

ACADEMIC CURRICULUM VITAE

Hanél Sadie-Van Gijzen

PERSONAL DETAILS

Name: Hanél Sadie-Van Gijzen

Nationality: South African

Qualifications: BSc (cum laude) - University of Stellenbosch (US) (December 1997)

BSc Hons (Biochemistry) (cum laude) - US (December 1998)

MSc (Biochemistry) (cum laude) – US (December 2001)

PhD (Biochemistry) – US (April 2006)

PhD thesis title: Transcriptional regulation of the mouse gonadotropin-releasing hormone receptor gene in pituitary gonadotrope cell lines

Laboratory skills: Animal studies, mammalian cell culture (including primary cultures from fat and bone), molecular biology (DNA, RNA, protein analyses), gene expression analyses, cell staining and image analysis.

Additional training: Training course and SA Veterinary Council authorization for the handling of research animals (rats), to perform para-veterinary procedures including feeding, weighing, oral gavage, intraperitoneal injection and euthanasia (May 2018, repeated February 2024).

STUDENT AWARDS

Honours for Student Leadership, University of Stellenbosch, 2003

Academic Honours, University of Stellenbosch, 2004

EMPLOYMENT HISTORY

Current: Senior researcher (permanent FMHS appointment, full-time), Division of Medical Physiology, Dept of Biomedical Sciences, Faculty of Medicine and Health Sciences (FMHS), Stellenbosch University

April 2018 – March 2021: Senior researcher (4/8, contract-based), Division of Medical Physiology, Dept of Biomedical Sciences, FMHS, Stellenbosch University

January 2015 – December 2017: Senior lecturer/senior researcher (4/8), Dept of Medicine, FMHS, Stellenbosch University

February 2011 – December 2014: South African Medical Research Council (SAMRC)-supported researcher (MRC Career Development Award), Dept of Medicine, Faculty of Health Sciences, Stellenbosch University

January 2006 – September 2010: Post-doctoral research fellow, Dept of Medicine, Faculty of Health Sciences, Stellenbosch University

FELLOWSHIPS

MRC 4-year Career Fellowship (2011 – 2014)

NRF Innovation Fund Post-doctoral fellowship (2008 – 2010)

Claude Leon Foundation Post-doctoral fellowship (2006 – 2007)

UNDERGRADUATE TEACHING

Replacement lecturer for 3rd year Physiology module (bone biology) – 2010

Participating lecturer for 1st year Physiology module (endocrinology) - 2023

POST-GRADUATE STUDENT SUPERVISION RECORD (2015-2024)

Main supervisor: 5 Honours students, 1 MSc student, 1 PhD student, 1 post-doctoral researcher (2018-2020).

Co-supervisor: 2 Honours students, 7 MSc students, 3 PhD students

PUBLICATIONS IN INTERNATIONAL PEER-REVIEWED JOURNALS

- **H Sadie-Van Gijsen**, L Kotze-Hörstmann 2023 Rat models of diet-induced obesity and metabolic dysregulation: Current trends, shortcomings and considerations for future research. *Obes Res Clin Pract* 17:449-457 doi: 10.1016/j.orcp.2023.09.010.

- LM Kotze-Hörstmann, DT Bedada, Rabia Johnson, Lawrence Mabasa, **H Sadie-Van Gijsen** 2022 The effects of a green Rooibos (*Aspalathus linearis*) extract on metabolic parameters and adipose tissue biology in rats fed different obesogenic diets. *Food Funct* 13(24):12648-12663. doi: 10.1039/d2fo02440c.

- LM Kotzé-Hörstmann, A Cois, R Johnson, L Mabasa, S Shabalala, PJ van Jaarsveld, **H Sadie-Van Gijsen** 2022 Characterization and comparison of the divergent metabolic consequences of high-sugar and high-fat diets in male Wistar rats. *Front Physiol* 13:904366. doi: 10.3389/fphys.2022.904366.

- TA Nyawo, PV Dlodla, SE Mazibuko-Mbeje, SXH Mthembu, TM Nyambuya, BB Nkambule, **H Sadie-Van Gijsen**, JG Strijdom, C Pheiffer 2022 A systematic review exploring the significance of measuring epicardial fat thickness in correlation to B-type natriuretic peptide levels as prognostic and diagnostic markers in patients with or at risk of heart failure. *Heart Failure Reviews* 27:665-675. doi: 10.1007/s10741-021-10160-3.

