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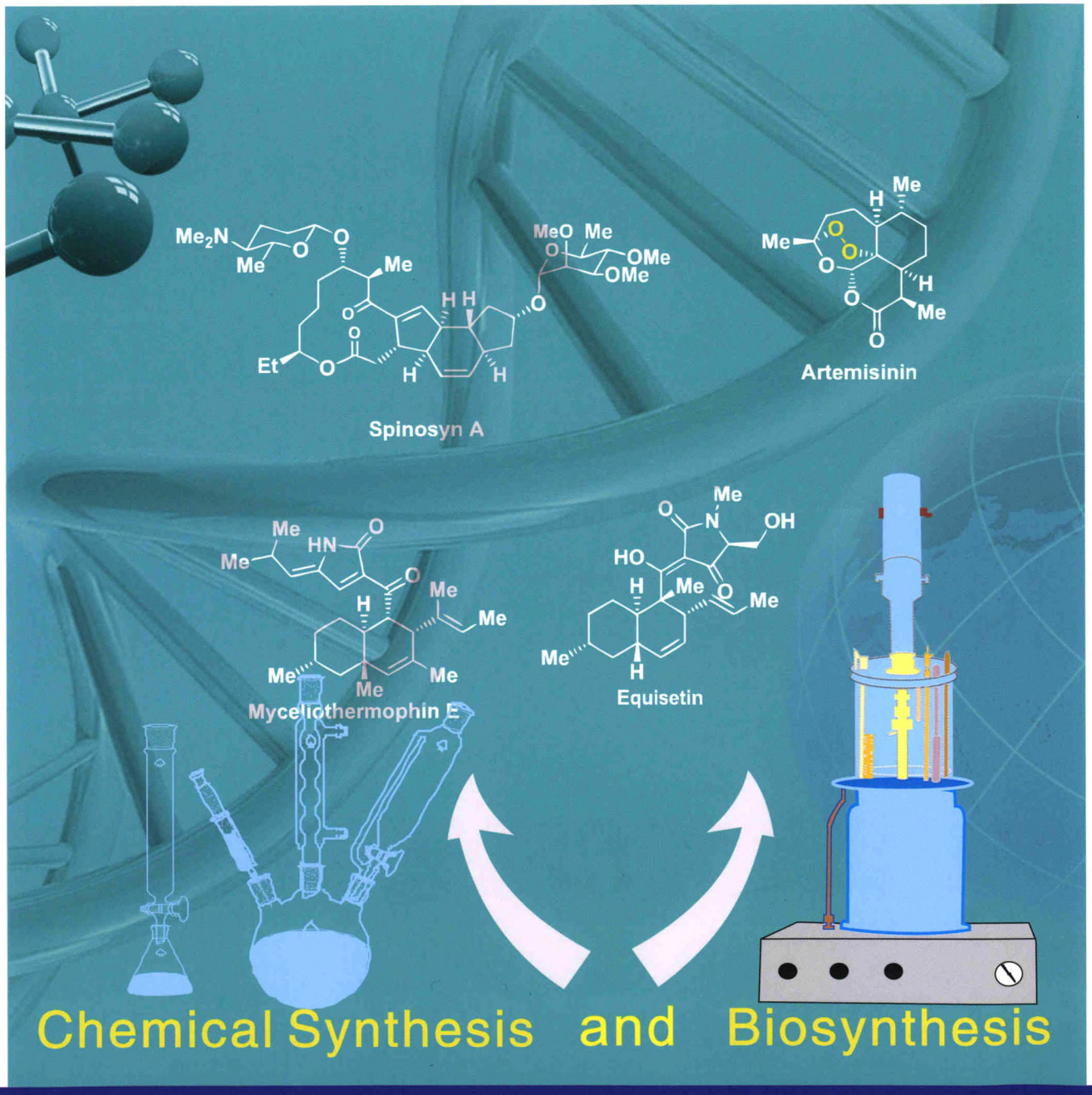

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目 次

综述与进展

* 通讯联系人.

