

Olakunle Sanni

28, Louis Botha Avenue, Cape town, South Africa | (+27) 787283183 | kunlesola2810@gmail.com

Nationality: Nigerian | Passport N.: A11442811: | South African ID No.: 7910286076180

ORCID: <https://orcid.org/0000-0002-4924-9005>

Google Scholar: <https://scholar.google.co.za/citations?hl=en&user=fW1fTewAAAAJ>

SUMMARY

- PhD with 3+ years of experience in preclinical testing using various models including *in vitro*, *ex vivo*, *in silico*, and *in vivo*, BSL-2 & 3 labs.
- Extensive experience in Molecular Biology and Biotechnology, with special focus on anti-diabetic properties of natural products both natural and synthetic.
- Excellent analytical and technical skills to execute effectively on complex projects such as cardiometabolic disorder, type 2 diabetes and obesity with keen interests in metabolomics, proteomics, and molecular expression associated with these diseases.
- Outstanding interpersonal skills with a steadfast commitment to excellence in fast-paced, matrixed organization.

Expertise and Skills

- Diabetic and biochemical analysis
- Metabolomics and phytochemicals
- Animal modelling
- Statistical analysis using SPSS and graph pad
- Proficiency in all areas of Microsoft Office, including Access, Excel, Word and PowerPoint
- Excellent communication skills, both written and verbal

Employment History

Division of Medical Physiology, Department of Biomedical Sciences, Faculty of Medicine & Health Sciences. Stellenbosch University, South Africa

Postdoctoral Fellow

07/2022 – till present

- Train and provide support to postgraduate students.
- Provide support and travel clinical research team to sites to recruit and assess patients.
- Conduct cardiometabolic research.
- Co-supervised one Honours degree and 2 master's degree students to graduation
- Co-lead the day-to-day experimentation, analyses, sample collection, storage, online data capturing, data management.
- Responsible for maintaining the on- line database, and coordinate data collection and field site operations in conjunction with existing research team members,
- Report to the head of my research unit on a regular basis, where updates will be supplied, and troubleshooting done where necessary.

- Conduct the assays (and/or assist students during these processes), and conduct high-resolution respirometry, and teach the postgraduate students.
- Responsible for analysing data, in collaboration with a professional biostatistician from Biostatistics Unit.

Centre of Excellence for Pharmaceutical Sciences (Pharmacem), School of Health Sciences North-West University (NWU), Potchefstroom 2357, South Africa

Postdoctoral Fellow

09/2019 – 06/2022

- Conceptualization, design and implementation of novel research projects
- Routine presentation of research findings in group meeting
- Maintenance of laboratory housekeeping, health and safety measures
- Training and co-supervision of postgraduate students
- Successfully trained, mentored and co-supervised one master to graduation
- Reviewing research project
- Writing scientific reports, presenting scientific data, and publishing findings in peer-review journals
- proposal as member of the North-West University (NWU), Potchefstroom Campus, Centre of Excellence for Pharmaceutical Sciences (Pharmacem)

Department of Biochemistry, University of Kwazulu-Natal, Westville Campus, Durban 4000 South

Teaching Assistant/Demonstrator

07/2016 – 10/2019

- Tutored and mentored undergraduate students on Biochemistry Modules.
- Managed and facilitated Biochemistry practical sessions in introductory to Biochemistry (Bimi 120), introduction to Biomolecules (Bioc 201), Biochemistry for Biologists (BIOC 203), RNA Chemistry and Gene (Bioc 307), and Nucleic acids Biosynthesis (Bioc 315)
- Facilitated student comprehension of critical Biochemistry concepts
- Offered guidance on exam preparation and future course selection
- Co-supervised 2 Honours degree students and leading to successfully completion of their postgraduate studies

Teaching Service Commission, Owo; Ondo State Nigeria

Classroom Teacher

07/2013 – 06/2016

- Taught three senior-level chemistry courses using curriculum –based lessons plan
- Designed, tested and supervised weekly laboratory experiments.
- Ensured students understand and follow all safety rules for laboratory experiments
- Assigned and evaluated all coursework, submitted grades and maintained contact with parents regarding student performance
- Preparing students for Senior School Certificate Examination in Chemistry

