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Youji Huaxue

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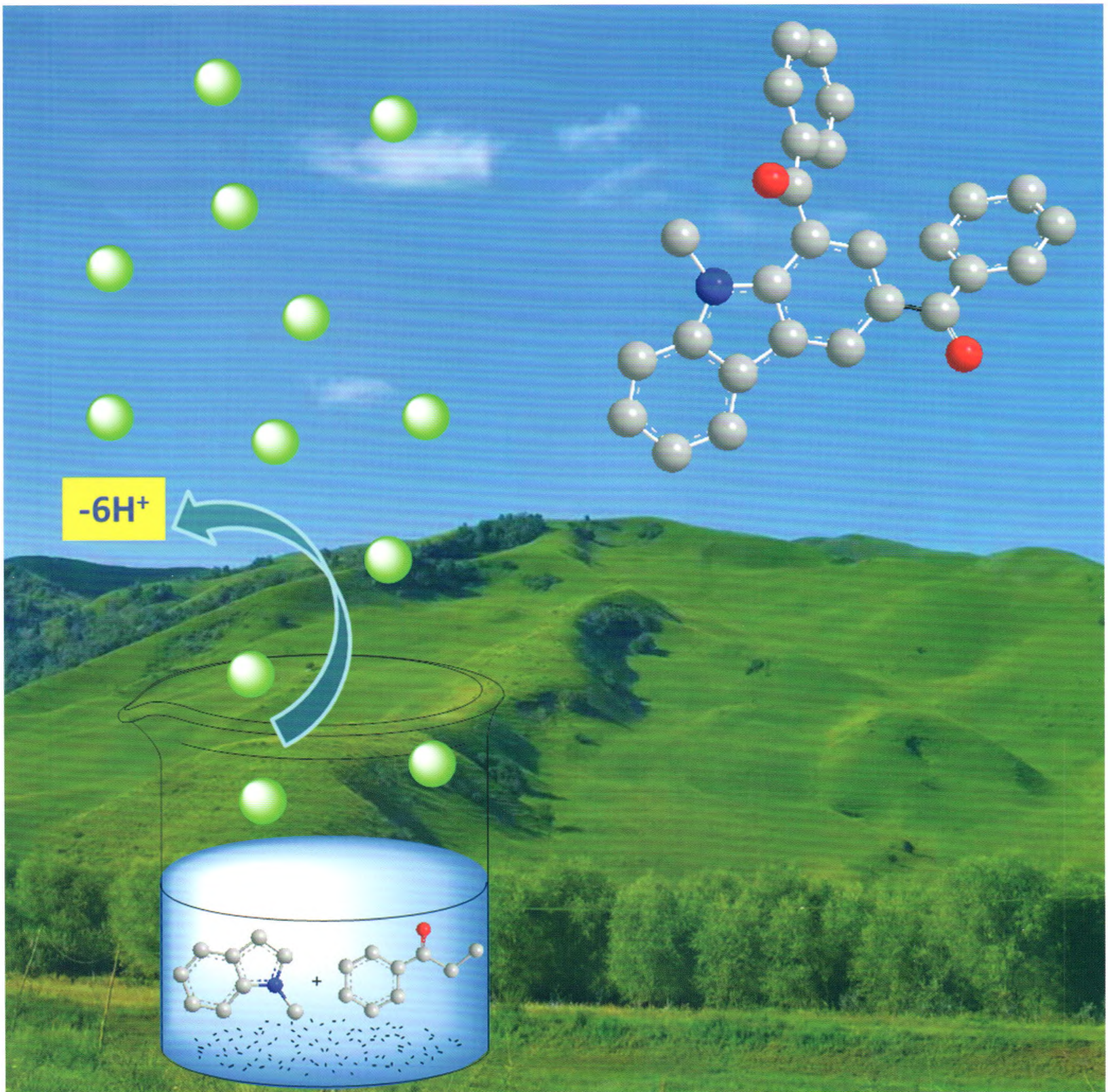

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(YOUJI HUAXUE)

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综述与进展

研究论文

* 通讯联系人.

