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## Substrate adaptability of $\beta$ -lactamase

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## **Curriculum Vitae**

Jing Sun was born on the 26<sup>th</sup> of December 1990 in Changchun, China. She studied Food Science and Engineering at Huazhong Agricultural University (Wuhan, China) in 2009 and obtained her bachelor's degree in 2013. Subsequently, she joined Prof. Dr. Hao Liang's group for three years of Master's education at the Institute of Life Science of the Beijing University of Chemical Technology (Beijing, China). During her Master's education, she was supervised by Prof. Dr. Hao Liang to design a functional material in bionanotechnology for treatment by gold nanoparticle (AuNP) and DNA to form spherical nucleic acids (SNAs). This research was also supervised by Prof. Dr. Xu Zhang (Cape Breton University, Canada). In 2016, she graduated with Honors and was hired by Prof. Dr. Lianxun Gao as an assistant researcher at the Institute of Applied Chemistry, Chinese Academy of Sciences (Changchun, China) to focus on clinical test kit design. In 2019, she was funded by the Chinese Scholarship Council (CSC) and joined the Macromolecular Biochemistry group of Prof. Dr. Marcellus Ubbink as a PhD student at Leiden University (Netherlands) to study the evolution of enzymes with laboratory evolution, kinetic measurements, NMR spectroscopy and protein crystallography.

## List of publications

**Sun, J.**, Chikunova, A., Boyle, A. L., Voskamp, P., Timmer, M., Ubbink, M. (2023). Enhanced activity against a third-generation cephalosporin by destabilization of the active site of a class A beta-lactamase. *International Journal of Biological Macromolecules*, 250, 126160. DOI: 10.1016/j.ijbiomac.2023.126160

**Sun, J.**, Boyle, A. L., Brünle, S., Ubbink, M. A low-barrier proton shared between two aspartates acts as a conformational switch that changes the substrate specificity of the  $\beta$ -lactamase BlaC. *Manuscript submitted to Protein Science*.

**Sun, J.**, Timmer, M., Brünle, S., Ubbink, M. Directed evolution enhances ceftazidime activity of BlaC by stabilization of an open state. *Manuscript to be submitted*.

### Publication from previous research work

**Sun, J.**, Curry, D., Yuan, Q., Zhang, X., & Liang, H. (2016). Highly hybridizable spherical nucleic acids by tandem glutathione treatment and polythymine spacing. *ACS Applied Materials & Interfaces*, 8(19), 12504-12513.

