



PROF ANNE GROBLER

*DST/NWU Preclinical Drug Development Platform
North-West University*

A. PROFESSIONAL PREPARATION

<u>College/University</u>	<u>Major</u>	<u>Degree &Year</u>
Potchefstroom University, South Africa	Chem., Biochem, Phys	BSc, 1978
Potchefstroom University, South Africa	Biochemistry	BSc Hons, 1979
University of Stellenbosch	Med. Biochemistry	MSc, 1983
North-West University	Pharmaceutics	PhD, 2009

B. ACADEMIC/PROFESSIONAL APPOINTMENTS

Professor and director, Preclinical Drug Development, NWU (2012 - current)
 Professor, Department of Pharmaceutics, NWU (2008 - 2012)
 Subject Specialist, Department of Pharmaceutics, NWU, South Africa (2004 - 2008)

C. PUBLICATIONS / PATENTS / PRODUCTS

Prof Grobler has published more than 50 papers in peer reviewed journals, several book chapters and is the inventor of 8 patents granted in selected countries.

(i) Most Closely Related to presentation

Rambanapasi, C., Barnard, N., Grobler, A. Bunting, H., Sonopo, M., Jansen, D., Jordaan, A., Steyn, H., and Zeevaart. J.R. Dual Radiolabeling as a Technique to Track Nanocarriers: The Case of Gold Nanoparticles, ISSN 1420-3049. *Molecules*. 20(7):12863-79. (2015).

Vusani Mandiwana, Lonji Kalombo, Kobus Venter, Mike Sathekge, Anne Grobler, JanRijn Zeevaart. 2015. Samarium oxide as a radiotracer to evaluate the in vivo biodistribution of PLGA nanoparticles. *Journal of Nanoparticle Research*. ISSN 1388-0764, Volume 17, Number 9 (2015).

Lemmer Y, Grobler A, Moody C and HJ Viljoen, "A Model of Isoniazid Treatment of *Tuberculosis*" *J. Theoretical Biology* 363 pp367-373 (2014).

Mutingwende, I., A. Grobler and HJ Viljoen, "Development and evaluation of a rapid multiplex-PCR based system for Mycobacterium tuberculosis" *Journal of microbiological methods* 06/2015; 14. DOI:10.1016/j.mimet.2015.06.007.

Grobler, A., Z. Perez Sierra and HJ Viljoen, "Modeling Nanoparticle Delivery of TB Drugs to Granulomas" *J. Theor. Biol.* 388 pp85-95 (2016).

Moody,C., H. Newell and HJ Viljoen, "A mathematical model of recombinase polymerase amplification under continuously stirred conditions", *Biochem. Eng. Journal* **112** pp193-201 (2016).

(ii) Other Significant Publications and Patents

Mehta Abhinav¹, Jain Neha^{2*}, Grobler Anne¹, Vandana Bharti. 2016. Role of Novel Drug Delivery Systems in Bioavailability Enhancement: At A Glance. *International Journal of Drug Delivery Technology* 2016; 6(1); 7-26 ISSN: 0975 4415.

Grobler A1, Perez Sierra Z2, Viljoen HJ3. 2016. Modeling nanoparticle delivery of TB drugs to granulomas. *J Theor Biol.* 2016 Jan 7;388:85-95. doi: 10.1016/j.jtbi.2015.10.004. Epub 2015 Oct 20.

Mulubwa M, Rheeders M, Du Plessis L, Grobler A, Viljoen M (2015) Development and Validation of High Performance Liquid Chromatography Tandem Mass Spectrometry (HPLC-MS/MS) Method for Determination of Tenofovir in Small Volumes of Human Plasma. *J Chromatogr Sep Tech* 6:300. doi:10.4172/2157-7064.1000300.

Lidija Posavec, Florentine M Hilty, Jeannine Baumgartner, Hylton Buntting, Monika Hilbe, Marlana Kruger, Frank Krumeich, Anne F Grobler, Michael B Zimmermann. 2017. Chemical Composition but Not Specific Surface Area Affects Calcium Retention of Nanostructured Calcium Compounds in Growing Rats¹⁻³. *The Journal of Nutrition.* p354-360.

Melinda Barkhuizen, David G. Anderson, Francois H. van der Westhuizen, and Anne F. Grobler. 2017. A molecular analysis of the GBA gene in Caucasian South Africans with Parkinson's disease. *Mol Genet Genomic Med.* Vol 5 p147- 156.

Clinton Rambanapasi, Jan Rijn Zeevaart, Hylton Buntting, Cornelius Bester, Deon Kotze, Rose Hayeshi, Anne Grobler. 2016. Bioaccumulation and subchronic toxicity of 14nm gold nanoparticles in rats. *Molecules.* Volume 21, Issue 6, p763.

Ankur Bhardwaj, Anne Grobler, Goutam Rath, Amit Kumar Goyal, Amit Kumar Jain, Abhinav Mehta. 2016. Pulmonary delivery of anti-tubercular drugs using ligand anchored pH sensitive liposomes for the treatment of pulmonary tuberculosis. *Bentham Science Publishers.* Volume 13, issue 6, p909-922.