研究简报

亮点介绍

Chinese Journal of Organic Chemistry

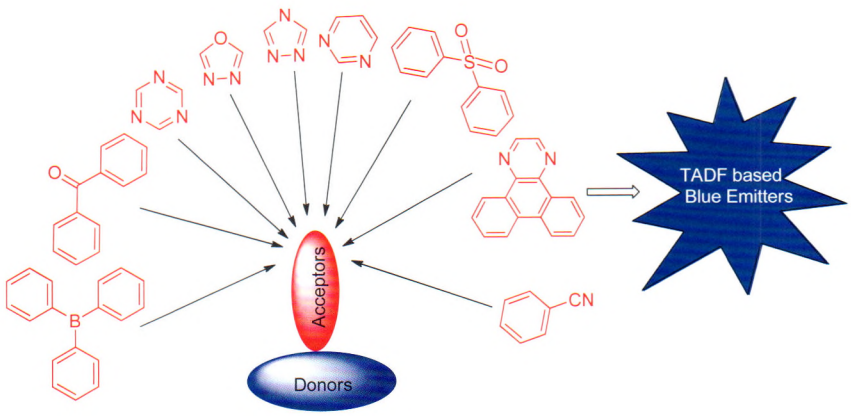
Vol. 37 No. 10 October 2017

On the Cover

An efficient method for the facile synthesis of carbazoles via Pd-catalyzed dehydrogenative cross-coupling of indoles with *in situ* generated aryl vinyl ketones from statured ketones is achieved by Su and coworkers on page 2655. This protocol obviates the need for additional preparation steps of aryl vinyl ketones and therefore opens up a new door to synthesis of carbazoles in an atom- and step-economical fashion.

REVIEWS

Progress on Donor-Acceptor Type Thermally Activated Delayed Fluorescence Based Blue Emitters

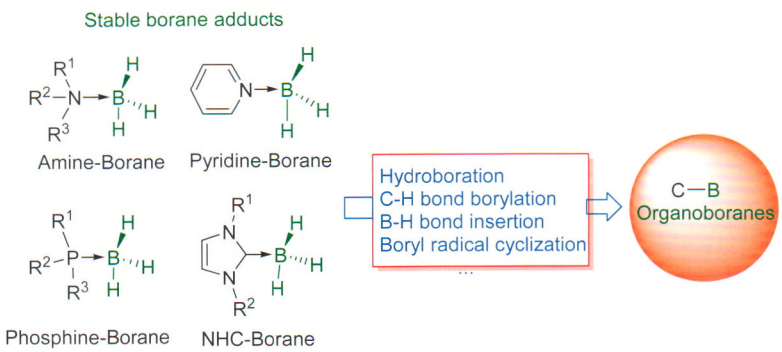


The recent progress in research of donor-acceptor type blue thermally activated delayed fluorescence (TADF) emitters and organic light-emitting diodes (OLEDs) according to the latest research by different acceptors including triazine, oxadiazole, triazole, pyrimidine, diphenyl ketone, cyano, triphenyl boron, 1,4-diazatriphenylene and diphenyl sulfoxide derivatives.

Tan, Jihua; Huo, Yanping*; Cai, Ning; Ji, Shaomin; Li, Zongzhi; Zhang, Li

Chin. J. Org. Chem. **2017**, *37*(10), 2457

Progresses on the Application of Stable Borane Adducts in the Synthesis of Organoborons



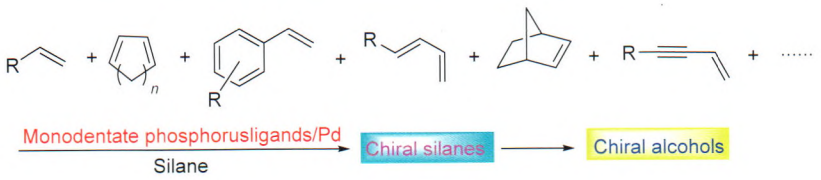
The applications of the stale borane adducts as terminal boron reagents in hydroboration of alkenes or alkynes, C—H bond borylation, carbene insertion into B—H bonds, cascade cyclization initiated by boryl radicals, and substitutions, which provide new methods for the preparation of organoborons are reviewed.

