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主要研究领域为天然产物的生物合成与生物转化。先后负责承担了多项基金项目，发表学术论文40余篇，其中多数发表在《SCI》刊载期刊上。申请了2项发明专利；参加编写了3部著作；多次被邀为国际知名杂志《Tetrahedron》、《Tetrahedron Letters》、《Process Biochemistry》、《Journal of Molecular Catalysis B: Enzymatic》、《Molecular Biology Reports》、《Journal of Asian Natural Products Research》及国内杂志《药学学报》、《植物生理学通讯》、《中国药学》（英文版）论文稿件评阅人。

#### 主要研究方向：

致力于天然产物的生物合成与生物转化，将生物学方法应用于天然产物的合成与结构改造研究中，发现、开发创新药物，主要研究方向如下：

##### （1）天然药物生物酶法催化合成

①天然产物的组合生物催化：利用生物酶催化法将活性天然产物进行结构修饰改造，获得结构多样化的衍生物，结合化学衍生法建立小型的拟天然产物“分子库”，通过药理活性评价，获得活性先导化合物，并进行创新药物的研制；

②天然产物的定向生物转化：利用生物酶催化法将易得、资源丰富、低附加值的天然产物进行定向地选择性生物转化，生产高附加值的活性化合物或药物，或其中间体；以及进行手性药物与其中间体的酶法手性合成与拆分；

③进行具有重要意义的生物催化反应相关酶的纯化、基因克隆及其表达研究，揭示生物转化的基本规律。

##### （2）天然药物新资源的研究

①进行珍稀、濒危且有重要药用价值的药用植物与真菌的培养及其活性成分的生产，缓解资源危机；

②进行特殊生境微生物新药源的拓展，包括海洋微生物及药用植物内生真菌等活性化学成分的研究，拓展天然药物新资源；

③开展药用植物、药用真菌代谢组学研究,明确活性化合物的生物合成途径,对其生物合成途径中关键酶及其相关基因进行克隆、表达及调控,高效生产目标化学成分;或改变相关基因,获得“非天然天然产物”(unnatural natural products)。

#### 近年发表的主要学术论文(\*为通讯作者)

1. Jungui Dai\*, Runjiang Qu, Jian-hua Zou, Xiaoguang Chen\*. Structural diversification of taxanes by whole-cell biotransformation. *Tetrahedron*, (published online 20 June, 2008).
2. Jian-Hua Zou, Huixia Du, Yi Zhang, Jungui Dai\*, Dali Yin, Xiaoguang Chen. Biotransformation and multidrug resistance reversal potency of polyoxygenated taxadienes. *J. Mol. Catal. B: Enzym.* (published online 19 January, 2008).
3. Lin Yang, Jungui Dai\*. Biotransformation of tetrahydro- $\alpha$ -santonin by *Absidia coerulea*. *Nat. Prod. Res.*, 2008, 22, 499–506.
4. Jianhua Li, Jungui Dai\*, Xiaoguang Chen, Ping Zhu. Microbial Transformation of Cephalomannine by *Luteibacter* sp. *J. Nat. Prod.*, 2007, 70, 1846–1849.
5. Lin Yang, Runjiang Qu, Jungui Dai\*, Xiaoguang Chen. Specific methylation and epoxidation of sinenxan A by *Mucor genevensis* and the tumor reversing activities of the metabolites. *J. Mol. Catal. B: Enzym.*, 2007, 46, 8–13.
6. Toshiaki Hasegawa, Jiao Bai, Jungui Dai, Liming Bai, Junichi Sakai, Shigenori Nishizawa, Yuhua Bai, Midori Kikuchi, Mariko Abe, Takao Yamori, Akihiro Tomida, Takashi Tsuruo, Katsutoshi Hirosee, Masayoshi Ando\*. Synthesis and structure–activity relationships of taxuyunnanine C derivatives as multidrug resistance modulator in MDR cancer cells. *Bioorg. Med. Chem. Lett.*, 2007, 17, 3722–3728.
7. Jian-hua Zou, Jungui Dai,\* Xiaoguang Chen, Jing-quan Yuan. Pentacyclic triterpenoids from leaves of *Excoecaria agallocha*. *Chem. Pharm. Bull.*, 2006, 54: 920–921.
8. Lin Yang, Jungui Dai,\* Junichi Sakai, Masayoshi Ando. Biotransformation of  $\alpha$ - and  $6\beta$ -santonin by fungus and plant cell cultures. *J. Asian Nat. Prod. Res.*, 2006, 8: 317–326.
9. Jungui Dai\*, Jiao Bai, Junichi Sakai, Masayoshi Ando. A new taxoid from a callus culture of *Taxus cuspidata* as an MDR reversal agent. *Chem. Pharm. Bull.*, 2006, 54: 306–309.
10. Yulian Zhan, Jian-hua Zou, Xiaojun Ma, Jungui Dai\*. Biotransformation of 14-deacetyl sinenxan A by *Ginkgo* cell suspension cultures and the cytotoxic activity evaluation. *J. Mol. Catal. B: Enzym.*, 2005, 36: 43–46.
11. Jungui Dai,\* Lin Yang, Junichi Sakai, Masayoshi Ando. Combined biotransformations of 4(20), 11-taxadienes. *Tetrahedron*, 2005, 61: 5507–5517.
12. Jungui Dai,\* Lin Yang, Junichi Sakai, Masayoshi Ando. Biotransformation of chinensiolide B and the cytotoxic activities of the transformed products. *J. Mol. Catal. B: Enzym.*, 2005, 33: 87–91.
13. Jungui Dai,\* Lin Yang, Junichi Sakai, Masayoshi Ando. A taxa-

tetraene from microbial transformation of sinenxan A. *Chin. Chem. Lett.*, 2005, 6: 736–738.