研究论文

研究简报

Chinese Journal of Organic Chemistry

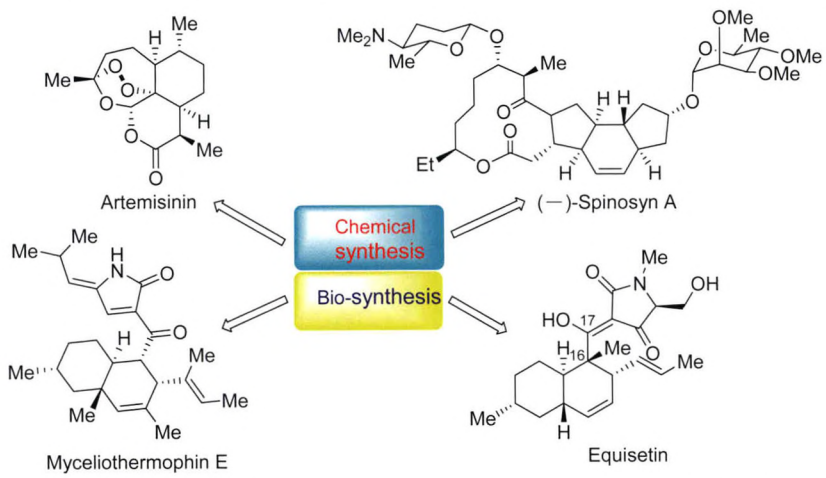
Vol. 38 No. 9 September 2018

On the Cover

The recent progresses in the total synthesis of artemisinin, spinosyn A, myceliothernophin E and equisetin are reviewed by Li, Zhang and Gao on page 2185, with the combination of chemical synthesis and biosynthesis strategies. The rapid synthesis of bioactive natural products and their derivatives may be accerlated by this new strategy.

REVIEWS

Total Synthesis of Complex Natural Products: Combination of Chemical Synthesis and Biosynthesis Strategies

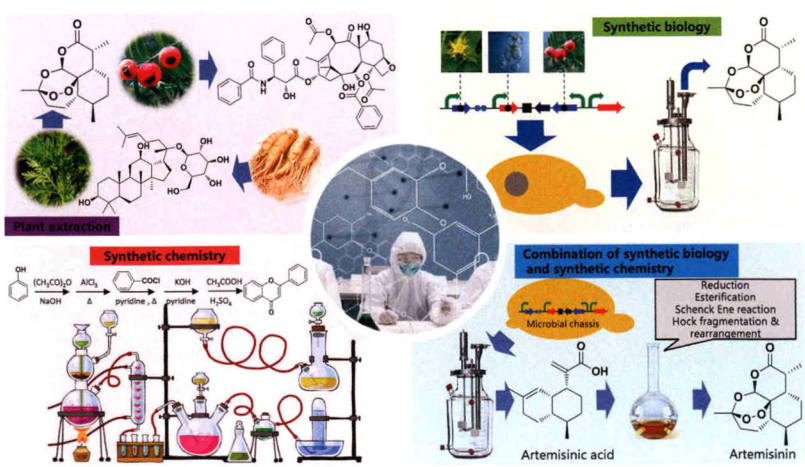


Li, Xiaojun; Zhang, Wanbin*; Gao, Shuanhu*

Chin. J. Org. Chem. **2018**, *38*(9), 2185

The recent progress in the synthesis of artemisinin, spinosyn A, myceliothernophin E and equisetin is reviewed. The combination of chemical synthesis and biosynthesis strategies is emphasized.

Route to Artificially Synthesize Plant Natural Products



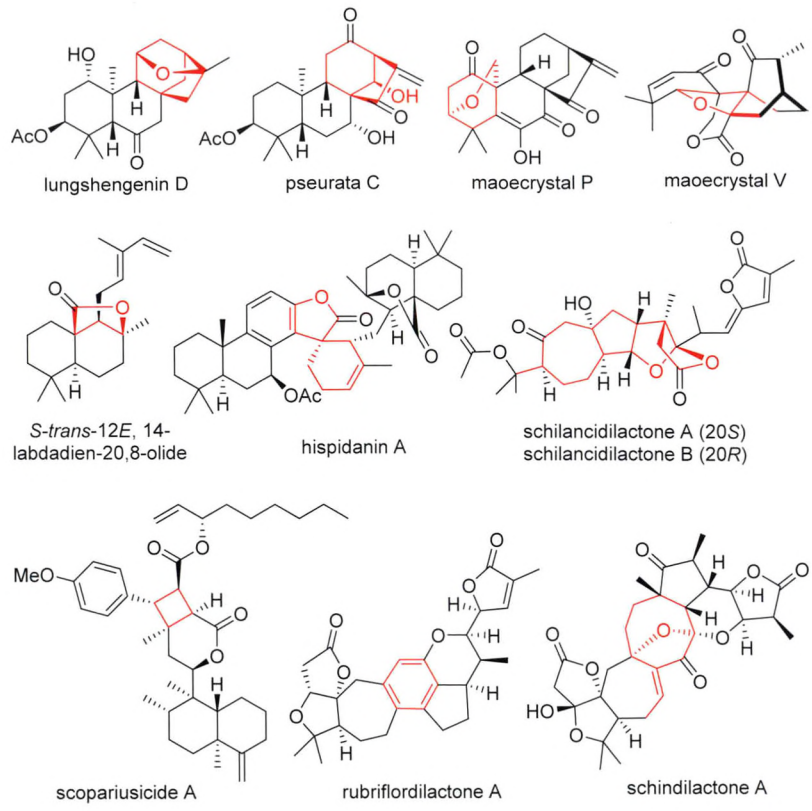
Wang, Pingping; Yang, Chengshuai; Li, Xiaodong; Jiang, Yuguo; Yan, Xing; Zhou, Zhihua*

