



Universiteit
Leiden
The Netherlands

Virus-host metabolic interactions: using metabolomics to probe oxidative stress, inflammation and systemic immunity

Schoeman, J.C.

Citation

Schoeman, J. C. (2016, December 20). *Virus-host metabolic interactions: using metabolomics to probe oxidative stress, inflammation and systemic immunity*. Retrieved from <https://hdl.handle.net/1887/45223>

Version: Not Applicable (or Unknown)

License: [Licence agreement concerning inclusion of doctoral thesis in the Institutional Repository of the University of Leiden](#)

Downloaded from: <https://hdl.handle.net/1887/45223>

Note: To cite this publication please use the final published version (if applicable).

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/45223> holds various files of this Leiden University dissertation

Author: Schoeman, Johannes Cornelius

Title: Virus-host metabolic interactions: using metabolomics to probe oxidative stress, inflammation and systemic immunity

Issue Date: 2016-12-20

Dankwoord / Acknowledgements

Firstly, I would like to thank Prof. Carools Reinecke for recognizing my scientific potential as a second-year biochemistry student, and cultivating it through the years and culminating in me being accepted as a “assistent in opleiding” at Leiden University. It’s difficult to express my gratitude in words, and I hope my actions forward will make you proud of the faith you had in me.

Secondly, this PhD thesis would not have been possible without the help of external collaborators. I would like to thank Dr. Andre Boonstra, and Dr. Arno Andeweg from the Erasmus MC Rotterdam, as well as Dr. Madeleine Bunders from the AMC. I would also like to thank the patients who provided the sample material for the studies described in this thesis. I deeply value our working relationship and the positive impact it has had on my scientific career as well as my personal development.

I am grateful to the team at Analytical Biosciences and especially Dr. Amy Harms and Loes Beijersbergen for all your help, know-how, and daily support.

To all the past and present members of Analytical Biosciences and the BMFL thank you for the part you played during my PhD studies, in all capacities, through in-depth scientific discussions, corvee, meetings, conferences and even the coffee corner therapy sessions. I would like to especially thank my office roommates: Anne-Charlotte, Can, Florian, Michel, Petri, Vasu together with an honoree mention: Junzeng and Rosilene.

I would like to thank Dr. Elke Krekels and Dr. Anne-Charlotte Dubbelman for helping me write the Dutch summary found within this thesis.

I would also like to thank my parents Johan and Sarie Schoeman for all your support, and not asking too many questions related to “so how are your studies going?”. Thank you for enabling me to pursue all the opportunities presented to me till now and for laying the solid foundation on which I can build my life, future and career.

Curriculum Vitae

Johannes Cornelius (Nelus) Schoeman was born on November 25, 1987 in Klerksdorp, South Africa. He attended Schoonspruit High school between 2001 to 2005, where in his final year he was chairman of the student council as well as dux student. Subsequently he studied Chemistry and Biochemistry at the North West University (Potchefstroom campus) in South Africa, and obtained his BSc. degree in 2009 (cum laude). He continued his education in the field of biochemistry and obtained his BSc Honours (cum laude) in 2010 and MSc. (cum laude) in 2011 at the same institution. His Masters project was entitled: “A metabolomics approach for characterizing *M. tuberculosis* from sputum”, and was completed under the supervision of Prof Du Toit Loots. During his MSc project he utilised a two dimensional GC-TOFMS platform, to develop and validate an untargeted metabolomics method to characterise patient positive tuberculosis sputum from patient negative sputum. In June of 2012 he started the investigations described in this thesis. This research was performed under the supervision of Prof.Dr. Thomas Hankemeier, Prof.Dr. Ruud Berger and Dr. Rob Vreeken at the department of Analytical Biosciences under the Leiden Academic Centre for Drug Research (LACDR), at Leiden University in Leiden, the Netherlands.

List of publications

- Schoeman JC***, Loots DT. 2011. Improved disease characterisation and diagnostics using metabolomics: A review. *J cell tissue Res* **11**:2673–2683.
- Schoeman JC***, du Preez I, Loots DT. 2012. A comparison of four sputum pre-extraction preparation methods for identifying and characterising *Mycobacterium tuberculosis* using GCxGC-TOFMS metabolomics. *J Microbiol Methods* **91**:301–11.
- He M, van Wijk E, Berger R, Wang M, Strassburg K, **Schoeman JC**, Vreeken RJ, van Wietmarschen H, Harms AC, Kobayashi M, Hankemeier T, van der Greef J. 2015. Collagen Induced Arthritis in DBA/1J Mice Associates with Oxylin Changes in Plasma. *Mediators Inflamm* **2015**:543541.
- Fu J, **Schoeman JC#**, Harms AC, van Wietmarschen HA, Vreeken RJ, Berger R, Cuppen BVJ, Lafeber FPJG, van der Greef J, Hankemeier T. 2016. Metabolomics profiling of the free and total oxidised lipids in urine by LC-MS/MS: application in patients with rheumatoid arthritis. *Anal Bioanal Chem*. **408**(23):6307-19
- Schoeman JC***, Hou J, Harms AC, Vreeken RJ, Berger R, Hankemeier T, Boonstra A. 2016. Metabolic characterization of the natural progression of chronic hepatitis B. *Genome Med* **8**:64.

* First Author

Shared first Author