Yang, Jimin; Li, Ziqi; Zhu, Shoufei*

Chin. J. Org. Chem. **2017**, *37*(10), 2481

CONTENT

Application of Pd-Monodentate Phosphorus Catalysts in the Asymmetric Hydrosilylation Reactions of Alkenes

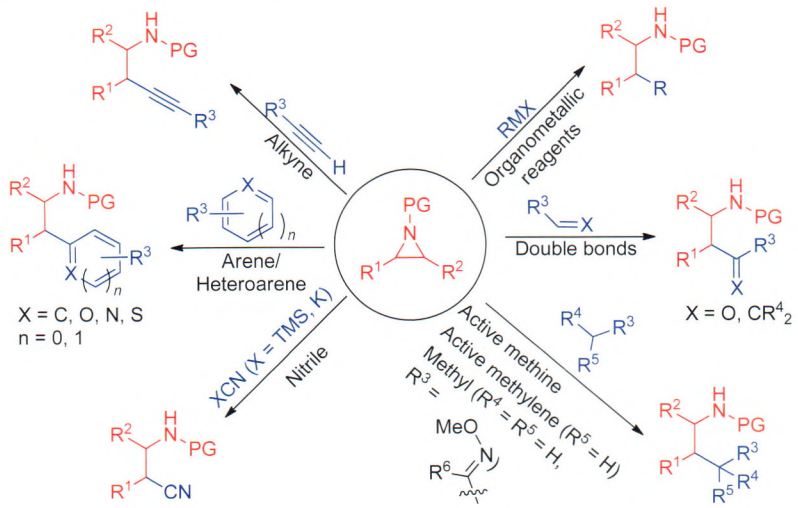


Zhang, Feng*; Liu, Xianghua; Liu, Wei; Deng, Guojun

Chin. J. Org. Chem. **2017**, *37*(10), 2555

In the past decades, a wide variety of chiral monodentate phosphorus ligands have been developed because of their stable structure, facile synthesis, convenient modification, unique efficiency. Herein, the recent advances in asymmetric hydrosilylation of alkyl-substituted alkenes, styrene derivatives, 1,3-dienes and other carbon-carbon double bond compounds catalyzed by palladium monodentate phosphorus catalysts are summarized. The perspective is also discussed.

Research Progress in the Ring-Opening Reactions of Aziridines by Carbon Nucleophiles

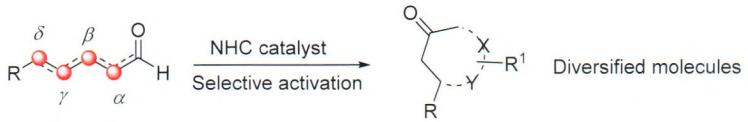


Chu, Xu; Chang, Honghong; Gao, Wenchao; Wei, Wenlong*; Li, Xing*

Chin. J. Org. Chem. **2017**, *37*(10), 2569

The recent progress in ring-opening reactions of aziridines by various carbon nucleophiles, such as alkynes, nitriles, arenes, heteroarenes, active methylene compounds, organometallic reagents and so on, is reviewed. Moreover, the prospects of future development are also discussed.

Progress of Organic Reactions Catalyzed by *N*-Heterocyclic Carbenes

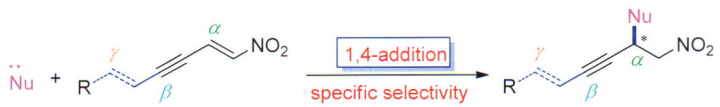


Wang, Ao; Xiao, Yonglong; Zhou, Yu*; Xu, Jinyi; Liu, Hong*

Chin. J. Org. Chem. **2017**, *37*(10), 2590

N-Heterocyclic carbine plays important role in building complex molecules in organic synthesis for the characteristics of umpolung. Some special Lewis bases and oxidants can induce carbine reaction with carbonyl to form Breslow intermediates, enol and homoenolate, which expand the reaction greatly. In this paper, the recent progresses in organic catalytic reactions including Stetter reaction, a^3-d^3 umpolung catalyzed by carbines are reviewed.

