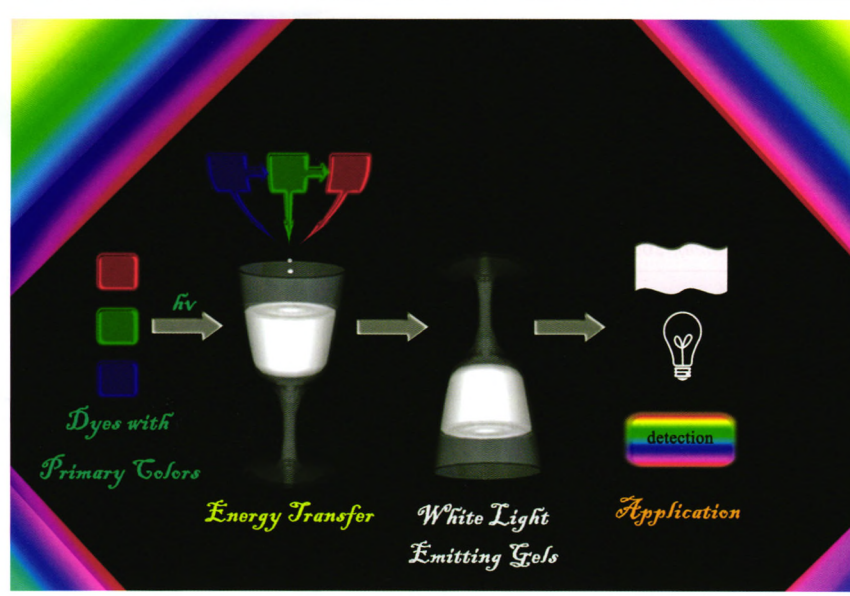
Progress in Homogeneous Catalytic Hydrogenation of CO_2



The application of carbon dioxide (CO_2) as a resource for chemical synthesis has attracted chemists' attention along with the rising of sustainable development strategies and concerning about global warming. Herein the recent progress in the homogeneous hydrogenated CO_2 catalyzed by organometallic complexes is reviewed, which included homogeneous catalysts types, structures, activity and selectivity for the production of formic acid, formaldehyde, methanol and as C_1 synthons, and the mechanism of homogeneous catalytic hydrogenation of CO_2.

Li, Yong; Wang, Zheng; Liu, Qingbin*
Chin. J. Org. Chem. **2017**, *37*(8), 1978

New Member of Luminescent Materials—Status and Future of White Light Emitting Gel



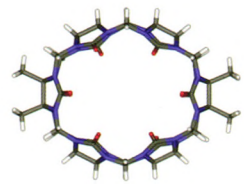
The recent progress in the mechanism, structure, properties and applications of white light emitting gels is reviewed. The effects of the energy transfer on the luminescence properties of chromophore in the gels are mainly discussed. Finally, the potential application and current deficiency of them are also prospected.

Yang, Hewei; Zhang, Yuzhe; Li, Yanjie; Wang, Jingxiang; Li, Xiaomeng; Song, Jian; Zhang, Bao*; Feng,Yaqing*
Chin. J. Org. Chem. **2017**, *37*(8), 1991

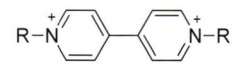
CONTENT

ARTICLES

Supramolecular Self-Assembly between Teteamethyl Cucurbit[6]uril and Alkyl Viologens



TMeQ[6]



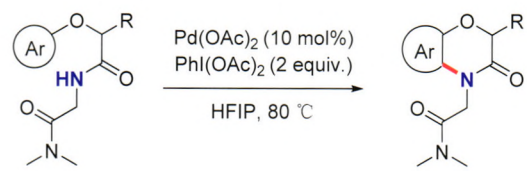
BV^{2+}, R = $CH_2CH_2CH_2CH_3$
FV^{2+}, R = $CH_2CH_2CH_2CH_2CH_3$
HV^{2+}, R = $CH_2CH_2CH_2CH_2CH_2CH_3$

Bai, Dong; Wang, Xin; Gao, Zhongzheng; Qiu, Shengchao; Tao, Zhu; Zhang, Jianxin*; Xiao, Xin*

Chin. J. Org. Chem. **2017**, *37*(8), 2022

Three symmetric viologen derivatives bearing aliphatic substituents of variable length were employed as guests, and the supramolecular self-assembly between teteamethyl cucurbit[6]uril (TMeQ[6]) and these viologen derivatives guests has been studied by ^1H NMR spectroscopy, electronic absorption spectroscopy, isothermal titration calorimetry, mass spectrometry and X-ray diffraction methods in details.

