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Comprehensive metabolomics of the experimental opisthorchiasis

Kokova, D.

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Curriculum vitae

Daria Kokova was born on January 25th 1986, in Abakan, USSR. After graduating from secondary school in 2003, she moved to Tomsk to study Chemistry at the Tomsk State University. During her study at the university, she was interested in physical chemistry, with her master thesis focusing on the development of heterogeneous catalysts for partial oxidation and analysis of products of catalytic reactions. During her university study, she started to work in the Laboratory of catalytic research of the Tomsk State University (2008-2011). However, after graduation, she realized that analytical chemistry interested her more. The board of the Chemistry Department of the Tomsk State University supported her concept for establishing a mass spectrometry-based analytical laboratory. Daria Kokova led and managed the laboratory until 2016. The focus of the laboratory was the development of analytical methods for complex organic/biological samples (GC-MS, HPLC-MS/MS, HTLC). The experience of working at the crossroads between biology and chemistry triggered her interest in metabolomics. She has received personal funding for two consecutive internships in the Center for Proteomics and Metabolomics (CPM) at Leiden University Medical Center. The area of research at the intersection between biology and chemistry triggered her interest and prompted her to see a PhD studentship in the field of metabolomics. She won a personal fellowship and joined the Department of Parasitology of LUMC, as a PhD student in 2016. Under the supervision of prof. dr. M. Yazdanbakhsh and dr. O.A. Mayboroda, the comprehensive host metabolic response to *Opisthorchis felineus* infection was explored during her PhD study.

Currently, Daria Kokova is leading the Laboratory of Clinical Metabolomics at the Tomsk State University. Her research interests are focused on applying metabolomics for the investigation of infectious diseases. She is interested in using UPLC-MS and NMR techniques for metabolomics profiling and in data processing and multivariate data analysis.

List of publications

1. **D. Kokova**, A. Verhoeven, E.A. Perina, V.V. Ivanov, M. Heijink, M. Yazdanbakhsh, O.A. Mayboroda. Metabolic homeostasis in chronic helminth infection is sustained by organ specific metabolic rewiring. *ACS Infect. Dis.* 7: 4 (2021) (thesis Chapter 6)
2. **D. Kokova**, A. Verhoeven, E.A. Perina, V.V. Ivanov, E.M. Knyazeva, I.V. Saltykova, O.A. Mayboroda. Plasma metabolomics of the time resolved response to *Opisthorchis felinus* infection in an animal model (golden hamster, *Mesocricetus auratus*). *PLoS Negl Trop Dis* 14(1): e0008015 (2020) (thesis Chapter 4)
3. **D. Kokova**, O.A. Mayboroda. Twenty years on: metabolomics in helminth research. *Trends in Parasitology*, V. 35, I. 4, pp 282-288 (2019) (thesis Chapter 2)
4. **D. Kokova**, S. Kostidis, J. Morello, N. Dementeva, E.A. Perina, V.V. Ivanov, L.M. Ogorodova, A.E. Sazonov, I.V. Saltykova, O.A. Mayboroda. Exploratory metabolomics study of the experimental opisthorchiasis in a laboratory animal model (golden hamster, *Mesocricetus auratus*). *PLoS Negl Trop Dis* 11(10): e0006044 (2017) (thesis Chapter 3)
5. S. Kostidis, **D. Kokova**, N. Dementeva, I.V. Saltykova, H.K. Kim, Y.H. Choi, O.A. Mayboroda. 1H-NMR analysis of feces: new possibilities in the helminthes infections research. *BMC Infectious Diseases*. 17:275 (2017) (thesis Chapter 5)
6. N. Dementeva, **D. Kokova**, O.A. Mayboroda. Current Methods of the Circulating Tumor Cells (CTC) Analysis: A Brief Overview. *Curr Pharm Des* 23:32 (2017)

Portfolio

PhD student: drs. D Kokova F

Primary thesis advisor: prof.dr. M Yazdanbakhsh

Other thesis advisor(s): dr. O Maiboroda

Research programme: 50401 Host-parasite interaction

Title of Thesis: The non-invasive and minimally invasive approaches for metabolomics screening of the helminth infection.

PhD training

	Year	Hours
Mandatory courses		
- PhD Introductory Meeting (done)	2017	
- Basic Methods and Reasoning in Biostatistics (done)	2017	
- BROK Course (done)	2018	
Generic/disciplinary courses		
- General English Course 3B	2016	
- Hands-on NMR Spectroscopy for Metabolic Profiling	2017	
- General English Course	2017	
- EMBO Practical Course on Metabolomics Bioinformatics for Life Scientists	2018	
- Scientific Conduct for PhDs	2018	
- Metabolomics Data Processing and Data Analysis	2017	
Attended lectures, LUMC presentations, participation in meetings		
- Metabomeeting 2017	2017	
- TOPIC	2017	
Other activities (such as journal club)		
- MOVISS: Metabolomics Bio&Data	2018	
Congress attendance and poster or oral presentations		
- ICOPA 2018	2018	
- EMBO/EMBL symposium	2019	
TOTAL number of hours		

Publications

	Year
Publications in peer reviewed journals (article, review, editorial, letter to editor)	
- Current Methods of the Circulating Tumor Cells (CTC) Analysis: A Brief Overview; Dementeva Natalia, Kokova Daria, Mayboroda Oleg A.; 2017; Journal article	2017
- Exploratory metabolomics study of the experimental opisthorchiasis in a laboratory animal model (golden hamster <i>Mesocricetus auratus</i>); Kokova Daria A., Kostidis Sarantos, Morello Judit, et al.; 2017; Journal article	2017
- H-1-NMR analysis of feces: new possibilities in the helminthes infections research; Kostidis Sarantos, Kokova Daria, Dementeva Natalia, et al.; 2017; Journal article	2017
- Plasma metabolomics of the time resolved response to <i>Opisthorchis felinus</i> infection in an animal model (golden hamster, <i>Mesocricetus auratus</i>); Kokova D, Verhoeven A, Perina EA, et al.; 2020; Journal article	2020
- Metabolic Homeostasis in Chronic Helminth Infection Is Sustained by Organ-Specific Metabolic Rewiring.; Daria Kokova, Aswin Verhoeven, Ekaterina A Perina, et al.; 2021; Journal article	2021
- Twenty Years on: Metabolomics in Helminth Research; Kokova Daria, Mayboroda Oleg A.; 2019; Review	2019