

University of the Free State
Department of Microbial, Biochemical and
Food Biotechnology
South Africa

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Laurinda Steyn, M Sc. Biotechnology

Education

- Jan 2011 – Jul 2016* **University of the Free State**
Doctor of Philosophy, PhD Biotechnology (part-time)
Bloemfontein, South Africa
- Jan 2002 – Dec 2006* **University of the Free State**
Master of Science, MSc Biotechnology (part-time)
Bloemfontein, South Africa
- Jan 1984 – Dec 1989* **Central University of Technology**
Bachelor of Technology, Medical Technician, Chemical Pathology (Part time)
Bloemfontein, South Africa

Research Experience

- Jan 2007 – present* **Researcher**
University of the Free State, Department of Microbial, Biochemical and Food
Biotechnology
Bloemfontein, South Africa

Currently working in the research group fermentation biotechnology with
special interest in continuous cultures, yeast physiology and the production
of metabolites such as bioethanol
- Apr 2000 – Dec 2006* **Assistant Researcher**
University of the Free State, Department of Microbial, Biochemical and Food
Biotechnology
Bloemfontein, South Africa
- Jul 1999 – Mar 2000* **Development Fermentation Laboratory Manager**
AECI Bioproducts (now SA Bioproduct), Research and Development
Durban, KwaZulu-Natal, South Africa

Development of Lysine production with *C. glutamicum*
- Jan 1998 – Jun 1999* **Development Fermentation Program Coordinator**
AECI Bioproducts, Research and Development
Durban, KwaZulu-Natal, South Africa

- Development of Lysine production with *C. glutamicum*
- Nov 1994 – Dec 1997* **Development Biotechnologist**
 AECI Bioproducts, Research and Development
 Durban, KwaZulu-Natal, South Africa
- Development of Lysine production with *C. glutamicum*
- Apr 1990 – Sep 1994* **Laboratory technician**
 University of the Free State, Department of Microbial, Biochemical and Food
 Biotechnology
 Bloemfontein, South Africa
- Dec 1983 – Mar 1990* **Medical Technician**
 Drs Voigt and Partners, Chemical Pathology
 Bloemfontein, Orange Free State, South Africa

Awards & Grants

- Jan 2014* Grant: NRF Thuthuka PhD track
- Jan 2013* Grant: NRF Thuthuka PhD track
- Jan 2012* Grant: NRF Thuthuka PhD track

Skills & Activities

- Skills* Yeasts, Fermentation, Ethanol Production, Industrial Biotechnology, Anaerobic Culture, Microbial Biotechnology, Bioprocess Engineering and Fermentation Technology, Microbiological Processes, Fermentation Biotechnology, Fermentation Technology, Microbial Fermentation, Industrial Microbiology, Bioprocess Engineering, Yeast Fermentation, Biotechnology Industry, Ethanol Fermentation, Biotechnological Engineering, Yeast Biotechnology, Microbial Physiology, Biotransformation, Fermentation Techniques, Environmental Biotechnology, SSF, *Saccharomyces cerevisiae*, Alcohol Dehydrogenase, Ethanol, Biomass, Bioprocess Technology, Applied Microbiology, Bioprocess optimization
- Languages* Afrikaans, English
- Scientific Memberships* South Africa Society for Microbiologists
- Interests* Nature, Gardening, Woodworking

Publication Highlights

Gabriel B Akanni, James C du Preez, Laurinda Steyn, Stephanus G Kilian: *Protein enrichment of an Opuntia ficus-indica cladode hydrolysate by cultivation of Candida utilis and Kluyveromyces marxianus*. Journal of the Science of Food and Agriculture 03/2015; 95(5). DOI:10.1002/jsfa.6985

Olukayode O Kuloyo, James C du Preez, Maria Del Prado García-Aparicio, Stephanus G Kilian, Laurinda Steyn, Johann Görgens: *Opuntia ficus-indica cladodes as feedstock for ethanol production by Kluyveromyces marxianus and Saccharomyces cerevisiae*. World Journal of Microbiology and Biotechnology 09/2014; 30(12). DOI:10.1007/s11274-014-1745-6

Journal Publications

Du Toit W. P. Schabort, Precious K. Letebele, Laurinda Steyn, Stephanus G. Kilian, James C. du Preez: *Differential RNA-seq, Multi-Network Analysis and Metabolic Regulation Analysis of Kluyveromyces marxianus Reveals a Compartmentalised Response to Xylose*. PLoS ONE 06/2016; 11(6). DOI:10.1371/journal.pone.0156242