Zonal Teaching Service Commission, Owo; Nigeria

- Handlings of mails, promotion matters of teachers,
- Serving as Secretary to monthly meetings of Secondary School Principals
- Serving as the PRO of the Committee
- Serving as planning and research officer in the analysis of monthly return from secondary Schools using excel spreadsheet
- Compilation of Ondo State teachers' seniority list for the re-articulation of public secondary schools in the state
- Serve as Secretary and member to various Ad hoc committees such as verification and screening Committee for verification exercise of public Primary schools
- Compilation of Seniority Committee of the Zonal Teaching Service Commission, Owo

Education

Year awarded

University of Kwazulu-Natal, Durban Westville, South Africa <i>Doctor of Philosophy (Ph.D. Biochemistry)</i>	2019
Kogi State University Anyigba, Nigeria <i>Master of Science Degree (M.Sc. Biochemistry)</i>	2015
University of Ado Ekiti, Ekiti State, Nigeria <i>Bachelor of Science Degree in Biochemistry (B.Sc.) (Second Class (Upper) Division)</i>	2001
Adeyeri/Iyere Comp. H/S Owo; Ondo State, Nigeria <i>Senior School Certificates</i>	1995

Professional certification

Year awarded

North-West University, Potchefstroom, South Africa <i>Certificate in Animal Handling and principle of Animal research</i>	2020
---	------

LABORATORY TECHNIQUES	
Biochemical assays	Albumin ELISA, Viability assay, protein assay, chemokines assay, cytokines assay, Western Blot, Mitochondria function Assay using Orobos
Molecular biology	RT-qPCR, RNA isolation, DNA isolation
Animal model development	Diabetic disease model establishment, drug administration, rat liver and brain harvest, blood collection from tail vein blood, necropsy, tissue sample preparation, histology
Equipment	Bright field, Scanning electron microscopy and transmission electron microscopy, BD Accuri™ C6 Flow cytometer
Other Lab Skills	Radiolabelling,
OTHER SKILLS	

Software	GraphPad Prism, Microsoft Word, Excel, and PowerPoint, ImageJ and SPSS
Languages	English: professional proficiency