Facile Synthesis of Benzoxazinone Derivatives via Palladium Catalyzed Intramolecular Amination

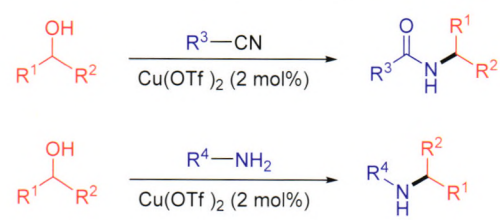


Zhou, Panpan; Guan, Mingyu; Zhang, Jingyu*; Xu, Fan*; Zhao, Yingsheng*

Chin. J. Org. Chem. **2017**, *37*(8), 2028

Benzoxazinone and its derivatives are well-known as a broad-spectrum of physiological activities compounds. Herein a novel approach is reported for the synthesis of benzoxazine derivatives via a *N*,*O*-bindentate directing assisted Pd-catalyzed intramolecular amination reactions. Various benzoxazinone derivatives are obtained in moderate to good yields. The directing group can be removed under mild condition, highlighting potential synthetic utility of this method.

Synthesis of Alkylated Amides and Amines by $Cu(OTf)_2$-Catalyzed *N*-Alkylation of Nitriles and Amines with Alcohols



30 examples, up to 92% yield

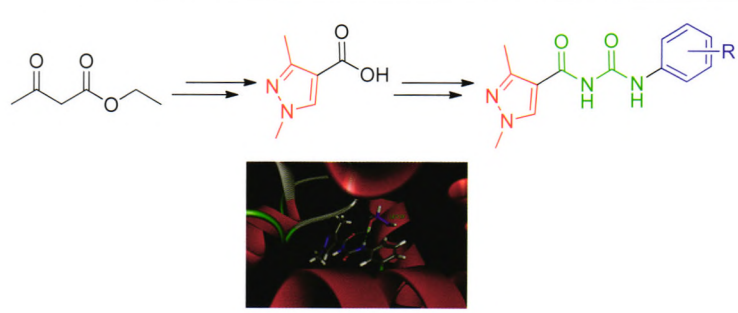
R^1 = aryl; R^2 = aryl, alkyl, H; R^3 = aryl, alkyl; R^4 = aryl

Ma, Xiantao; Li, Bo; Xiao, Yinglin; Yu, Xiaochun*; Su, Chenliang*; Xu, Qing*

Chin. J. Org. Chem. **2017**, *37*(8), 2034

A low loading $Cu(OTf)_2$-catalyzed Ritter reaction of nitriles with secondary alcohols and some primary alcohols has been developed for the synthesis of the useful alkyl amides. The same method can also be extended to the dehydrative *N*-alkylation of anilines with secondary alcohols to obtain the *N*-alkylated anilines.

Design, Synthesis, Fungicidal Activity and Docking Study of Acyl Urea Derivatives Containing Pyrazole Moiety



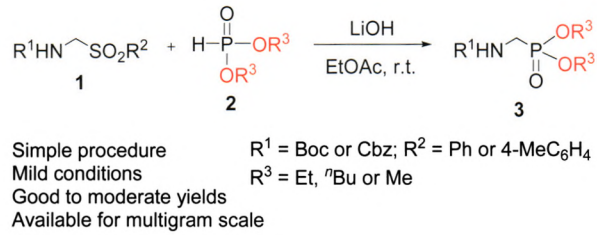
Sun, Nabo; Shen, Zhonghua; Zhai, Zhiwen; Wu, Hongke; Weng, Jianquan; Tan, Chengxia; Liu, Xinghai*

Chin. J. Org. Chem. **2017**, *37*(8), 2044

A series of novel pyrazole acylurea derivatives were synthesized. The target compounds were evaluated for their fungicidal activities, and the results indicated that some of the title compounds displayed good fungicidal activities. The structure activity relationship was studied using Docking method.

CONTENT

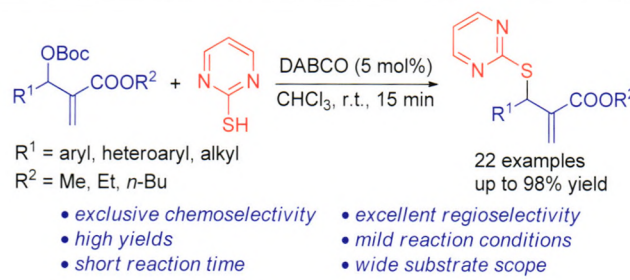
Study of the Synthesis of α-Alkoxycarbonylaminomethylphosphonates



Huang, Xiaoli; Ren, Linjing; Sajjad Ali, Pu, Jiazhi*; Yao, Qiuli*
Chin. J. Org. Chem. **2017**, *37*(8), 2073

The methodology for the synthesis of α-alkoxycarbonylaminomethylphosphonates is studied. Under the basic conditions of using LiOH, α-sulfonylmethylcarbamates reacted with dialkylphosphonates in the solvent of commercial EtOAc giving the products of α-alkoxycarbonylaminomethylphosphonates which are typically hard to be synthesized in good to moderate yields.

