

Curriculum Vitae

Personal Data

Title	Ass. Prof. Ph.D.
First name	Benjamin
Name	Vervaeet
Current positions	1. Postdoctoral researcher at Institute of Pathology, RWTH Uniklinik Aachen, Germany 2. Ass. Professor at Cell Death Signaling Lab, Dept. Biomedicine, University of Antwerp, Belgium
Current institution/site, country	-Institute of Pathology, RWTH Aachen, Germany -Cell Death Signaling Lab, Dept. Biomedicine, University of Antwerp, Belgium
Identifiers/ORCID	0000-0002-8589-5469

Qualifications and Career

Stages	Periods and Details
Degree programmes	2003 Master of Sciences in Biotechnology - Molecular Biology (Magna cum laude), University of Ghent, Belgium
	2002 Bachelor of Sciences in Biology (Cum laude), University of Ghent, Belgium
Doctorate	2010 PhD (Medical Sciences), University of Antwerp, Antwerp, Belgium. Supervisors: Prof. Dr. Marc De Broe and Prof. Dr. Patrick D'haese
Habilitation	n/a
Stages of academic/ professional career	2022-current Team lead/Postdoctoral researcher, Institute of Pathology, RWTH Uniklinik Aachen, Aachen, Germany
	2020-current Ass. Professor, Laboratory of Pathophysiology/Cell Death Signaling Lab, Dept. Biomedicine, University of Antwerp, Antwerp, Belgium
	2011-2020 Postdoctoral research associate, Laboratory of Pathophysiology, Dept. of Biomedicine, University of Antwerp, Antwerp, Belgium
	2004-2010 Research fellow of the Faculty of Medicine, University Hospital of Antwerp, Antwerp, Belgium

Activities in the Research System

2020-2021	Review Editor for Frontiers in Pharmacology (Renal Pharmacology)
Since 2018	Active in the CKDu network (i3C) of the International Society of Nephrology
2019	Lecture in 26th Budapest Nephrology School, Hungary
2011-2013	Member of the Editorial Board of Kidney International

Personal statement

With 20 years of experience in basic, preclinical and translational renal research, I have a broad background in functional, histopathological and cell biological aspects of normal and diseased kidneys. In my research I highly value profound histological observations; an approach that led to the discovery of a tubular crystal clearing mechanism during my PhD and, more recently, the discovery of an aberrant proximal tubular lysosomal phenotype in patients with Chronic Kidney Disease of unknown etiology (CKDu) and transplant patients on calcineurin inhibitor therapy (Vervaet et al. *Kidney International* 2020). These discoveries laid the foundation of multiple successful grant and PhD fellowship applications and resulted in multiple peer reviewed manuscripts. In addition to uncovering the disease mechanisms driving kidney pathology, my research focuses on identifying therapeutic opportunities to address these challenges. This involves exploring strategies to either stimulate inherent renal regeneration following acute injury or mitigate the progression of chronic kidney disease (CKD). Both research programs aim to elucidate the cellular pathways underlying intriguing but poorly understood renoprotective phenomena. The first phenomenon is nephrectomy-induced renal repair, where the removal of the contralateral kidney triggers a remarkable repair response in the acutely injured kidney. The second focuses on our preclinical findings that metformin, a widely used antidiabetic drug, can prevent both functional decline and histological damage in non-diabetic CKD models. By studying these phenomena, I aim to uncover novel pathways that could be harnessed for therapeutic intervention.

In the field of nephrotoxicity, I am the PI for the University of Antwerp in the 26-member European research consortium "SPRINT" (H2020, 2020-2025), that is focusing on sustainable plant protection strategies and mapping toxicant exposures in Europe. Within this consortium I'm providing expertise on renal pathology and rat renal tissue analysis, with particular emphasis on evaluating the presence of toxicity associated lesions.

Supervision of Researchers in Early Career Phases

Since 2021	Organizing the "Studium Generale in Biomedical Sciences" for Biomedical students, a lecture series on diverse topics in the broad Biomedical research field, University of Antwerp.
2019 -2022	State-of-the-Art Lectures in Biomedicine for Biomedical MSc students
2016 -2022	Lecturing Cell biology to Bio-engineer students in the Faculty of Applied Sciences, University of Antwerp, Belgium.
Since 2012	Supervised or co-supervised 7 doctoral theses (PhD) at University of Antwerp, Belgium; currently 2 in final stage and 2 in their second year.
Since 2010	Training MSc students towards PhD fellowship defenses (Research Fund Flanders)
Since 2004	Supervisor of Bachelor and Master theses students (1-2/year) at University of Antwerp, Belgium

Selected Scientific Results

Category A

1. Schreurs G, Maudsley S, Nast C, Praet M, Da Silva Fernandes S, Boor P, D'Haese P, De Broe ME, **Vervaet BA** (2023) Chronic dehydration induces injury pathways in rats, but does not mimic histopathology of chronic interstitial nephritis in agricultural communities. **Sci Rep** 13 (1):18119. doi:10.1038/s41598-023-43567-z