- TA Nyawo, C Pheiffer, SE Mazibuko-Mbeje, SXH Mthembu, TM Nyambuya, BB Nkambule, **H Sadie-Van Gijsen**, H Strijdom, L Tiano, PV Dlodla 2021 Physical exercise potentially targets epicardial adipose tissue to reduce cardiovascular disease risk in patients with metabolic diseases: Oxidative stress and inflammation emerge as major therapeutic targets. *Antioxidants (Basel)* 10(11):1758. doi: 10.3390/antiox10111758.

- **H Sadie-Van Gijsen** 2021 Is adipose tissue the fountain of youth? The impact of adipose stem cell aging on metabolic homeostasis, longevity and cell-based therapies. (Invited chapter) *Adv Exp Med Biol.* 1286:225-250.
- LM Kotzé-Hörstmann, **H Sadie-Van Gijsen** 2020 The modulation of glucose metabolism by leaf tea constituents – a systematic review of recent clinical and pre-clinical findings. *J Agric Food Chem* 68:2973-3005.
- **H Sadie-Van Gijsen**, LM Kotzé-Hörstmann, B Huisamen 2020 An *in vivo/ex vivo* study design to investigate effects of chronic conditions and therapeutic compounds on adipose stem cells in animal models. Invited chapter, *Methods Mol Biol* 2138:101-118.
- **H Sadie-Van Gijsen** 2019 The regulation of marrow fat by vitamin D: molecular mechanisms and clinical implications. Invited review, *Current Osteoporosis Reports* 17(6):405 – 415
- E Booyesen, **H Sadie-Van Gijsen**, SM Deane, WF Ferris, LMT Dicks 2019 The effect of vancomycin on the viability and osteogenic potential of bone-derived mesenchymal stem cells. *Probiotics Antimicrob Proteins* 11(3):1009 – 1014
- **H Sadie-Van Gijsen** 2019 Adipocyte biology: it is time to upgrade to a new model. *J Cell Physiol* 234(3):2399 – 2425
- FA Jacobs, **H Sadie-Van Gijsen**, M van de Vyver, WF Ferris 2016 Vanadate impedes adipogenesis in mesenchymal stem cells derived from different depots within bone. Published in August 2016 as part of a Special Research Topic on Marrow Adipose Tissue for *Frontiers in Endocrinology*. doi: 10.3389/fendo.2016.00108.
- WA Vieira, **H Sadie-Van Gijsen**, WF Ferris 2016 Free fatty acid G-protein coupled receptor signaling in M1 skewed white adipose tissue macrophages. *Cell Mol Life Sci.* 73: 3665 – 3676
- M Sanderson, **H Sadie-Van Gijsen**, FS Hough, WF Ferris 2015 The role of MKP-1 in the anti-proliferative effects of glucocorticoids in primary pre-osteoblasts. *PLoS ONE* 10(8):e0135358 **(awarded the SEMDSA (Society for Endocrinology, Metabolism and Diabetes of South Africa) Award for the best original publication in the field of Endocrinology and Metabolism during 2015)**
- **H Sadie-Van Gijsen**, FS Hough, WF Ferris 2013 Determinants of bone marrow adiposity: The modulation of peroxisome proliferator-activated receptor- γ 2 activity as a central mechanism. *Bone* 56:255 – 265
- **H Sadie-Van Gijsen**, NJ Crowther, FS Hough, WF Ferris 2013 The interrelationship between bone and fat: from cellular see-saw to endocrine reciprocity. *Cellular and Molecular Life Sciences* 70:2331 – 2349
- **H Sadie-Van Gijsen**, W Smith, EF du Toit, J Michie, FS Hough, WF Ferris 2012 Depot-specific and hypercaloric diet-induced effects on the osteoblast and adipocyte differentiation potential of adipose-derived stromal cells. *Molecular and Cellular Endocrinology* 348:55 – 66 **(awarded the Sanofi – Aventis Osteoporosis Award for the best original article published in the field of**

osteoporosis during 2011, and the SEMDSA Award for the best original publication in the field of Endocrinology and Metabolism during 2011)