PUBLICATIONS

1. **Sanni, O.** and Terre'Blanche, G.. Therapeutic potentials of agonist and antagonist of adenosine receptors in type 2 diabetes. *Reviews in Endocrine and Metabolic Disorders* (2021), pp.1-18. <https://doi.org/10.1007/s11154-021-09668-8>
2. Oyeboode, O. A., Erukainure, O. L., Mopuri, R., **Sanni, O.**, Koorbanally, N. A., & Islam, M. S. Butanol fraction of *Alstonia boonei* De Wild. leaves ameliorate oxidative stress and modulate key hypoglycaemic processes in diabetic rats. *Archives of Physiology and Biochemistry* (2021). 1-14. journal-article DOI: 10.1080/13813455.2021.1899240
3. Adeleke, A.A., Islam, M.S., **Sanni, O.**, Mocktar, C., Zamisa, S.J. and Omondi, B. Aryl variation and anion effect on CT-DNA binding and in vitro biological studies of pyridinyl Ag (I) complexes. *Journal of Inorganic Biochemistry*, 214, p.111266 (2021). journal-article DOI :10.1016/j.jinorgbio.(2020).111266
4. **Sanni, O.**, Erukainure, O.L., Oyeboode, O. and Islam, Fractions from *Annona muricata* attenuate oxidative stress in pancreatic tissues, inhibits key carbohydrate digesting enzymes and intestinal glucose absorption but enhances muscle glucose uptake. *Journal of Food Biochemistry* (2020). journal-article DOI: 10.1111/jfbc.13211
5. OL Erukainure, **O Sanni**, VF Salau, NA Koorbanally and S Islam, *Cola nitida* (Kola Nuts) Attenuates Hepatic Injury in Type 2 Diabetes by Improving Antioxidant and Cholinergic Dysfunctions, and Dysregulated Lipid Metabolism (2020). *Endocrine, Metabolic & Immune Disorders Drug Targets* journal-article DOI: 10.2174/1871530320666200628030138
6. Xiao, X., Erukainure, O.L., **Sanni, O.**, Koorbanally, N.A. and Islam, M.S. Phytochemical properties of black tea (*Camellia sinensis*) and rooibos tea (*Aspalathus linearis*); and their modulatory effects on key hyperglycaemic processes and oxidative stress. *Journal Of Food Science and Technology* (2020). Journal-article doi.org/10.1007/s13197-020-04471-w
7. Oyeboode, O. A., Erukainure, O. L., **Sanni, O.**, & Islam, M. S. (2020). *Crassocephalum rubens* (Juss. Ex Jacq.) S. Moore improves pancreatic histology, insulin secretion, liver and kidney functions and ameliorates oxidative stress in fructose-streptozotocin induced type 2 diabetic rats. *Drug and chemical toxicology*, 1-10. Journal-article doi. 10.1080/01480545.(2020).1716783
8. **Sanni, O.**, Erukainure, O.L., Oyeboode, O. and Islam, M.S., Anti-hyperglycemic and ameliorative effect of concentrated hot water-infusion of *Phragmanthera incana* leaves on type 2 diabetes and indices of complications in diabetic rats. *Journal of Diabetes & Metabolic Disorders* (2019). Journal-article DOI: 10.1007/s40200-019-00456-518(2).
9. **Olakunle Sanni**, Ochuko L. Erukainure, Chika I. Chukwuma, Neil A. Koorbanally, Collins U. Ibeji, Md. Shahidul Islam; *Azadirachta indica* inhibits key enzyme linked to type 2 diabetes in vitro, abates oxidative hepatic injury and enhances muscle glucose uptake ex vivo *Biomedicine & Pharmacotherapy* (2019). journal-article DOI: 10.1016/j.biopha.2018.10.171
10. **Olakunle Sanni**, Ochuko L. Erukainure, Olajumoke Oyeboode, Neil A. Koorbanally, Md. Shahidul; Islam Concentrated hot water-infusion of *phragmanthera incana* improves

muscle glucose uptake, inhibits carbohydrate digesting enzymes and abates Fe²⁺-induced oxidative stress in hepatic tissues *Biomedicine & Pharmacotherapy* (2018) journal-article DOI: 10.1016/j.biopha.(2018).09.014

11. Ochuko Erukainure Omamuyovwi Meashack Ijomone, **Sanni Olakunle**, Md. Shahidul Islam (2019) Type 2 diabetes induced oxidative brain injury involves altered cerebellar neuronal integrity and elemental distribution, and exacerbated Nrf2 expression: therapeutic potential of raffia palm (*Raphia hookeri*) wine. *Metabolic brain disease* (2019): 1-15 <https://doi.org/10.1007/s11011-019-00444-x>
12. Ochuko L. Erukainure, **Olakunle Sanni**, Omamuyovwi M. IjomoneCollins U. Ibeji Chika I. Chukwumaa, Md Shahidul Islam, The antidiabetic properties of the hot water extract of kola nut (*Cola nitida* (Vent.) Schott & Endl.) in type 2 diabetic rats *Journal of Ethnopharmacology Journal of Ethnopharmacology* 242 (2019) 112033 doi.org/10.1016/j.jep.2019.112033
13. Ochuko L. Erukainure, Chika I. Chukwuma, **Olakunle Sanni**, Motlalepula G. Matsabisa Md. Shahidul Islam, Histochemistry, phenolic content, antioxidant, and anti-diabetic activities of *Vernonia amygdalina* leaf extract. *Journal of Food Biochemistry* (2018), 43(2), e12737. DOI: 10.1111/jfbc.12737
14. Ochuko L. Erukainure, Nicholisha Narainpersad, Moganavelli Singh, **Sanni Olakunle**, Md. Shahidul Islam (2018) Clerodendrum volubile inhibits Key Enzymes linked to Type 2 Diabetes but Induces Cytotoxicity in Human Embryonic Kidney (HEK293) Cells via Exacerbated Oxidative Stress and Proinflammation. *Biomedicine & Pharmacotherapy* 106 (2018) 1144– 152. [Doi.org/10.1016/j.biopha.2018.07.013](https://doi.org/10.1016/j.biopha.2018.07.013)
15. **O. Sanni**, O. Obidoa and J. Omale, 2014. Toxicity, Anti-Lipid Peroxidation, Invitro and In vivo Evaluation of Antioxidant Activity of *Annona muricata* Ethanol Stem Bark Extract *American Journal of Life Sciences* (2014) journal-article DOI: [doi:10.11648/j.ajls.20140205.14](https://doi.org/10.11648/j.ajls.20140205.14)

