

Department: School of Biotechnology

Professional field: Biocatalysis and biotransformation

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Profile

Prof. Yu is currently a professor at the School of Bioengineering at East China University of Science and Technology, Ph.D. supervisor. She proposed a substrate-targeting rational biocatalyst design strategy, developed a multi-objective driven and subdomains combination focusing evolutionary approach, and explored a biocatalyst stabilization method applied for industrial bioreactor. The enzymatic synthesis technologies of chiral hydroxyl acid, chiral sulfoxide and chiral alcohol have been applied in industry, which greatly decreased the production waste generation and promoted the technology renovation of pharmaceutical industry. She has published more than 80 SCI-indexed papers, including ACS Catal, Metab Eng and Biotechnol Bioeng, etc, which was cited by Science, Chemical Reviews.

Research Field

1. Stress-directed screening of biocatalyst for high substrate loading and harsh environment
2. Rational design of ideal biocatalyst with high activity and high selectivity
3. Synthesis of important chiral product by multi-enzyme cascade systems

Research results and selected published papers

- (1). Li FL, Kong XD, Chen Q, Zheng YC, Xu Q, Chen FF, Fan LQ, Lin GQ, Zhou JH*, Yu HL*, Xu JH*. Regioselectivity engineering of epoxide hydrolase: Near-perfect enantioconvergence through a single site mutation [J].ACS Catal., 2018, 8, 8314-8317.
- (2). Yu HL, Li T, Chen FF, Luo XJ, Li AT, Yang C, Zheng GW, Xu JH*. Bioamination of alkane with ammonium by an artificially designed multienzyme cascade [J].Metab. Eng., 2018, 4, 184-189
- (3). Luo XJ, Zhao J, Li CX, YP Bai, Reetz MT, Yu HL*, Xu JH*. Combinatorial evolution of phosphotriesterase toward a robust malathion degrader by hierarchical iteration mutagenesis [J]. Biotechnol. Bioeng., 2016, 113, 2350-2357.
- (4). Shang YP, Chen Q, Kong XD, Zhang YJ, Xu JH, and Yu HL*. Efficient synthesis of (R)-2-chloro-1-(2,4-dichlorophenyl)ethanol with a ketoreductase from Scheffersomyces stipitis CBS 6045 [J]. Adv. Synth. Catal., 2017, 359, 426-431.
- (5). Ma BD, Kong XD, Yu HL*, Zhang ZJ, Dou S, Xu YP, Ni Y, Xu JH*. Increased catalyst productivity in α -hydroxy acids resolution by esterase mutation and substrate modification [J].ACS Catal., 2014, 4, 1026-1031.