Curriculum Vitae

Amanda Genis, A, Dr <amanda_g@sun.ac.za>
Senior Researcher, Department of Biomedical Sciences
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Contact Information

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Education

2014	PhD in Medical Physiology	University of Stellenbosch
2008	MSc in Medical Physiology	University of Stellenbosch
2008	Honours in Psychology	University of South Africa
2002	BSc in Psychology	University of South Africa

Employment History

Position	Researcher
Organization	University of Stellenbosch
Appointed From / To	January 2008 - current

Position	Research Assistant
Organization	University of Stellenbosch
Appointed From / To	March 2005 – January 2008

Position	Administration Clerk
Organization	Virgin Active
Appointed From / To	January 1995 – January 2005

Research

Scientific Domain	Health and Medical Sciences
Primary Research Field	Medical sciences: Basic
Secondary Research Field	Epidemiology, incl. burden of disease
Fields of Specialization	Cardiovascular research

Post-Graduate Teaching / Supervision

Sam van Rensburg (2011), Honours – Medical Physiology: "Oxidative and nitroxidative stress in TNF-α and hypoxia stimulated endothelial cells".
Supervisor

Charlize Nieuwenhuizen (2013), Honours - Medical Physiology: "Establishing a method for determining levels of nitric oxide, reactive oxygen species and cell viability in Cardiac Microvascular Endothelial Cells, using fluorescent probes and a microplate reader".
Supervisor

Tope Ogundipe (2014), Honours - Medical Physiology (Cum-Laude): "The effects of ART and obesity on vascular endothelial function". Supervisor

Dawn Mhlangu (2016), Honours - Medical Physiology: "The effects of the first and second line antiretroviral drug treatment (ART) therapy on the endothelial function of cultured aortic endothelial cells: An observational study". Supervisor

Frans Everson (2014 – 2016), MSc - Medical Physiology (Cum Laude): "Investigating the Cardiovascular Effects of Antiretroviral Drugs In a Lean and High Fat/Sucrose Diet Rat Model of Obesity: An In Vivo and Ex Vivo Approach". Supervisor

Sana Charania (2015 – 2016), MSc – Medical Physiology (Cum Laude): "Investigating the effects of first line and second line antiretroviral drugs on HIV exposed endothelial function - A clinical study, supported by a mechanistic in-vitro approach". Co-supervisor

Clara Marincowitz (2017 – 2018), MSc – Medical Physiology (Cum Laude): "The effects of HIV-1 proteins and antiretroviral therapy on aortic endothelial cells. An in vitro investigation emulating the South African context". Supervisor

Jance Peterson (2019), Honours – Medical Physiology (current): "The Effects of HIV & Antiretroviral Therapy on Vascular Function – A pilot study". Supervisor

Charnay Cunningham (2019-2021), PhD – Medical Physiology (current): "Impact of charged particle irradiation on tumour angiogenesis". Supervisor

Completed and ongoing projects:

Completed:

The cardiovascular effects of antiretroviral drugs in lean and high-fat diet, insulin-resistant rats. The effects of ART and obesity on cardiovascular endothelial function.

South African ART drug combinations: Cardiovascular effects in insulin resistant, obese rats.

Completed:

The vascular and endothelial effect of antiretroviral therapy (*ex vivo* study) – functional effects and mechanisms.

Completed:

The effects of HIV-1 proteins and antiretroviral therapy on aortic endothelial cells. An in vitro investigation emulating the South African context.

Current / Ongoing:

The vascular effects of HIV-1 proteins and antiretroviral therapy (ART) – functional effects and mechanisms.

Chapter in book:

"Endothelial Dysfunction: Risk Factors, Role in Cardiovascular Diseases and Therapeutic Approaches. Title of chapter: Attenuation of eNOS-NO biosynthesis, up-regulation of antioxidant proteins and differential protein regulation in TNF-alpha-treated cardiac endothelial cells: Early signs of endothelial dysfunction (2014)". ISSN/ISBN Number: 978-1-63321-203-9. First author

Peer Reviewed Publications:

1. Melatonin receptor-mediated protection against myocardial ischaemia/reperfusion injury: role of its anti-adrenergic actions. Genade S, **Genis A**, Ytrehus K, Huisamen B, Lochner A. Journal of Pineal Research (2008); 45: 449–458. PMID: 18691357, DOI:10.1111/j.1600-079X.2008.00615.