Anneke Bekker, Laurinda Steyn, George Charimba, Piet Jooste, Celia Hugo: *Comparison of the growth kinetics and proteolytic activities of Chryseobacterium species and Pseudomonas fluorescens*. Canadian Journal of Microbiology 09/2015; DOI:10.1139/cjm-2015-0236

Anneke Bekker, Piet Jooste, Laurinda Steyn, Carina Bothma, Arno Hugo, Celia Hugo: *Lipid breakdown and sensory analysis of milk inoculated with Chryseobacterium joostei or Pseudomonas fluorescens*. International Dairy Journal 09/2015; 52. DOI:10.1016/j.idairyj.2015.09.003

Gabriel B Akanni, James C du Preez, Laurinda Steyn, Stephanus G Kilian: *Protein enrichment of an Opuntia ficus-indica cladode hydrolysate by cultivation of Candida utilis and Kluyveromyces marxianus*. Journal of the Science of Food and Agriculture 03/2015; 95(5). DOI:10.1002/jsfa.6985

Olukayode O Kuloyo, James C du Preez, Maria Del Prado García-Aparicio, Stephanus G Kilian, Laurinda Steyn, Johann Görgens: *Opuntia ficus-indica cladodes as feedstock for ethanol production by Kluyveromyces marxianus and Saccharomyces cerevisiae*. World Journal of Microbiology and Biotechnology 09/2014; 30(12). DOI:10.1007/s11274-014-1745-6

OO Ezekiel, OC Aworth, JC du Preez, L Steyn: *Cultivation of Candida utilis on cassava peel hydrolysates for single-cell protein production*.

Conference Proceedings

Laurinda Steyn, JC du Preez, J Albertyn, O de Smidt: *Phenotype microarray analysis of multiple ADH deletion mutants of Saccharomyces cerevisiae*. 31st International Specialised Symposium on Yeast, Nova Gorica & Vipava, Slovenia; 10/2014

Laurinda Steyn: *Phenotype microarray analysis of multiple ADH deletion mutants of Saccharomyces cerevisiae*. FEMS 2013, Leipzig, Germany; 07/2013

- JC du Preez, L Steyn, O de Smidt, J Albertyn: *The physiological role of alcohol dehydrogenase 5 during chemostat cultivation of Saccharomyces cerevisiae.* 13th International Congress on Yeasts (ICY), Madison, Wisconsin, USA.; 09/2012
- A Bekker, C Hugo, P Jooste, L Steyn: *Effect of temperature on growth and proteolytic activity of Chryseobacterium in milk.* 16th Biennial Congress of the SA Society for Microbiology (SASM), Cape Town, South Africa; 11/2011
- G Alkani, JC du Preez, L Steyn, SG Kilian: *Evaluation of yeast single cell protein production using a hydrolysate of Opuntia ficus-indica biomass as carbon feedstock.* 16th Biennial Congress of the SA Society for Microbiology (SASM), Cape Town, South Africa; 11/2011
- A Meyer, JC du Preez, L Steyn, SG Kilian: *The critical dissolved oxygen level in respect of glucose and xylose utilisation by Kluyveromyces marxianus.* 16th Biennial Congress of the SA Society for Microbiology (SASM), Cape Town, South Africa; 11/2011
- Laurinda Steyn, O de Smidt, JC du Preez, J Albertyn, SG Kilian: *The physiological role of alcohol dehydrogenase 5 (Adh5p) isozyme in Saccharomyces cerevisiae.* 16th Biennial Congress of the SA Society for Microbiology (SASM), Cape Town, South Africa; 11/2011
- O. Kuloyo, L. Steyn, J.C. du Preez: *A comparative evaluation of Kluyveromyces marxianus and Saccharomyces cerevisiae for bioethanol production from Opuntia ficus.* ISSY29, 29th Specialized Symposium on Yeast, Guadalajara, Mexico; 09/2011
- J Albertyn, O de Smidt, A Dukunde, MM Henn, L Steyn, JC du Preez: *Molecular and physiological aspects of alcohol dehydrogenases in the yeast Saccharomyces cerevisiae.* 16th Biennial congress of the South African Society for Microbiology, Durban; 09/2009
- JC du Preez, L Steyn, O de Smidt, A Dukunde, J Albertyn: *Phenotypic characteristics of multiple ADH deletion mutants of Saccharomyces cerevisiae.* ISSY27, Paris, France; 08/2009
- Laurinda Steyn, O de Smidt, K Ntlhokoa, J Albertyn, JC du Preez: *The role of alcohol dehydrogenase 1 and 2 in Saccharomyces cerevisiae.* 15th Biennial Congress of the SA Society for Microbiology (Bio-08); 01/2008