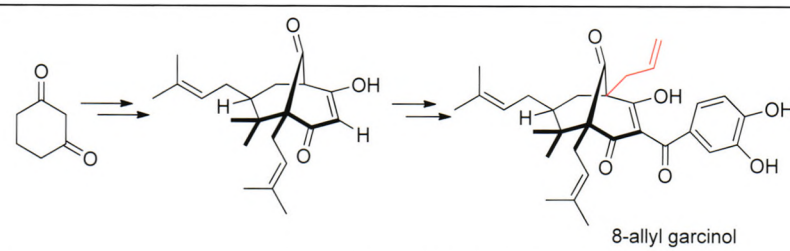
Selective *S*-Allylic Alkylation of 2-Thiopyrimidine with Morita-Baylis-Hillman Carbonates



Yang, Jingya*; Li, Nana; Zhou, Hongyan; Li, Tianyuan; Xie, Dongtai; Li, Zheng
Chin. J. Org. Chem. **2017**, *37*(8), 2078

A 1,4-diazabicyclo[2.2.2]octane-catalyzed *S*-allylic alkylation of 2-thiopyrimidine with Morita-Baylis-Hillman carbonates has been developed. The reactions completed within 15 min and exhibited exclusive *S*-chemoselectivity and perfect regioselectivity under the established conditions.

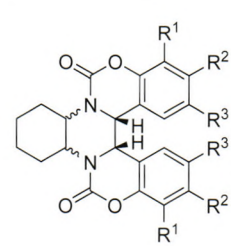
Synthesis and Anticancer Activity of 8-Allyl Garcinol



Cao, Jing; Han, Chaoming; Zhang, Guilian; Zhou, Xinying; Li, Shuwen; Du, Yinduan; Zhao, Shuai; Zhang, Xinyan*; Chen, Xin*
Chin. J. Org. Chem. **2017**, *37*(8), 2086

8-Allyl garcinol, a derivative of garcinol in which the bulky side chain at the C(8) position of garcinol is replaced with a much smaller allyl group, was synthesized through a 12-step procedure starting from 1,3-cyclohexanedione via Effenburger cyclization. The thiazolyl blue tetrazolium bromide (MTT) results indicated that the title compound shows strong inhibitory activity on cell proliferation of oral cancer cell lines.

Efficient and Stereoselective Synthesis of the Chiral Dihydroxy-bis-quinazoline-dione Derivatives and the Application in Asymmetric Catalysis



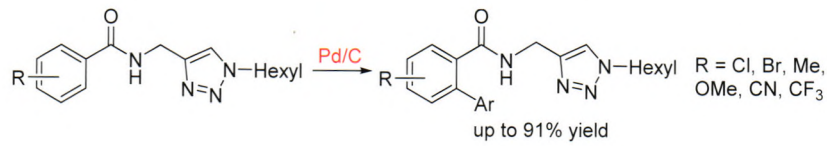
Lin, Wei*; Cai, Qi; Zheng, Chunzhi; Huang, Zhibin; Shi, Daqing*
Chin. J. Org. Chem. **2017**, *37*(8), 2094

An efficient and simple method for the synthesis of chiral benzo[5,6][1,3]oxazino-[4,3-*c*]quinoxaline-dione is reported. 2-Hydroxybenzaldehydes and diamines were utilized as the starting materials, the formed diimines then underwent a reductive-cyclization process with triphosgene to give bis-quinazoline-dione derivatives induced by low-valent titanium reagent. Then through the conversion of functional groups, the bis-quinazoline-dione compounds containing hydroxy group have been obtained from their corresponding compounds containing methoxy group in the presence of BBr_3.

CONTENT

NOTES

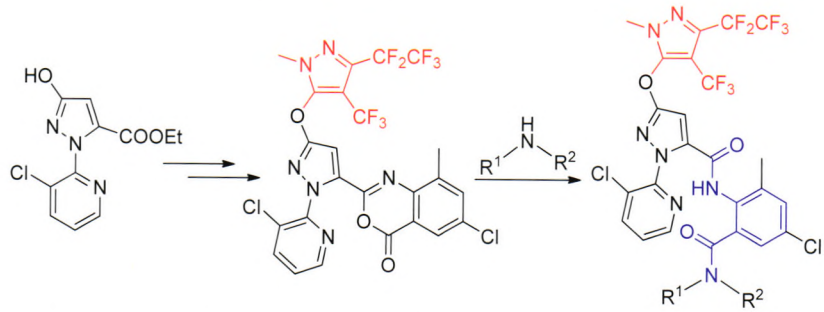
Pd/C-Catalyzed C—H Arylation with Click-Triazoles as Removable Directing Group



Xie, Xiaoqiang; Xing, Yunzhe; Zhang, Guofu*; Ding, Chengrong*
Chin. J. Org. Chem. **2017**, *37*(8), 2124

A novel protocol for Pd/C catalyzed C(sp^2)—H arylation of benzamides with good functional group compatibility under silver-free conditions by using click-triazoles as a removable directing group has been first developed.