Melinda Barkhuizen, David G Anderson, Anne F Grobler. 2016. Advances in GBA-associated Parkinson's disease—Pathology, presentation and therapies. *Neurochemistry international.* Vol 93. p6-25.

Thomas Ebenhan, Isabel Schoeman, Daniel D. Rossouw, Anne Grobler, Biljana Marjanovic-Painter, Judith Wagener, Hendrik G. Kruger, Mike M. Sathekge, Jan Rijn Zeevaart. 2016.

Evaluation of a Flexible NOTA-RGD Kit Solution Using Gallium-68 from Different ⁶⁸Ge/⁶⁸Ga-Generators: Pharmacokinetics and Biodistribution in Nonhuman Primates and Demonstration of Solitary Pulmonary Nodule Imaging in Humans. *Molecular Imaging and Biology.* Vol 19. p469 - 482.

Madichaba P. Chelopo, Lonji Kalombo, James Wesley-Smith, Anne Grobler, and Rose Hayeshi. 2016. The fabrication and characterization of a PLGA nanoparticle–Pheroid® combined drug delivery system. *J Mater Sci.* Vol 52. p3133 – 3145.

Melinda Barkhuizen, David G. Anderson, Francois H. van der Westhuizen, Anne F. Grobler. 2016. “Benign” GBA variants may alter gene splicing in South African Parkinson's disease cases. *Parkinson and Related Disorders.* Vol 22. P172.

A. Grobler, Z. Perez Sierra, H.J Viljoen. 2015. Modeling nanoparticle delivery of TB drugs to granulomas. *Journal of Theoretical Biology.*ISSN 0022-5193 388(2016) 85-95.

B. Vusani Mandiwana, Lonji Kalombo, Kobus Venter, Mike Sathekge, Anne Grobler, JanRijn Zeevaart. 2015. Samarium oxide as a radiotracer to evaluate the in vivo biodistribution of PLGA nanoparticles. *Journal of Nanoparticle Research.* ISSN 1388-0764, Volume 17, Number 9.

Robert G. E. Krause, Anne F. Grobler, and J. P. Dean Goldring,2015. Comparing Antibody Responses in Chickens Against Plasmodium falciparum Lactate Dehydrogenase and Glycereraldehyde-3-phosphate Dehydrogenase with Freund's and Pheroid Adjuvants, Taylor & Francis Group, LLC.

A Bhardwaj, A., Mehta, S., Yadav, S., Singh , S., Grobler, A. Goyal, A. and Mehta, A. Pulmonary delivery of antitubercular drugs using spray-dried lipid – polymer hybrid nanoparticles. *Artificial Cells, Nanomedicine, and Biotechnology* Aug 27:1-12. ISSN: 2169-1401 print / 2169-141X online (2015).

Grobler, L., Chavchich, M. Haynes, R.K., Edstein, M.D. and Grobler, A.F. 2014. Assessment of the induction of dormant ring stages in Plasmodium falciparum parasites by artemisone and artemisone entrapped in Pheroid Vesicles *In Vitro. Antimicrob. Agents Chemother.* 58(12):7579.

Grobler, L., Haynes, R., Masimirembwa, C., Thelingwani, R., Steyn, H.S., Steenkamp, P., Grobler, A. 2014. The effect of the Pheroid delivery system on the *in vitro* metabolism and *in vivo* pharmacokinetics of artemisone. *Expert Opinion on Drug Metabolism & Toxicology.* 10(3):313-325.

Ndong, I.C., van Reenen, M., Boakye, D.A., Mbacham, W.F. and Grobler, A.F. 2014. Trends in malaria admissions at the Mbakong Health Centre of the North West Region of Cameroon: a retrospective study. *Malaria Journal.* 13:328.

Grobler, A, O. Levets, S. Whitney, C. Booth and HJ Viljoen, “Rapid Cell Lysis and DNA Capture in a Micro Lysis Reactor”, *Chem. Eng. Sci.* 81 pp311-318. (2012).

D. SYNERGISTIC ACTIVITIES

A national facility for preclinical drug development, funded by the South African Dept. of Science and Technology, was established in South Africa as a joint venture between the North-West University and government.

A program for the development of a delivery technology (Pheroid technology) has led to the registration and commercialization of a bio-nanotransporter for delivery in plants (Anngro) in a number of countries by a company (Biopher Pty. Ltd) after licensing the technology from the North-West University.

A program on the rapid diagnosis of tuberculosis has been developed in collaboration with researchers at University of Nebraska - Lincoln. The work is funded by the SA Dept. Science and Technology and the SA Medical Research Council.

During 2017/2018 Prof. Grobler has served on the Ministerial Review Panel of Institutional Science, Technology and Innovation for the South African Minister of Science and Technology. Prof Grobler has supervised more than twenty PhD and MSc students.