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Essentiality of conserved amino acid residues in β -lactamase

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Curriculum Vitae

Aleksandra Chikunova was born on January 25th 1993 in Moscow, Russia. In 2010 she started her higher education in Russian National Research Medical University, and she graduated with honors in 2016 with a Specialist's degree in Medical Biochemistry. During her education she has worked in a clinic as a laboratory assistant in a PCR department and realized that she is more interested in fundamental aspects of biochemistry rather than medical. Therefore, she started her research work in the group of Prof. dr. Mark Rosenfeld in the Institute of Biochemical Physics, where she was involved in the projects on protein coatings on magnetic nanoparticles and oxidative modification of plasma proteins. In 2016 she moved to the Netherlands and joined the group of Prof. dr. Marcellus Ubbink in Leiden University as a PhD student. For her PhD she worked on β -lactamase BlaC. Aleksandra is now a Post-doctoral researcher in the Ubbink group focusing on structural studies of BlaC and BCX.

List of Publications

Chikunova, A., Manley, M. P., Ud Din Ahmad, M., Bilman, T., Perrakis, A. and Ubbink, M. (2021) Conserved residues Glu37 and Trp229 play an essential role in protein folding of β -lactamase. *FEBS J.* 288, 5708-5722

van Alen, I., Chikunova, A., Safeer, A.A., Ud Din Ahmad, M., Perrakis, A. and Ubbink, M. (2021). The G132S mutation enhances the resistance of *Mycobacterium tuberculosis* β -lactamase against sulbactam. *Biochemistry.* 60, 2236-2245

Elings, W., Chikunova, A., van Zanten, D.B., Drenth, R., Ud Din Ahmad, M., Blok, A.J., Timmer, M., Perrakis, A., Ubbink, M. (2021). Two β -Lactamase variants with reduced clavulanic acid inhibition display different millisecond dynamics. *Antimicrob Agents Chemother.* 65, e0262820

Chikunova, A., Ubbink, M. (2022) The roles of highly conserved, non-catalytic residues in class A β -lactamases. *Protein Science*, in production. DOI: 10.1002/Pro.4328

Chikunova, A., Colle, L.M., Hensgens, M.N., Malaj, S., Ubbink, M. The N214-D233-D246 motif is essential for correct positioning of the active site residues in BlaC. **Manuscript to be submitted.**

Chikunova, A., van Alen, I., van Zanten, D.B., de Block, A.A., Ubbink, M. Mutations in two highly conserved residues are beneficial for BlaC. **Manuscript to be submitted.**

Publication from previous research work:

Vasilyeva, A.D., Bychkova, A.V., Bugrova, A.E., Indeykina, M.I., Chikunova, A.P., Leonova, V.B., Kostanova, E.A., Biryukova, M.I., Konstantinova, M.L., Kononikhin, A.S., Nikolaev, E.N., Rosenfeld, M.A. (2017). Modification of the catalytic subunit of plasma fibrin-stabilizing factor under induced oxidation. *Dokl Biochem Biophys.* 472, 40-43