

**Characterization and genomic analysis of *Staphylococcus aureus*  
bacteriophages**

**Aleksandra Kurowska**

Master's dissertation submitted to obtain the degree of  
Master of Science in Major Applied Genetics  
The academic year 2019-2020  
School of Natural Science and Medicine  
Ilia State University  
Tbilisi, Georgia

Thesis promoter: Professor M.D. Ivane Abiatari  
School of Natural Science and Medicine  
Ilia State University

Scientific supervisor: Ph.D. Nina Chanishvili  
Department of Research and Development  
Eliava Institute of Bacteriophages, Microbiology and Virology

June 2020

*Throughout my everyday work, I would like to contribute to the international achievements in the fields of health maintenance and treatment of diseases.*

## Acknowledgments

I would like to sincerely thank and appreciate MSc Nata Bakuradze for immense support, devoted time, shared knowledge, and valuable advice. Her encouragement as well as a positive attitude made my laboratory work much easier. At the same time, I would like to thank other employees of the Department of Research and Development at Eliava Institute of Bacteriophages, Microbiology and Virology, who allowed me to carry out my master's thesis research in a very friendly atmosphere. In particular, I would like to thank Ph.D. Nina Chanishvili for bearing on the merits of the thesis.

I would like to thank Professor M.D. Ivane Abiatari for his recommendations and enabling collaboration with the Eliava Institute of Bacteriophages, Microbiology and Virology in the first place. I would also like to appreciate his outstanding supervision, constructive ideas, and advice. Finally, I wish to express my thanks to MSc Teona Midelashvili for her invaluable help with the cytotoxicity test.

Furthermore, I wish to express my appreciation to Ph.D. Cort Anderson for his assistance and ever-readiness for troubleshooting. Especially, I am grateful for his guidance during DNA extraction, which made my project much more manageable.

I would like to particularly acknowledge dr Krzysztof Pawlik, dr hab. Łukasz Łaczmański and mgr Dorota Kujawa from the laboratories at the Institute of Immunology and Experimental Therapy of Polish Academy of Science, who allowed me to carry out the genetic part of my experiments at their facilities. At the same time, I am very grateful for their assistance with data analysis. Their help with the project was indispensable.

I also want to thank all of my friends, who have supported me throughout my studies in a foreign country with their humor and words of encouragement. In particular, I would like to thank my dear friends Marek Majchrzak and Rowan Campbell. In the same way, I want to appreciate my family, particularly my parents, who supported my decision to pursue a Master's Degree in Georgia.

Aleksandra Kurowska