Recent Progress on Polyconjugated Nitrodienynes/Nitroenynes: Synthesis and Applications



Liu, Teng*; Liu, Jianjun; He, Chixian; Cheng, Feixiang

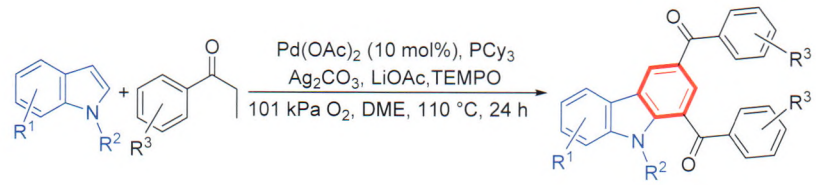
Chin. J. Org. Chem. **2017**, *37*(10), 2609

Polyconjugated nitrodienynes/nitroenynes as nitroolefin derivatives are good kind of electrophiles and have been widely used in organic synthesis. Herein we summarize the synthesis and applications of polyconjugated nitrodienynes/nitroenynes, highlighting the specific selectivity in organic synthesis, as well as the synthetic utility toward complex molecules.

CONTENT

ARTICLES

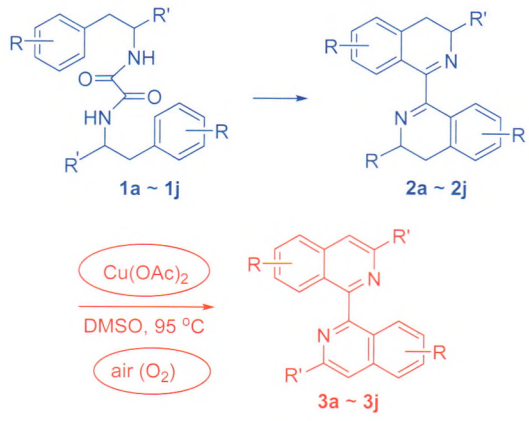
Construction of Carbazoles by Palladium-Catalyzed Direct Cross-Coupling of Indoles with *in situ* Generated Aryl Vinyl Ketones



The synthesis of carbazoles via Pd-catalyzed direct cross-coupling of indoles with *in situ* generated aryl vinyl ketones by using statured ketones as the olefins source is described. This protocol obviates the need for additional preparation steps of aryl vinyl ketones and therefore opens up a new door to synthesis of carbazoles in an atom- and step-economical fashion.

Zhou, Quanlong; Zhu, Changlei; Wu, Ge; Zhang, Yuanfei; Zhang, Min*; Su, Weiping*
Chin. J. Org. Chem. **2017**, *37*(10), 2655

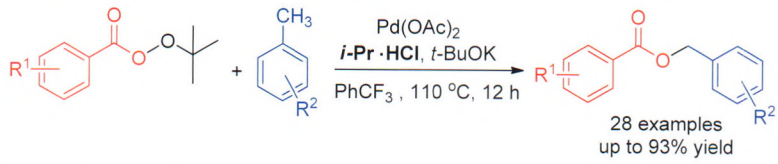
Synthesis of 1,1'-Biisoquinolines via Cu-Catalyzed Oxidative Aromatization



A new method for practical synthesis of 1,1'-biisoquinolines is described. 3,3',4,4'-Tetrahydro-1,1'-biisoquinolines (**2a**~**2j**), which could be readily prepared from *N*,*N*'-diphenethyloxalamides (**1a**~**1j**) via Bischler-Napieralski cyclization, were efficiently converted into 1,1'-biisoquinolines (**3a**~**3j**) via $Cu(OAc)_2$-catalyzed aerobic oxidative aromatization in dimethyl sulfoxide.

