Biochemical characterization of S1-P1 nuclease from human opportunistic pathogen *Stenotrophomonas maltophilia*

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Stenotrophomonas maltophilia is an emerging multidrug-resistant opportunistic pathogen causing nosocomial infections of human respiratory tract. Its ability to form resistant biofilms further contributes to its spread in hospital environment [1]. As S1-P1 nucleases are not present in humans, but produced by several bacterial pathogenic species including *S. maltophilia*, they may represent potential drug or marker target [2] More knowledge of bacterial S1-P1 nucleases may lead to new therapeutic approaches in treatment of infections caused by multiresistant strains.

The S1-P1 nuclease from *S. maltophilia* SmNuc1 was recombinantly expressed in *E. coli* and following two-step purification process led to gain of the active nuclease in high yield and sufficient purity. Enzymatic characterization of SmNuc1 revealed several differences from already known S1-P1 nucleases. Structure of SmNuc1 was solved using X-ray crystallography. Current research is focused on ligand binding studies involving its potential inhibitors.

1. Brooke, J.S., *Clinical Microbiology Reviews*, 2012. **25**(1): p. 2-41.
2. Koval, T. and J. Dohnálek, *Biotechnology Advances*, 2018. **36**(3): p. 603-612.

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