2. Postconditioning the isolated working rat heart. Van Vuuren D, **Genis A,** Genade S, Lochner A. Cardiovasc Drugs Ther (2008); 22: 391. PMID: 18563544, DOI:10.1007/s10557-008-6119-6.

3. A role for the RISK pathway and K-ATP channels in pre- and post-conditioning induced by levosimendan in the isolated guinea pig heart. Du Toit EF, **Genis A**, Opie LH, Pollesello P, Lochner A. Br J Pharmacol.(2008): 154:41-50. PMID: 18297097, PMCID: PMC2438987, DOI: 10.1038/bjp.2008.52.

4. Dexamethasone-induced cardioprotection: a role for the phosphatase MKP-1? Fan WJ, Genade S, **Genis A**, Huisamen B, Lochner A. . Life Sci.(2009): 5;84(23-24):838-46. PMID: 19361533, DOI: org/10.1016/j.lfs.2009.03.014.

5. Pre-treatment with a DPP-4 inhibitor is infarct sparing in hearts from obese, pre-diabetic rats. Huisamen B, **Genis A**, Marais E, Lochner AC. Cardiovasc Drugs Ther. (2011); Feb;25(1):13-20. PMID: 21088878, DOI: 10.1007/s10557-010-6271-7.

6. Endothelial dysfunction: the early predictor of atherosclerosis. Mudau M, **Genis A**, Lochner A, Strijdom H. Cardiovasc J Afr. (2012): 23(4):222-31. PMID: 22614668, PMCID: PMC3721957, DOI: 10.5830/CVJA-2011-068.

7. DPP-4 inhibition is cardioprotective and restores pancreatic function in obese, insulin resistant rats (2014). Huisamen, B; **Genis, A**; Marais, E and Strijdom, H. Cardiovascular Research. Volume: 103, Supplement 1, Meeting Abstract: P507. DOI: 10.1093/cvr/cvu091.180.

8. Cardiometabolic and vascular effects of treatment with a fixed-dose combination anti-retroviral drug containing nucleoside and non-nucleoside reverse transcriptase inhibitors (NRTI's and NNRTI's) in adult rats. Strijdom, H; Goswami, N; De Boever, P; Westcott, C; Ogundipe, T; Everson, F and **Genis, A**. Atherosclerosis (2016); Volume: 252, Pages: E166-E166. DOI: 10.1016/j.atherosclerosis.2016.07.791.

9. Investigating the cardiovascular effects of antiretroviral drugs in a lean and high fat/sucrose diet rat model of obesity. **Genis, A**; Everson, FP; Ogundipe, T; Grandjean, T; De Boever, P; Goswami, N and Strijdom, H. Cardiovascular Research (2016); Volume: 111, Pages: S74-S75, Supplement: 1.

10. A histomorphometric study on the effects of antiretroviral therapy (ART) combined with a high-calorie diet (HCD) on aortic perivascular adipose tissue (PVAT). S.Nel, H.Strijdom, **A.Genis**, F.Everson, R.Van Wijk and S.H.Kotzé. Acta Histochemica (2017); Volume 119, Issue 5, June 2017, Pages 555-562. PMID: 28748641. DOI: 10.1016/j.acthis.2017.05.009.

11. Treatment with a fixed dose combination antiretroviral therapy drug containing tenofovir, emtricitabine and efavirenz is associated with cardioprotection in high calorie diet-induced obese rats. Everson, F., **Genis, A**., Ogundipe, T., De Boever, P., Goswami, N., Lochner, A., Blackhurst, D. and Strijdom, H., (2018). PloS one, 13(12), p.e0208537.

12. Vascular endothelial dysfunction in the wake of HIV and ART. Marincowitz, C., **Genis, A**., Goswami, N., De Boever, P., Nawrot, T.S. and Strijdom, H., (2018). The FEBS Journal. doi: 10.1111/febs.14657.