Chin. J. Org. Chem. **2018**, *38*(9), 2199

The synthetic biology technology brings new strategies to manufacture rare plant natural products with complicated structures at large scale by artificially constructing and optimizing the biosynthesis pathway of target compounds in microbial chassis cells. The research progress on the artificial syntheses of important plant natural products such as artemisinin, ginsenosides, morphinan alkaloids, paclitaxel and vinblastine is reviewed.

CONTENT

Recent Advances in the Synthesis of *Isodon* Diterpenoids and Schinortriterpenoids

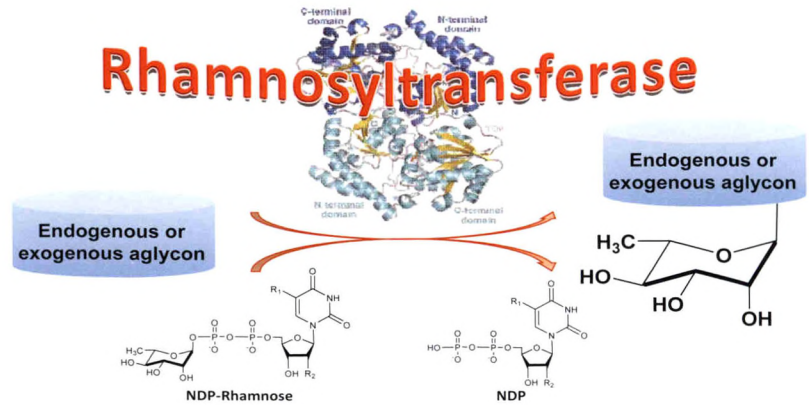


Yan, Bingchao; Hu, Kun; Sun, Handong; Puno, Pematenzin*

Chin. J. Org. Chem. **2018**, *38*(9), 2259

The research of the chemical constituents from the plants of the genus *Isodon* and the Schisandraceae family has been recognized as one of the most outstanding achievements in natrural product research. So far, over 1200 diterpenoids classified into 11 different groups have been reported from the *Isodon* species and more than 200 schinortriterpenoids involving more than 20 skeletons have been isolated from the Schisandraceae species. In this review, the recent advances in the synthesis of *Isodon* diterpenoids and schinortriterpenoids have been reviewed over the past ten years.

