Gao-Wei Zheng

Department: School of Biotechnology

Professional field: Biocatalysis and Biosynthesis

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Profile

The long-term goal of his research is to discover and create novel enzymes for the synthesis of chiral amines, and the synthesis of complicate chiral compounds from available materials through synthetic biology approaches.

2001-2005 B.S., Sichuan University, China

2005-2011 Ph.D., East China University of Science and Technology

2011-2013 Assistant Prof., East China University of Science and Technology

2015-2016 Postdoctor, University of Manchester, UK

2013-2019 Associate Prof., East China University of Science and Technology

2019-presentProfessor, East China University of Science and Technology

Research Field

(1)Development of novel enzymes for organic synthesis

(2)Exploration of enzyme structure and function, and enzyme engineering

(3)Multienzyme cascade reactions

Research results and selected published papers

[1] Xu-Min Gong, Zhen Qin, Fu-Long Li, Bu-Bing Zeng, Gao-Wei Zheng*, Jian-He Xu*.Development of an Engineered Ketoreductase with Simultaneously Improved Thermostability and Activity for Making a Bulky Atorvastatin Precursor.ACS Catal., 2019, 9, 147–153. (IF: 12.2)

[2] Fei-Fei Chen,†Gao-Wei Zheng,†Lei Liu, Hao Li, Qi Chen, Fu-Long Li, Chun-Xiu Li, and Jian-He Xu*. Reshaping the Active Pocket of Amine Dehydrogenases for Asymmetric Synthesis of Bulky Aliphatic Amines. ACS Catal. 2018, 8, 2622−2628. (IF: 12.2)

[3] Gao-Wei Zheng*,#, Yan-Yan Liu#, Qi Chen#, Lei Huang, Hui-Lei Yu, Wen-Yong Lou, Chun-Xiu Li, Yun-Peng Bai, Ai-Tao Li, Jian-He Xu*. Preparation of Structurally Diverse Chiral Alcohols by Engineering Ketoreductase CgKR1. ACS Catal. 2017, 7, 7174–7181. (IF: 12.2)

[4] Gao-Wei Zheng and Jian-He Xu*. New Opportunities for Biocatalysis: Driving the Synthesis of Chiral Chemicals. Curr. Opin. Biotechnol.2011, 22, 784–792. (IF: 8.38)

[5] Hao-Yu Jia,Min-Hua Zong, Gao-Wei Zheng*,Ning Li*. One-pot Enzyme Cascade for Controlled Synthesis of Furan Carboxylic Acids from 5-Hydroxymethylfurfural via H2O2 Internal Recycling. ChemSusChem, 2019, doi.org/10.1002/cssc.201902199. (IF: 7.82)

[6] Hao Li, Ping Tian, Jian-He Xu*, Gao-Wei Zheng*. Identification of an Imine Reductase for Asymmetric Reduction of Bulky Dihydroisoquinolines. Org. Lett. 2017, 19(12): 3151–3154. (IF: 6.50)

[7] Hieu-Huy Nguyen-Tran, Gao-Wei Zheng,* Xu-Hong Qian and Jian-He Xu*. Highly selective and controllable synthesis of arylhydroxylamines by the reduction of nitroarenes with an electron-withdrawing group using a new nitroreductase BaNTR1. Chem Commun2014, 50, 2861–2864. (IF: 6.20)

[8] Jin-Gang Yin, Yi Gong, Xiao-Yan Zhang, Gao-Wei Zheng*, and Jian-He Xu*. Green access to chiral Vince lactam in a buffer-free aqueous system using a newly identified substrate-tolerant (−)-γ-lactamase. Catal. Sci. Technol. 2016, 6, 6305-6310. (IF: 5.73)

[9] Hao Li, Zheng-Jiao Luan, Gao-Wei Zheng,*and Jian-He Xu*. Efficient Synthesis of Chiral Indolines using an Imine Reductase from Paenibacillus lactis.Adv. Synth. Catal.2015,357, 1692-1696. (IF: 5.50)

[10] Yu-Jun Zhang, Wen-Xia Zhang, Gao-Wei Zheng,*and Jian-He Xu*. Identification of an ε-Ketoester Reductase for Efficient Synthesis of (R)-α-Lipoic Acid Precursor.Adv. Synth. Catal. 2015, 357, 1697-1702. (IF: 5.50)