2. Corremans R, Neven E, Maudsley S, Leysen H, De Broe ME, D'Haese PC, **Vervaeet BA***, Verhulst A* (2022) Progression of established non-diabetic chronic kidney disease is halted by metformin treatment in rats. **Kidney Int** 101 (5):929-944. doi:10.1016/j.kint.2022.01.037
 3. Cabrera JW*, **Vervaeet BA***, Schreurs G, Nast CC, Santa-Cruz F, De Broe ME (2022) Chronic Interstitial Nephritis in Agricultural Communities: A Patient in Paraguay. **Kidney Int Rep** 7 (5):1131-1135. doi:10.1016/j.ekir.2022.02.019
 4. **Vervaeet BA**, Nast CC, Jayasumana C, Schreurs G, Roels F, Herath C, Kojc N, Samaee V, Rodrigo S, Gowrishankar S, Mousson C, Dassanayake R, Orantes CM, Vuiblet V, Rigothier C, D'Haese PC, De Broe ME (2020) Chronic interstitial nephritis in agricultural communities is a toxin-induced proximal tubular nephropathy. **Kidney Int** 97 (2):350-369. doi:10.1016/j.kint.2019.11.009
 5. D'Haese PC, Douglas G, Verhulst A, Neven E, Behets GJ, **Vervaeet BA**, Finsterle K, Lurling M, Spears B (2019) Human health risk associated with the management of phosphorus in freshwaters using lanthanum and aluminium. **Chemosphere** 220:286-299. doi:10.1016/j.chemosphere.2018.12.093
 6. **Vervaeet BA**, D'Haese PC, Verhulst A (2017) Environmental toxin-induced acute kidney injury. **Clin Kidney J.** 10(6):747-758. doi: 10.1093/ckj/sfx062.
 7. Le Clef N, Verhulst A, D'Haese PC, **Vervaeet BA** (2016) Unilateral Renal Ischemia-Reperfusion as a Robust Model for Acute to Chronic Kidney Injury in Mice. **PLoS One** 11 (3):e0152153. doi:10.1371/journal.pone.0152153
 8. **Vervaeet BA**, D'Haese PC, De Broe ME, Verhulst A (2009) Crystalluric and tubular epithelial parameters during the onset of intratubular nephrocalcinosis: illustration of the 'fixed particle' theory in vivo. **Nephrol Dial Transplant** 24 (12):3659-3668. doi:10.1093/ndt/gfp418
 9. **Vervaeet BA**, Verhulst A, D'Haese PC, De Broe ME (2009) Nephrocalcinosis: new insights into mechanisms and consequences. **Nephrol Dial Transplant.** 24(7):2030-5. doi: 10.1093/ndt/gfp115.
 10. **Vervaeet BA**, Verhulst A, Dauwe SE, De Broe ME, D'Haese PC (2009) An active renal crystal clearance mechanism in rat and man. **Kidney Int** 75 (1):41-51. doi:10.1038/ki.2008.450
- * Authors contributed equally

Category B

1. Wijewickrama E, Behera S, Garcia P, Avila-Casado C, Caplin B, Paolo VS, Courville K, Friedman D, Madero M, Jha V, Kambham N, Levin A, Anand S, International Society of Nephrology's International Consortium of Collaborators on C (2024) Kidney biopsies among persons living in hotspots of CKDu: a position statement from the International Society of Nephrology's Consortium of Collaborators on CKDu. **Kidney Int** 105 (3):464-469. doi:10.1016/j.kint.2023.12.012. **Vervaeet BA** is part of the CKDu consortium.
2. De Broe ME, **Vervaeet BA** (2020) Is an Environmental Nephrotoxin the Primary Cause of CKDu (Mesoamerican Nephropathy)? PRO. **Kidney360** 1 (7):591-595. doi:10.34067/KID.0003172020

Book Chapters:

1. Chronic tubulointerstitial nephritis

De Broe ME, Jayasumana C, D'Haese PC, Elseviers MM, **Vervaeet BA**
in "Oxford Textbook of Medicine, 6th edition", p. 4956-4974, Editors: John Firth,
Christopher Conlon, and Timothy Cox. Publisher: Oxford University Press. Publication
date: Mar, 2020, ISBN: 9780198746690

2. Cell biology of Nephrocalcinosis/-lithiasis.

Vervaeet BA, De Broe ME.

In "Oxford Textbook of Clinical Nephrology, 4th edition", p 1671-1696, Editors: Turner Neil,
Goldsmith David, Winearls Christopher, Lamiere Nobert, Himmelfarb Jonathan. Publisher:
Oxford University Press. Publication date: Dec, 2015, ISBN 0199592543 or
9780199592548

3. Heavy metals-induced tubulo-interstitial nephritis

D'Haese P, **Vervaeet BA**, Verhulst A

In "Oxford Textbook of Clinical Nephrology, 4th edition", p 702-708, Editors: Turner Neil,
Goldsmith David, Winearls Christopher, Lamiere Nobert, Himmelfarb Jonathan. Publisher:
Oxford University Press. Publication date: Dec, 2015, ISBN 0199592543 or
9780199592548

Academic Distinctions

2015	Selected for: Wellcome Trust Summer School in Bioinformatics, Wellcome Trust Genome Campus, Hinxton, Cambridge, UK
2012	Selected for: EMBL "Advanced course on whole transcriptome data analysis", EMBL, Heidelberg, Germany
2012	Selected for: EMBO practical course on "Single cell gene expression analysis", EMBL, Heidelberg, Germany
2007	Young Investigator Award 5th European Urolithiasis Society Symposium (eULIS), Lissabon, Portugal
2006	Recipient of the Faculty of Medicine Research Fellowship (2006 - 2010), University Hospital Antwerp