- **H Sadie-Van Gijsen**, NJ Crowther, FS Hough, W Ferris 2010 Depot-specific differences in the insulin response of adipose-derived stromal cells. *Molecular and Cellular Endocrinology* 328:22 – 27 (**awarded the SEMDSA prize for the best basic science research article published during 2010**)
- A Kotitschke, **H Sadie-Van Gijsen**, C Avenant, S Fernandes, JP Hapgood 2009 Genomic and non-genomic cross-talk between the gonadotropin-releasing hormone receptor and glucocorticoid receptor signalling pathways. *Molecular Endocrinology* 23:1726 – 1745
- J Hapgood, **H Sadie**, W van Biljon, K Ronacher 2005 Regulation of expression of mammalian gonadotrophin-releasing hormone receptor genes. *Journal of Neuroendocrinology* 17: 619 – 638
- **H Sadie**, G Styger and J Hapgood 2003 Expression of the mouse gonadotropin-releasing hormone receptor gene in α T3-1 gonadotrope cells is stimulated by cyclic 3',5'-adenosine monophosphate and Protein Kinase A, and is modulated by Steroidogenic Factor-1 and Nur77. *Endocrinology* 144:1958 – 1971

SELECTED PRESENTATIONS AT LOCAL CONFERENCES (SINCE 2016)

- **Oral presentation** at the 28th International Symposium on Morphological Sciences (ISMS), 5-8 August 2023, Cape Town, South Africa: Atypical masses in rat bone tissue: a green Rooibos bone tomography study. J Khan (presenting author), H Sadie-Van Gijsen, L Kotze-Hörstmann, SH Kotze, JI Layman-Lemphane
- **Oral presentation** at the 49th Physiological Society of Southern Africa (PSSA) congress, 4-7 September 2022, Stellenbosch, South Africa: Characterising divergent serum total phospholipid fatty acid profiles resulting from different obesogenic diets in rats. **H Sadie-Van Gijsen (presenting author)**, PJ van Jaarsveld, LM Kotze-Hörstmann
- **Oral presentation** at the African Association of Physiological Sciences/Physiology Society of Southern Africa (AAPS/PSSA) Virtual Congress, 15 September 2021: Characterising divergent metabolic consequences of different obesogenic diets in rats using statistical modelling approaches. **H Sadie-Van Gijsen (presenting author)**, LM Kotze-Hörstmann
- **Oral presentation** at the National Osteoporosis Foundation (NOFSA) virtual congress, 5-7 August 2021: Review: The regulation of marrow fat by vitamin D: molecular mechanisms and clinical implications. H Sadie-Van Gijsen (presenting author)
- **Poster presentation** at the Non-Communicable Diseases (NCD) Research Symposium, 4 March 2020, Somerset-West, South Africa: The modulation of glucose metabolism by leaf tea constituents – a systematic review of recent clinical and pre-clinical findings. LM Kotze-Hörstmann (presenting author), **H Sadie-Van Gijsen**
- **Oral presentation** at the 1st Conference of Biomedical and Natural Sciences and Therapeutics (CoBNeST), October 2018, Stellenbosch, South Africa: Treatment of periprosthetic joint infection:

- what we can learn from work in bone-derived stem cells. Elzaan Booysen, **Hanél Sadie-Van Gijsen (presenting author)**, Jonike Dreyer, William Ferris, Marina Rautenbach, Leon MT Dicks
- **Oral presentation** at the 17th NOFSA (National Osteoporosis Foundation of South Africa) congress, March 2018, Cape Town, South Africa: Adipocytic differentiation of proximal femur-derived mesenchymal stem cells is characterized by the expression of brown fat genes and is modulated by glucocorticoids *in vitro*. FA Jacobs, **H Sadie-Van Gijsen**, WF Ferris
 - **Oral presentation** at the 17th NOFSA congress, March 2018, Cape Town, South Africa: The effect of vancomycin and a novel antibiotic on the osteoblastic differentiation of rat femur-derived mesenchymal stem cells. E Booysen (presenting author), **H Sadie-Van Gijsen**, J Dreyer, M Rautenbach, LMT Dicks
 - Oral presentation at the 17th NOFSA congress, March 2018, Cape Town, South Africa: Bone stem cell biology and bone marrow fat: an update. **H Sadie-Van Gijsen**
 - **Oral presentation** at the 45th PSSA (Physiology Society of Southern Africa) congress, August 2017, Pretoria, South Africa: The effects of two high-fat diet formulations and a Green Rooibos tea extract on *in vivo* adiposity and *ex vivo* function of cultured adipose-derived stromal cells. **H Sadie-Van Gijsen H**, SE Smit, MA Van Vuuren, B Huisamen
 - **Oral presentation** at the 52nd SEMDSA (Society of Endocrinology, Metabolism and Diabetes of South Africa) congress, May 2017, Johannesburg, South Africa: The effects of two high-fat diet formulations and a Green Rooibos tea extract on *in vivo* adiposity and *ex vivo* function of cultured adipose-derived stromal cells. **H Sadie-Van Gijsen H**, SE Smit, MA Van Vuuren, B Huisamen, W Ferris (abstract published in Journal of Endocrinology, Metabolism and Diabetes of South Africa (JEMDSA) 2017 22(1):22-23)
 - **Oral presentation** at the 51st SEMDSA congress, April 2016, Cape Town, South Africa: Coffee or tea: Could your daily "cuppa" be beneficial for weight-loss? **H Sadie-Van Gijsen**, CJF Muller, J Louw, WF Ferris (abstract published in JEMDSA 2016 21(1):11)
 - **Oral presentation** at the 51st SEMDSA congress, April 2016, Cape Town, South Africa: Glucocorticoids reduce the cell viability of MSCs derived from the proximal femur but not from bone marrow of rats. FA Jacobs (presenting author), **H Sadie-Van Gijsen**, M van de Vyver, WF Ferris (abstract published in JEMDSA 2016 21(1):11-12)

SELECTED INTERNATIONAL CONFERENCE PRESENTATIONS (SINCE 2016)

- **Oral presentation** at the 39th Congress of the International Union of Physiological Sciences (IUPS2022), 7-11 May 2022: Characterisation of the divergent metabolic consequences of isocaloric high-sugar and high-fat diets in male Wistar rats using unsupervised PCA and supervised OPLS-DA. **H Sadie-Van Gijsen (presenting author)**, L Kotze-Hörstmann
- **Oral presentation** at the Natural Products for Healthy Aging Symposium, 8 – 10 November 2021: The effects of an aspalathin-rich Rooibos (*Aspalathus linearis*) extract on metabolic

parameters and adipose tissue biology in rats fed different obesogenic diets. **H Sadie-Van Gijsen (presenting author)**, LM Kotze-Hörstmann

- **Poster presentation** at the 28th European Congress on Obesity (ECO Online 2021), 10 – 13 May 2021: The effects of an aspalathin-rich Rooibos (*Aspalathus linearis*) extract on metabolic parameters and adipose tissue biology in rats fed different obesogenic diets. Kotzé-Hörstmann LM, Ayele B, Bedada DT, Johnson R, Mabasa L, Shabalala S, **Sadie-Van Gijsen H**.

- **Poster presentation** at Keystone eSymposium, Obesity: From Cell to Patient, 1-3 February 2021: Peripheral effect of adipogenesis on ATM expression and miRNA-181b levels in cardiomyoblasts. D Botha (presenting author), M Blignaut, **H Sadie-van Gijsen**, P van Jaarsveld, B Huisamen.

- **Poster presentation** at the 3rd Bone Marrow Adiposity (BMA2017) meeting, August 2017, Lausanne, Switzerland: Adipocytic differentiation of proximal femur-derived mesenchymal stem cells is characterised by the expression of brown fat genes and is modulated by glucocorticoids *in vitro*. FA Jacobs, **H Sadie-Van Gijsen**, WF Ferris (presenting author)

- **Poster presentation** at the 2nd Bone Marrow Adiposity (BMA) meeting, 25-26 August 2016, Rotterdam, The Netherlands: Vanadate reduces adipocytic differentiation of mesenchymal stem cells derived from different regions within the rat femur. FA Jacobs (presenting author), **H Sadie-Van Gijsen**, M van de Vyver, Ferris WF