Lü, Xia; Meng, Tianzhuo; Zheng, Bo; Zhang, Yi; Wu, Jiajia; Shi, Xiaoxin*
Chin. J. Org. Chem. **2017**, *37*(10), 2663

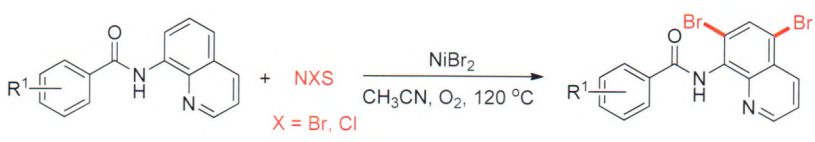
Pd(II)-Catalyzed Synthesis of Benzyl Benzoates via Benzyl C(sp^3)—H Activation



An efficient Pd(II)-catalyzed synthesis of benzyl benzoates via direct functionalization of benzyl C(sp^3)—H bonds was developed. This method features high tolerance of functional groups, mild reaction condition, and high chemoselective when there are multiple active C(sp^3)—H bonds. A plausible oxidative coupling mechanism was proposed on the basis of mechanistic studies.

Duanmu, Dandan; Leong, Pak-kin; Jiang, Qibai*; Yan, Hong*
Chin. J. Org. Chem. **2017**, *37*(10), 2669

Nickel-Catalyzed C—H Halogenation of 8-Aminoquinolines for the Synthesis of C(5) and C(7) Di-halogenated Quinolines

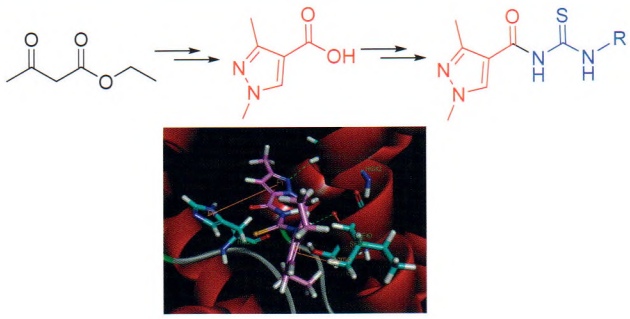


A simple and efficient nickel-catalyzed oxidative halogenation (Cl, Br) of C(5) and C(7) C—H bond of 8-aminoquinoline amides has been developed. This method employed low-cost and easy availability nickel as catalyst and oxygen as oxidant. The reactions have good functional groups compatibility, giving highly selective C(5) and C(7) di-halogenated products in good to excellent yields.

Hao, Wenyan*; Wang, Yuyun; Yang, Guomin; Liu, Yunyun*
Chin. J. Org. Chem. **2017**, *37*(10), 2678

CONTENT

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

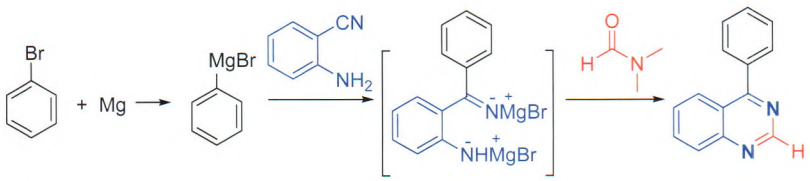


Sun, Nabo; Shen, Zhonghua; Zhai, Zhiwen; Han, Liang; Weng, Jianquan; Tan, Chengxia; Liu, Xinghai*

Chin. J. Org. Chem. **2017**, *37*(10), 2705

A series of pyrazole acyl thiourea compounds were designed and synthesized. The fungicidal activity results indicated that some of them possessed good inhibitory against *Botryospuaeria berengeriana*. The docking mode of the compound **6k** was done.