Conferences:

International Conferences

Refereed:

1. Frontiers in Cardiovascular Biology, Vienna, Austria (2018). Investigating endothelial dysfunction as a pathophysiological consequence of HIV-infection and anti-retroviral treatment. Cardiovascular Research, Volume 114, Issue suppl_1, 1 April 2018, Pages S43, https://doi.org/10.1093/cvr/cvy060.124.

2. Frontiers in Cardiovascular Biology, Florence, Italy (2016). "Investigating the cardiovascular effects of antiretroviral drugs in a lean and high fat/sucrose diet rat model of obesity". Cardiovascular Research, Volume: 111, Supplement: 1 (S74-S75), Abstract: 418.

3. 79th European Atherosclerosis Society Congress, Gothenburg, Sweden (2011). "Effects of low-dose TNF-α administration on oxidative/nitrosative stress: the Akt/eNOS/NO pathway and viability in cardiac endothelial cells". Atherosclerosis Supplements 2011; 12(1): 68.

4. 20th World Congress of the ISHR 2010. Kyoto, Japan (2010). "Protein phosphatase 2A (PP2A) in myocardial ischaemia/reperfusion injury". JMCC, supplements, S163, P-3-28-2, S163.

5. 20th World Congress of the ISHR 2010. Kyoto, Japan (2010). "Tumor necrosis factor (TNF)-α induces endothelial dysfunction (ED) in cultured cardiac microvascular Endothelial Cells (CMECs), by downregulation of the PKB/Akt-eNOS signaling pathway". JMCC, supplements, S94, P-2-21-3.

Non-refereed:

1. IUPS Conference, Birmingham, UK (2013). "Signalling responses in cardiac endothelial cells, following treatment with high concentrations of TNF-alpha, with or without co-treatment with Oleanolic Acid". Proc 37th IUPS, PCD382. First author.

National Conferences

Refereed:

1. SA Heart (2009). "A novel model of Endothelial Dysfunction (ED) in cultured cardiac microvascular endothelial cells". SA Heart 2009; 6(4): 264. First author.

2. PSSA (2010). "Tumor necrosis factor (TNF)-α induces endothelial dysfunction (ED) in cultured cardiac microvascular endothelial Cells (CMECs) by downregulation of the PKB/Akt-eNOS signaling pathway". J Mol Cell Cardiol 2010; 48 (5, S1): S94. First author.

3. SA Heart (2011). "Microvascular endothelial cell responses to inflammatory stimulation". SA Heart 2011; 8(4): 257. Co-author.

4. PSSA (2012). “Evidence of pro-survival responses in TNF-α stimulated microvascular endothelial cells”. Scientific Research and Essays April 2012; 7: 45-46. Co-author.

5. PSSA (2012). “Tumor necrosis factor (TNF)-α: towards a model of endothelial dysfunction”. Scientific Research and Essays April 2012; 7: 40. Co-author.

6. SA Heart (2012). “Proteomic characterization of cardiac endothelial cell responses to TNF-alpha, hypoxia and asymmetric dimethylarginine (ADMA) stimulation”. SA Heart 2012; 9(3): 194. Co-author.

7. SA Heart (2017). “Fenofibrate protects endothelial cells against the harmful effects of TNF-alpha”. SA Heart, 14(1):22-34. Co-author.

Current *h*-index:

6

Other Contributions to Science:

Invited Commentary by the International Atherosclerosis Society:
“When traditional and non-traditional cardiovascular risk factors target the vascular endothelium: A double blow to the burden of disease in South Africa (2013)”. http://www.athero.org/commentaries/comm1135.asp.
Co-author, research & intellectual input.

Awards or achievements:

Award for “best poster” at Physiological Society of South Africa (2012):
A complete profile of the cardiac microvascular endothelial cell proteome, following a 24 hour TNF-α treatment.
A.Genis , S. Smit , C. Westcott , M. Mudau , H.Strijdom.

Award for “best poster” at SA Heart (2009):
A Novel Model of Endothelial Dysfunction (ED) in Cultured Cardiac Microvascular Endothelial Cells (CMECs).
A Genis, E Mudau, A Lochner & H Strijdom.