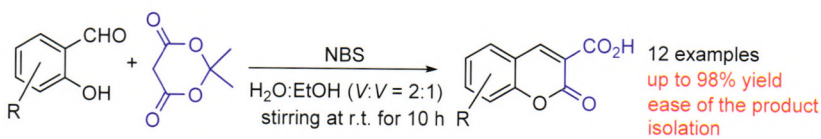
Synthesis and Insecticidal Activity of Novel Anthranilic Diamides Containing Polyfluoroalkyl Pyrazole Moiety



Shi, Jianjun; Ren, Guihua; Wu, Ningjie; Liu, Xinghai; Xu, Tianming; Tan, Chengxia*
Chin. J. Org. Chem. **2017**, *37*(8), 2131

A series of novel anthranilic diamides containing polyfluoroalkyl pyrazole were synthesized. The bioassay results indicated that some of the title compounds exhibited moderate to excellent insecticidal activities against *Mythimna separata* Walker, *Prodenia litura* Fabricius and *Plutella xylostella* Linnaeus.

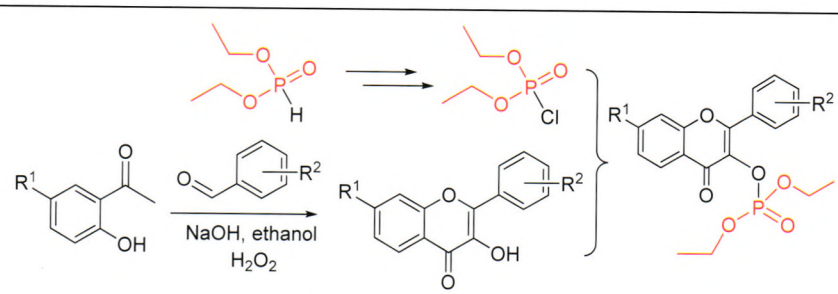
N-Bromosuccinimide Mediated the Reaction of 2-Hydroxyaryl Aldehydes with Meldrum's Acid for Synthesis of Coumarin-3-carboxylic Acids



Ruan, Hongli; Zhang, Jingyuan; Sun, Sai; Yang, Ying; Zhu, Xiaolei; Lü, Chengwei*
Chin. J. Org. Chem. **2017**, *37*(8), 2139

A *N*-bromosuccinimide (NBS) promoted, convenient and efficient procedure for the synthesis of coumarin-3-carboxylic acids via the condensation of 2-hydroxyarylaldehydes with Meldrum's acid has been developed at room temperature.

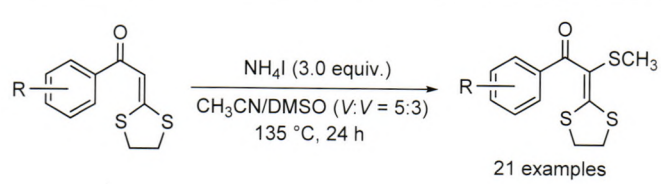
Synthesis and Antibacterial Activity of Novel Phosphonate Derivatives Containing Flavonoids



Huang, Minguo; Ruan, Xianghui; Zhang, Juping; Li, Qin; Wang, Yihui; Chen, Lijuan; Zhang, Cheng; Li, Pu; Xue, Wei*
Chin. J. Org. Chem. **2017**, *37*(8), 2145

By introducing flavonoids group into H-phosphonate, 14 novel phosphonate derivatives containing flavonoids unit were designed and synthesized, and their antibacterial activities were evaluated via turbidimeter test *in vitro*.

Metal-Free Thiomethylation of α-Oxoketene Dithioacetals



Zhang, Haifeng; Bao, Hanyang; Xu, Zheng; Liu, Yunkui*
Chin. J. Org. Chem. **2017**, *37*(8), 2153

With dimethyl sulfoxide as a source of thiomethyl group and NH_4I as a promotor, the thiomethylation of α-oxoketene dithioacetals has been achieved to afford thiomethylated α-oxoketene dithioacetals in moderate to good yields. The optimized reaction conditions were established through systematic investigations of solvents, temperature, time, promotors and their dosages in the reaction.

CONTENT

HIGHLIGHTS

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