Xingyu Ouyang

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EDUCATION AND RESEARCH EXPERIENCE

Shanghai Jiao Tong University, School of Life Sciences and Biotechnology
Ph.D. in Biology **Shanghai, China** **09/2020 ~ Present**
Computational biochemistry, reaction potential energy surface of biosynthetic and industrial enzymes.

Shanghai Jiao Tong University, School of Life Sciences and Biotechnology
B.S. in Bioinformatics and Biostatistics **Shanghai, China** **09/2016 ~ 06/2020**
Genomics, systems biology, clinical data analysis, molecular modeling and drug design.

University of Ottawa, Department of Physics
Exchange Student in Physics **Ottawa, Canada** **07/2019 ~ 09/2019**
Terahertz spectroscopy effects on biological materials.

PUBLICATIONS

- **Ouyang, X.**, Liu, G., Ji, S., Luo, S., Shi, T., Xu, P., Zhao, Y. L., & Tang, H. (2022). Dioxetane and lactone pathways in dioxygenolytic ring cleavage catalyzed by 2, 5-dihydroxypyridine dioxygenase. *Chem Catalysis*, 100480.
- Liu, H., Zhang, L., Wang, W., Hu, H., **Ouyang, X.**, Xu, P., & Tang, H. (2023). An intelligent synthetic bacterium for chronological toxicant detection, biodegradation, and its subsequent suicide. *Advanced Science*, 2304318.
- Guo, L., **Ouyang, X.**, Wang, W., et al. (2023). Characterization of a novel aromatic ring-hydroxylating oxygenase, NarA2B2, from thermophilic Hydrogenibacillus sp. strain N12. *Applied and Environmental Microbiology*, 89(10), e00865-23.
- Hu, H., Luan, Q., Li, J., Lin, C., **Ouyang, X.**, Wei, D. Q., ... & Zhu, J. (2023). High-molecular-weight and light-colored disulfide-bond-embedded polyesters: Accelerated hydrolysis triggered by redox responsiveness. *Biomacromolecules.*
- Li, J., Luo, S., **Ouyang, X.**, Wu, G., Deng, Z., He, X., & Zhao, Y. L. (2023). Understanding base and backbone contributions of phosphorothioate DNA for molecular recognition with SBD proteins. *Physical Chemistry Chemical Physics*, 25(42), 29289-29302.
- Wang, Y., Liu, M., Li, J., Wang, Q., **Ouyang, X.**, Wei, H., & Zhang, K. (2022). Exploring competitive inhibition of a family 10 xylanase derived from Hu sheep rumen microbiota by Oryza sativa xylanase inhibitor protein: In vitro and in silico perspectives. *Enzyme and Microbial Technology,* 160, 110082.
- Hu, H., Li, J., Wang, Q., **Ouyang, X.**, Wang, J., Zhao, Y. L., ... & Zhu, J. (2022). Efficient synthesis of itaconate polyesters with amine-triggered rapid degradation and outstanding mechanical properties: An experimental and theoretical study on degradation mechanisms. *Macromolecules*, 55(18), 8002-8013.
- Wei, H., Liu, M., Zhang, K., Li, J., & **Ouyang, X.** (2022). Heterologous expression of family GH11 Aspergillus niger xylanase B (AnXylB11) in Pichia pastoris and competitive inhibition by riceXIP: An experimental and simulation study. *Colloids and Surfaces B: Biointerfaces*, 220, 112907.
- Liu, G., Zhao, Y. L., He, F., Zhang, P., **Ouyang, X.**, Tang, H., & Xu, P. (2021). Structure-guided insights into heterocyclic ring-cleavage catalysis of the non-heme Fe (II) dioxygenase NicX. *Nature Communications*, 12(1), 1301.
- Chen, X., **Ouyang, X.**, Li, J., & Zhao, Y. L. (2021). Natural syringyl mediators accelerate laccase-catalyzed β-O-4 cleavage and Cα-oxidation of a guaiacyl model substrate via an aggregation mechanism. *ACS Omega*, 6(35), 22578-22588.
- Wang, W., Li, Q., Zhang, L., Cui, J., Yu, H., Wang, X., **Ouyang, X.**, Tao, F., Xu, P., & Tang, H. (2021). Genetic

mapping of highly versatile and solvent-tolerant Pseudomonas putida B6-2 (ATCC BAA-2545) as a 'superstar' for mineralization of PAHs and dioxin-like compounds. *Environmental Microbiology*, 23(8), 4309-4325.

- Cao, X. Q., **Ouyang, X. Y.**, Chen, B., Song, K., Zhou, L., Jiang, B. L., ... & He, Y. W. (2020). Genetic interference analysis reveals that both 3-hydroxybenzoic acid and 4-hydroxybenzoic acid are involved in xanthomonadin biosynthesis in the phytopathogen Xanthomonas campestris pv. campestris. *Phytopathology,* 110(2), 278-286.

COMPETITION

International Genetically Engineered Machine Competition (iGEM) — Golden Model 01/2019 ~ 11/2019

- Developed a user-friendly web-based database of plant synthesis and related tools for researchers, featuring prediction, modification, and visualization capabilities.
- Programmed and refined web front-end, designed relevant images and logos.
- Project WIKI: https://2019.igem.org/Team:SJTU-software

SKILLS

Software

Amber, Gaussian, VMD, PyMOL, Chimera, Office

Programming

R, Python, Shell