Research Progress of Rhamnosyltransferase



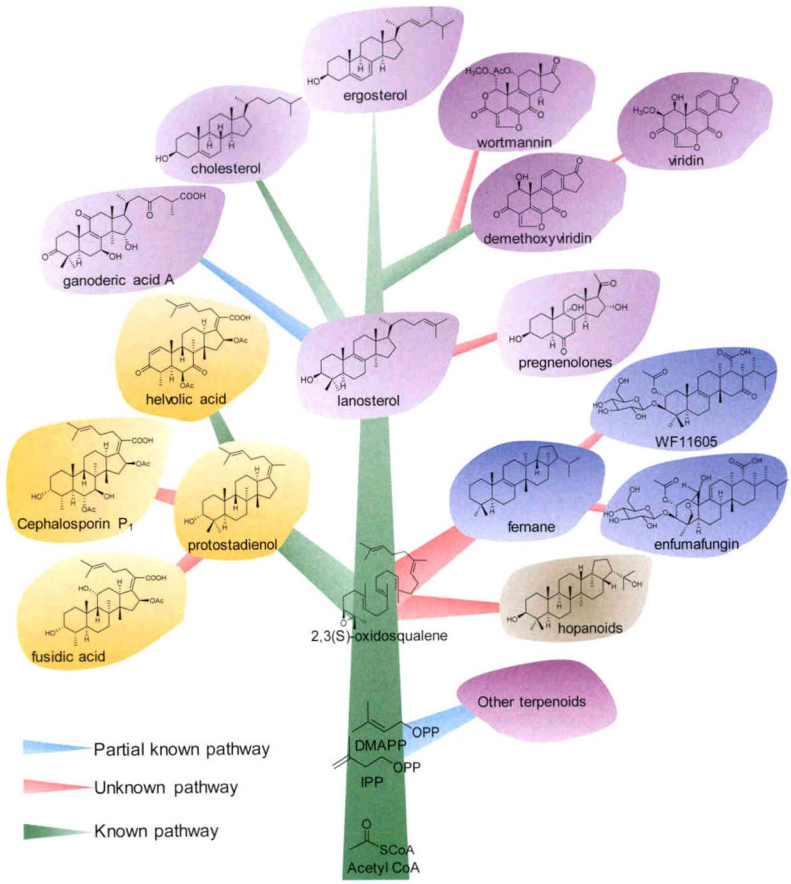
Yan, Yaru; Qi, Bowen; Mo, Ting; Wang, Xiaohui; Wang, Juan; Shi, Shepo*; Liu, Xiao*; Tu, Pengfei*

Chin. J. Org. Chem. **2018**, *38*(9), 2281

Research progresses of rhamnosyltransferase are reviewed based on their enzymatic functions, three dimensional structure investigations, rhamnosyl donors synthesis, enzymatic catalysis promiscuities, and metabolic engineering applications. Finally, the future development and application of them are also prospected.

CONTENT

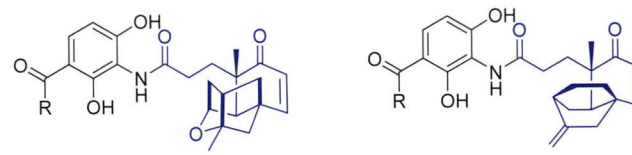
Biosynthesis of Fungal Triterpenoids and Steroids



Gao, Yaohui; Wang, Gaoqian; Huang, Huiyun; Gao, Hao; Yao, Xinsheng; Hu, Dan*
Chin. J. Org. Chem. **2018**, *38*(9), 2335

The recent advances in the biosynthesis of fungal triterpenoids and steroids are summarized.

Biosynthesis, Total Synthesis and Semisynthesis of Platensimycin, Platencin and their Analogues

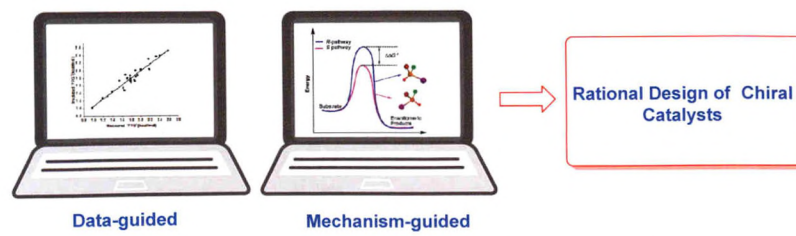


Biosynthesis, total synthesis and semisynthesis

Tian, Kai; Deng, Youchao; Li, Yuling; Duan, Yanwen*; Huang, Yong*
Chin. J. Org. Chem. **2018**, *38*(9), 2348

The emergence of multi-drug resistant bacteria is one of the major public heath crises. Platensimycin and platencin are potent antibacterial drug leads against many gram-postive pathogens. The biosynthesis, total synthesis and semisynthesis of platemycin, platencin and their analogues with important antibacterial and antidiabetic activities are reviewed.

Rational Design of Chiral Catalysts Based on Experimental Data and Reaction Mechanism



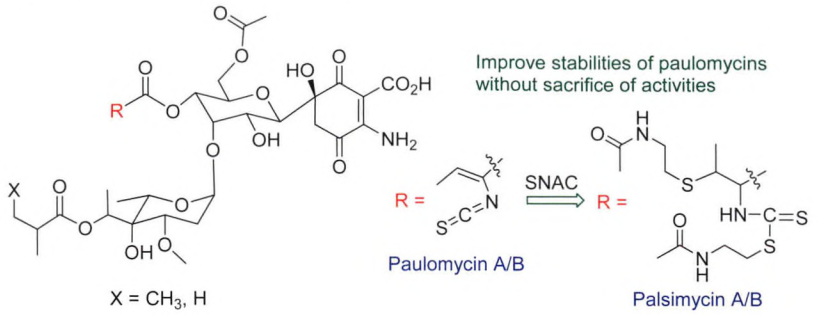
Li, Yao; Luo, Sanzhong*
Chin. J. Org. Chem. **2018**, *38*(9), 2363

The recent progress in rational design of chiral catalysts is reviewed. The approaches for the rational design of organocatalysts, transition metal catalysts and enzymes are mainly discussed. Finally, the future development and application are also prospected.