CONTRIBUTION TO BOOK (INTERNATIONAL/LOCAL)

1. Ochuko L. Erukainure, **Olakunle Sanni**, Md. Shahidul Islam Clerodendrum volubile: Phenolics and Applications to Health. In: Watson R, Preedy V, Zibadi S (Eds). *Polyphenols: Mechanisms of Action in Human Health and Disease* Polyphenols: Mechanisms of Action in Human Health and Disease 2018-08-09 | book-chapter Part of ISBN: DOI: 10.1016/B978-0-12-813006-3.00006-4
2. **Olakunle Sanni**, Ochuko L. Erukainure, Md. Shahidul Islam. Pathology, Oxidative Stress and Dietary Antioxidants: *Dacryodes edulis*: protective antioxidant effects of diabetes pathology

UNPUBLISHED RESEARCH PAPERS

1. **Sanni, O.** and Terre'Blanche, G Dual A1 and A2A Adenosine Receptor antagonists, methoxy substituted 2-benzylidene-1-indanone, suppresses intestinal postprandial glucose and attenuates hyperglycaemia in fructose-streptozotocin diabetic rats *BMC Endocrine Disorders* (under Review)
2. **Sanni, O.** Zander Lindeque, and Terre'Blanche, G. Attenuation of hepatic glucose production by methoxy substituted 2-benzylidene-1-indanone in type 2 diabetes rats: GC-MS and ¹H-NMR Based metabolomics approach. (in preparation)
3. **Sanni, O.** Kardia Jankowitz, and Terre'Blanche, G. Metabolic profiling of Dual A1 and A2A Adenosine Receptor antagonists, methoxy substituted 2-benzylidene-1-indanone as anti-hyperglycemic agents in the serum of streptozotocin induced diabetic rats (in preparation)

4. **Sanni, O** Geldard Maarman, and Terre'Blanche, G. Attenuation of diabetic of cardiomyopathy complication by 2-benzylidene-1-indanone via suppression of mitochondrial oxidative stress in diabetic rats (in preparation)