Catalyst-Free One-Pot Synthesis of 4-Substituted Quinazolines

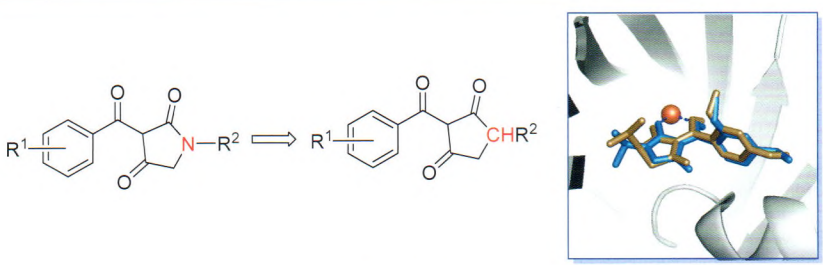


Li, Lingjie; Zhang, Jing; Tang, Yu*; Xu, Kaitian; Zhang, Yuanming*

Chin. J. Org. Chem. **2017**, *37*(10), 2711

A series of 4-sbustituted quinazolines have been synthesized via catalyst-free one-pot novel method. The effects of electron effect and steric hindrance on the reaction were discussed. A reasonable novel mechanism concerning repeating nucleophilic addition and elimination to give quinazoline has been proposed.

Synthesis, Herbicidal Activities of Novel Triketone Compounds Containing 4-Substituted Cyclopentane-1,3-dione Moiety

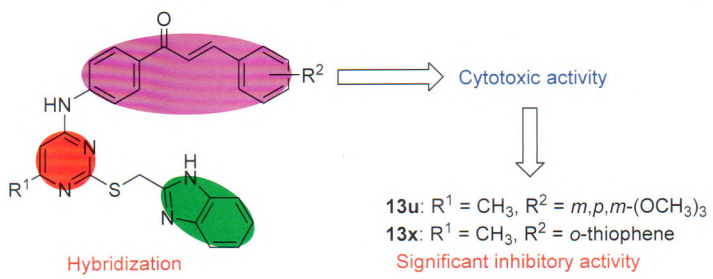


Xu, Haizhen*; Xie, Lifen; Han, Tingfeng; He, Jingli; Zhu, Youquan*

Chin. J. Org. Chem. **2017**, *37*(10), 2717

In this paper, a series of novel triketone derivatives containing 4-substituted cyclopentane-1,3-dione were synthesized from cyclopentane-1,3-dione in six steps. The preliminary greenhouse bioassay results indicated that some compounds showed obvious inhibition effects against *Brassica campestris*, and the herbicidal activity was more than 90% at 1500 g/ha.

Synthesis and Antitumor Activity Evaluation of 2,4,6-Trisubstituted Pyrimidine Derivatives



Song, Panpan; Li, Na; Cui, Fei; Xin, Jingchao; Zhang, Xiaosong; Cao, Qinpo; Wang, Chaojie; Dai, Wenjie; Meng, Xiangchuan; Liu, Meng; Chang, Tonghang; Liu, Qingyi; Sun, Yuehong; Ke, Yu*; Zhang, Qiurong*; Liu, Hongmin*

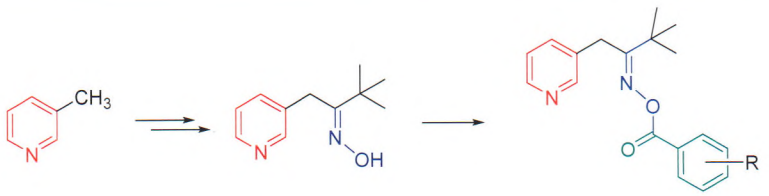
Chin. J. Org. Chem. **2017**, *37*(10), 2725

A series of 2,4,6-trisubstituted pyrimidine derivatives bearing chalcone moiety were synthesized and evaluated for anticancer activity on four human cancer cell lines including EC-109, MGC-803, HepG-2 and MDA-MB-231 by CCK-8 assay. Among them, compound **13u** showed excellent inhibitory effects with IC_{50} values of 0.99 and 1.77 μmol•L^{-1} against MGC-803 and MDA-MB-231, respectively.