14. Lin Yang, Jungui Dai,\* Junichi Sakai, Masayoshi Ando.

Biotransformation of  $\alpha$ -santonin by cell suspension cultures of five plants. *Biotech. Lett.*, 2005, 27: 793–797.

15. Jiao Bai, Jungui Dai, Junichi Sakai, Masayoshi Ando\*. Taxoids and abietanes from callus cultures of *Taxus cuspidata*. *J. Nat. Prod.*, 2005, 68: 497–501.

16. Jiao Bai, Shujun Zhang, Dai Jungui, Masayoshi Ando\*. Production of biologically active taxoids by a callus culture of *Taxus cuspidata*. *J. Nat. Prod.*, 2004, 67: 58–63.

17. Jungui Dai, shujun Zhang, Junichi Sakai, Jiao Bai, Yoshiki Oku, Masayoshi Ando\*. Specific oxidation of C-14 oxygenated 4(20), 11-taxadienes by microbial transformation. *Tetrahedron Lett.*, 2003, 44: 1091–1094.

18. Jungui Dai, Min Ye, Hongzhu Guo, Weihua Zhu, Dayong Zhang, Qiu Hu, Junhua Zheng, Dean Guo\*. Substrate specificity for the hydroxylation of polyoxygenated 4(20),11-taxadienes by *Ginkgo* cell suspension cultures. *Bioorg. Chem.*, 2003, 31: 345–356.

19. Jungui Dai, Min Ye, Hongzhu Guo, Weihua Zhu, Dayong Zhang, Qiu Hu, Junhua Zheng, Dean Guo\*. Biotransformation of 4(20),11-taxadienes by *Platycodon* cell suspension cultures. *J. Asian Nat. Prod. Res.*, 2003, 5: 5–10.

20. Jungui Dai, Meng Zhang, Min Ye, Weihua Zhu, Ji-Yu Guo, Xiao-Tian Liang\*. Biotransformation of 14-deacetoxy-13-oxo sinenxan A by *Ginkgo* cell cultures. *Chin. Chem. Lett.*, 2003, 8: 804–806.

21. Jungui Dai, Min Ye, Hongzhu Guo, Weihua Zhu, Dayong Zhang, Qiu Hu, Junhua Zheng, Dean Guo \*. Regio- and stereo-selective biotransformation of  $2\alpha$ ,  $5\alpha$ ,  $10\beta$ ,  $14\beta$ -tetra-acetoxy-4(20), 11-taxadiene by *Ginkgo* cell suspension cultures. *Tetrahedron*, 2002, 58: 5659–5668.

22. Jixun Zhan, Hongzhu Guo, Jungui Dai, Yuanxing Zhang, Dean Guo\*. Microbial transformations of artemisinin by *Cunninghamella echinulata* and *Aspergillus niger*. *Tetrahedron Lett.*, 2002, 43: 4519–4521.

23. Jungui Dai, Zhuo Gong, Danmeng Zhu, Hongzhu Guo, Junhua Zheng, Dean Guo \*. Biotransformation of gastrodin by cell suspension cultures of *Catharanthus roseus*. *Acta Botanica Sinica*, 2002, 44: 377–378.

24. Jungui Dai, Yajun Cui, Weihua Zhu, Min Ye, Hongzhu Guo, Dayong Zhang, Qiu Hu, Junhua Zheng, Dean Guo \*. Biotransformation of  $2\alpha$ ,  $5\alpha$ ,  $10\beta$ ,  $14\beta$ -tetra-acetoxy-4(20), 11-taxadiene by cell suspension cultures of *Catharanthus roseus*. *Planta Med.*, 2002, 68: 1113–1117.

25. Min Ye, Jungui Dai, Hongzhu Guo, Yajun Cui, Dean Guo\*. Glucosylation of cinobufagin by cultured suspension cells of *Catharanthus roseus*. *Tetrahedron Lett.*, 2002, 43, 8535–8538.

26. Jungui Dai, Hongzhu Guo, Dandan Lu, Weihua Zhu, Dayong Zhang, Junhua Zheng, Dean Guo\*. Biotransformation of  $2\alpha$ ,  $5\alpha$ ,  $10\beta$ ,  $14\beta$ -tetra-acetoxy-4(20), 11-taxadiene by *Ginkgo* cell suspension cultures. *Tetrahedron Lett.*, 2001, 42, 4677–4679.

### 申请专利

1. 梁晓天, 郭积玉, 尹大力, 张猛, 朱蔚华, 戴均贵, 韩锐, 刘红岩. 新的紫杉烷衍生物及其制法和用途. 公开号: CN 1393438 A.
2. 戴均贵, 陈晓光, 曲润江, 尹大力, 李洪燕. C-6、C-7及C-9位具有含氧取代基的紫杉烷类化合物. 申请号: 200710099355.0

### 参编著作

1. 分子生药学, 第二版 (ISBN: 7810719300, 黄璐琦主编, 参加编写), 北京大学医学出版社, 2006
2. 天然产物研究进展 (ISBN: 781072790, 方起程主编, 参加编写), 中国协和医科大学出版社, 2006
3. The chemistry, metabolism and biological activities of ginseng (英文版, ISBN: 7502591648, 张均田主编, 参加编写), 化学工业出版社, 2006

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