POPULAR MEDIA PUBLICATIONS

As author:

- Opinion piece on the evidence for the usefulness of tea in glycemic control:

<https://www.health24.com/Diet-and-nutrition/News/opinion-can-tea-really-lower-your-blood-sugar-20201020>

- Newspaper article on the dangers and lack of efficacy of the hCG diet:

<https://www.timeslive.co.za/ideas/2020-11-17-this-quack-diet-is-a-waste-of-money-and-potentially-harmful-doctors/>

- Newspaper article on the efficacy of herbal medicines for weight-loss:

<https://www.news24.com/health24/diet-and-nutrition/weight-loss/opinion-which-herbal-medicines-can-really-help-you-lose-weight-20210604>

- Newspaper article on the efficacy of spices for weight-loss:

<https://www.news24.com/health24/diet-and-nutrition/weight-loss/can-the-secret-to-weight-loss-be-found-in-the-spice-aisle-20210824>.

- Newspaper article on the choice between vaccines and ivermectin for protection against COVID-19 infection:

<http://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=8450>

- Newspaper article on how vaccines are our best protection against new COVID-19 variants and a prolonged pandemic:

<https://www.news24.com/health24/medical/infectious-diseases/coronavirus/opinion-sick-of-covid-19-variants-you-have-the-power-to-stop-them-from-happening-20210922>.

- Newspaper article on the use of magnesium supplementation for improved sleep and mental health:

[Magnesium https://www.news24.com/health24/medical/sleep/opinion-magnesium-an-underrated-mineral-for-improved-sleep-and-mental-health-20211122](https://www.news24.com/health24/medical/sleep/opinion-magnesium-an-underrated-mineral-for-improved-sleep-and-mental-health-20211122)

As contributor:

<https://www.dailymaverick.co.za/article/2021-04-27-rooibos-south-africas-wonder-tea-or-just-a-regular-brew/>

TV appearances

Presentation at Toyota/Stellenbosch University Woordfees Beste Professor: Watter natuurlike produkte help regtig met gewigsverlies? (Weet ons ooit?) October 2021

<https://youtu.be/OfF3RqxSNME>

OTHER SCIENCE COMMUNICATION ACTIVITIES

- Guest lectures for the FitSlim programme of Run/Walk for Life: “Food, metabolism and weight loss: some personal thoughts and perspectives” and “How to exercise for weight loss: some personal thoughts and perspectives” (2022-2024).
- Presentation at the SA Rooibos Council Rooibos Science Café, 8 November 2022, Kirstenbosch Botanical Gardens, Cape Town: “The effects of an aspalathin-rich green Rooibos extract on metabolic parameters, adipose tissue biology and adipose stem cells in rats fed different obesogenic diets.”
- Presentation at the SA Rooibos Council Health & Beauty Media Event, 2 November 2023, Mount Nelson Hotel, Cape Town: “What we know about the actions of Rooibos in the gut.”

OTHER ACADEMIC ACTIVITIES

National:

MSc thesis internal examiner, Faculty of Health Sciences, University of Stellenbosch

MSc thesis external examiner, University of Johannesburg

South African National Research Foundation (NRF) grant application reviewer and panel member, rating application reviewer and panel member, SARChI chair application reviewer and panel member

SAMRC grant application reviewer

Member of the Society of Endocrinology, Metabolism and Diabetes of South Africa (SEMDSA)

Member of the Physiology Society of Southern Africa (PSSA)

International:

Manuscript reviewer for:

Experimental Cell Research (impact factor 3.3), PPAR Research (IF 4.1), Differentiation (IF 3.0), Cell Proliferation (IF 5.0), Journal of Cellular Physiology (IF 4.5), Bioscience Reports (IF 2.5), Endocrine, Metabolic & Immune Disorders-Drug Targets (IF 1.1), Biochimie (IF 3.4), Archives of Physiology and Biochemistry (IF 2.575), Frontiers in Surgery (IF 2.57), RSC Food and Function (IF 6.3), Waste and Biomass Valorization (IF 3.5), Food Research International (IF 8.1), International Journal of Obesity (IF 5.0).