UNPUBLISHED CONFERENCES/WORKSHOP PAPERS

1. **Olakunle Sanni**, Ochuko L. Erukainure, Md. Shahidul Islam. The Anti-Hyperglycemic Effects of Butanol Fraction of Azadirachta Indica in a Type 2 Diabetes Rat Model: Possible Mechanism of Action, **School of Life Sciences Research Day and Exhibition, April 2019**, University of KwaZulu-Natal, Durban, South Africa.
2. **Olakunle Sanni**, Ochuko L. Erukainure, Chika I. Chukwuma, Neil A. Koorbanally, Collins U. Ibeji, Md. Shahidul Islam; Azadirachta indica inhibits key enzyme linked to type 2 diabetes in vitro, abates oxidative hepatic injury and enhances muscle glucose uptake ex vivo, **12th International Conference on Advanced Technologies & Treatments for Diabetes, 20-23 February 2019, Berlin, Germany.**
3. **Olakunle Sanni**, Ochuko L. Erukainure, Olajumoke Oyebode, Neil A. Koorbanally, Md. Shahidul Islam, Concentrated hot water-infusion of phragmanthera incana improves muscle glucose uptake, inhibits carbohydrate digesting enzymes and abates Fe²⁺-induced oxidative stress in hepatic tissues, **College of Agriculture, Engineering, and Sciences Research Day and Exhibition, October 2018, University of KwaZulu-Natal, Durban, South Africa.**
4. **Olakunle Sanni**, Ochuko L. Erukainure, Chika I. Chukwuma, Neil A. Koorbanally, Collins U. Ibeji, Md. Shahidul Islam; Azadirachta indica inhibits key enzyme linked to type 2 diabetes in vitro, abates oxidative hepatic injury and enhances muscle glucose uptake ex vivo, **South African Society of Biochemistry and Molecular Biology (SASBMB) and the Federation of African Societies of Biochemistry and Molecular Biology (FASBMB) Conference, 8-11 July 2018, North-West University, Potchefstroom, South Africa.**
5. **Olakunle Sanni**, Ochuko L. Erukainure, Chika I. Chukwuma, Neil A. Koorbanally, Collins U. Ibeji, Md. Shahidul Islam; Azadirachta indica inhibits key enzyme linked to type 2 diabetes in vitro, abates oxidative hepatic injury and enhances muscle glucose uptake ex vivo, **School of Life Sciences Research Day and Exhibition, April 2018, University of KwaZulu-Natal, Durban, South Africa.**
6. **Olakunle Sanni**, Ochuko L. Erukainure, Olajumoke Oyebode, Neil A. Koorbanally, Md. Shahidul; Islam Concentrated hot water-infusion of phragmanthera incana improves muscle glucose uptake, inhibits carbohydrate digesting enzymes and abates Fe²⁺-induced oxidative stress in hepatic tissues, **College of Agriculture, Engineering, and Sciences Research Day and Exhibition, October 2017, University of KwaZulu-Natal, Durban, South Africa.**
7. **Olakunle Sanni**, Ochuko L. Erukainure, Neil A. Koorbanally, and Md. Shahidul Islam, Crude Extract of Anonna muricata leaves attenuates oxidative stress in pancreatic tissue and modulate enzymes linked to diabetes in vitro and in silico, **School of Life Sciences Research Day and Exhibition, April 2017, University of KwaZulu-Natal, Durban, South Africa**

Postgraduate student supervision

2021-present - (co-supervisor)

Kardia Jankowitz (MSc. Biochemistry)

Registration: January 2021 – North-West University, Potchefstroom

Anticipated graduation date: December 2022

Thesis Title- Identifying antidiabetic properties of a novel dual adenosine antagonist through metabolic profiling in the serum of streptozotocin induced diabetic rats.

HONOURS, SCHOLARSHIP, FELLOWSHIPS AND PRIZES/AWARDS

Awards/Prizes	Amounts (ZAR)	Year
University of Kwazulu-Natal Postgraduate Fee Remission Runners Up, Best Oral Presentation, School of Life Science		2016 - 2019
Research Day, University of Kwazulu-Natal, South Africa		2017
DST-NRF Innovation Doctoral funding (Grant NO: 112414)		2018 - 2019
NRF Current Scholarship and Fellowship Holders Travel Grant		11/2018

Volunteering/community engagement

- Volunteered as an Admin officer at a COVID-19 vaccination center in Potchefstroom where I assisted in documenting the vaccination data.
- Involved in community engagement programme as a Technical Officer, where I collaborate with a media organisation on the need for early detection of type 2 diabetes.

References

Dr Gerald J. Maarman

CARMA: Centre for Cardio-Metabolic Research in Africa
Division of Medical Physiology, Department of Biomedical Sciences
Faculty of Medicine & Health Sciences
Stellenbosch University
South Africa
Email: gmaarman@sun.ac.za

Prof. Gisella Terre'Blanche,

Centre of Excellence for Pharmaceutical Sciences (Pharmacem),
School of Health Sciences.
North-West University (NWU)
Potchefstroom, 2357
South Africa
Email: Gisella.Terreblanche@nwu.ac.za