CONTENT

NOTES

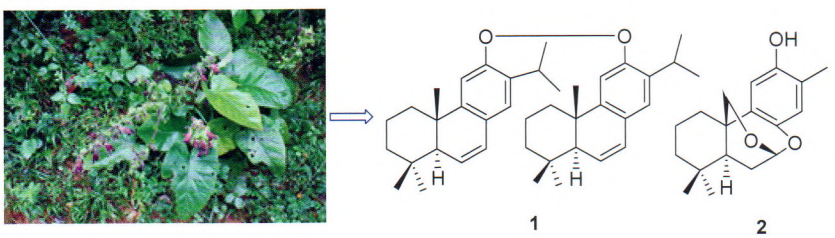
Synthesis of Novel 3,3-Dimethyl-1-(pyridin-3-yl)butan-2-one Oxime Esters and Evaluation of Their Antifungal Activity



A series of novel pyridine derivatives containing oxime esters have been synthesized from 3-methylpyridine, ethyl pivalate, hydroxylamine hydrochloride and substituted benzoic acid. Some target compounds displayed high antifungal activity against *B. cinerea* and *S. sclerotiorum*.

Zan, Ningning; Zhang, Yulei; Zhang, Shuai; Liu, Si; Jiang, Lin*
Chin. J. Org. Chem. **2017**, *37*(10), 2767

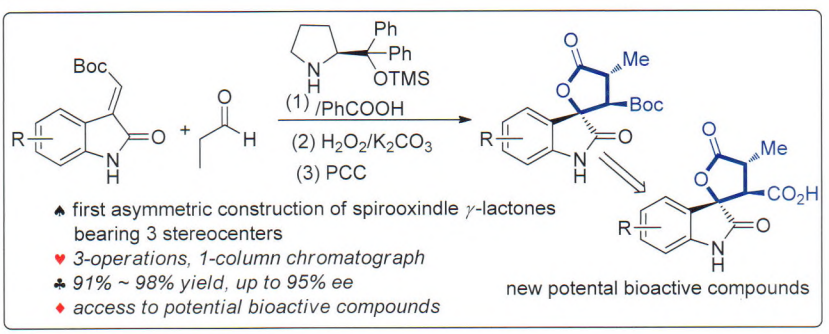
Diterpenes from the Roots of *Salvia kiaometiensis* Lévl



Through a variety of chromatographic techniques and spectroscopic methods, sixteen diterpenes were isolated and identified from the ethanol extraction of the roots of *Salvia kiaometiensis* Lévl. Their structures were identified by spectroscopic methods, as well as by comparison of their spectral data with those of related compounds. 6,8,11,13-Abietatetraen-12-ol dimer (**1**) is a new abietane diterpenes dimer, and kiaometin (**2**) is a new 7,8:7,20-diepoxy-nor-abietane diterpenes. All of the diterpenes were isolated from this plant for the first time.

Xia, Guanghui; Li, Yuanping; Bi, Dewen; Zhang, Lanjun; Li, Hongzhe*; Gao, Linhua; Wang, Liqin*
Chin. J. Org. Chem. **2017**, *37*(10), 2772

An Efficient Asymmetric Construction of Novel Spiro-Fused 2-Oxindoles/α-Methyparaconic Ester



An efficient asymmetric construction of novel spiro-fused 2-oxindole/α-methyparaconnic ester is reported, which was offered via organocatalytic Michael reaction of propaldehyde and olefinic oxindoles, with subsequent H_2O_2/K_2CO_3 system-mediated α-hydroxylation/hemiacetalization cascade reaction under oil/water two-phase conditions, and final oxidative γ-lactonization by pyridinium chlorochromate (PCC).

Guo, Yanjun; Meng, Chenhong; Liu, Xueli; Xu, Danqian; Xia, Aibao*
Chin. J. Org. Chem. **2017**, *37*(10), 2776

HIGHLIGHTS

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