CONTENT

ARTICLES

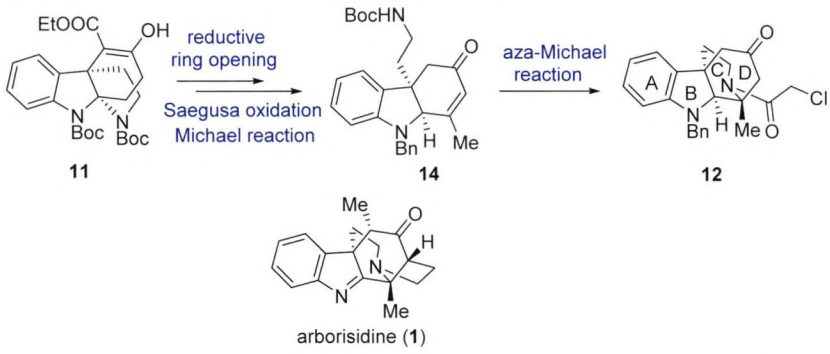
Improvement of Paulomycin Stability by Addition of Paulic Acid



Four new paulomycin derivatives of palsimycins A, B, C, and D were obtained when small molecule thiol compound *N*-acetylcysteamine (SNAC) was added to the fermentation broth of paulmycin producing strain. The antibacterial activity evaluation showed that the minimal inhibit concentrations (MICs) of palsimycin A and palsimycin B against the tested strains were at the same level as those of paulomycin A and paulomycin B.

Tang, Yue; Wang, Min; Ding, Yong; Li, Jine; Chen, Yihua*
Chin. J. Org. Chem. **2018**, *38*(9), 2420

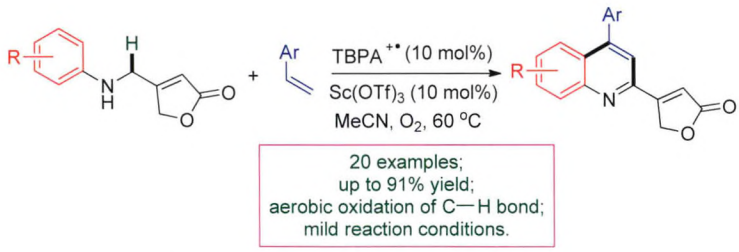
Asymmetric Synthesis of the Tetracyclic Skeleton of Natural Product Arborisidine



Asymmetric synthesis of the tetracyclic skeleton of arborisidine is reported. Starting from the enantiomerically pure compound **11**, a reductive ring-opening method was applied to open the pyrrolidine ring of the substrate. The C(15)-C(16) double bond and the methyl group at C(16) of A/B/D tricyclic skeleton were introduced via Saegusa oxidation and Michael reaction respectively. Finally, an intramolecular aza-Michael addition reaction was used as a key reaction to construct the C-ring and C(16) quaternary center, which led to the efficiently asymmetric synthesis of A/B/C/D tetracyclic skeleton of arborisidine.

Chen, Zhitao; Xiao, Tao; Song, Hao*; Qin, Yong*
Chin. J. Org. Chem. **2018**, *38*(9), 2427

Synthesis of Quinoline Derivatives Containing Lactone Structure Promoted by Radical Cation Salt



Using aniline derivatives containing lactone structure and styrenes as the starting materials, a series of lactone substituted quinolines were constructed efficiently by oxidative Povarov reaction, promoted by radical cation salt. This reaction provided a new method to achieve the construction of functionalized quinoline skeletons. The mechanistic study revealed that the oxidation of the saturated C—H bond was mediated by free radical intermediate.

Zhang, Xuewen; Li, Pengfei; Yuan, Yu*; Jia, Xiaodong*
Chin. J. Org. Chem. **2018**, *38*(9), 2435

CONTENT

NOTES

HIGHLIGHTS