



Catalina Landeta Salgado

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SUMMARY STATEMENT

Chief Scientific Officer & Co-Founder of MycoSeaweed

Ph.D. in Chemical Engineering and Biotechnology, with postgraduate training in Renewable Energies, Environmental Management, and Audits, bachelor in Biology. With over 10 years of professional experience in Ecuador and Chile, developing innovation projects and scientific-technological based ventures, working in projects research, in the study of bioproducts (energy, food) from biomass and obtaining new value-added products from new microorganisms. Experience in analytical laboratory techniques such as microbiology, molecular biology, biochemistry, chemistry, biotechnological and separation processes, thoroughness and autonomous work, research capacity, proactivity, experience in student training, and preparation to work in a multidisciplinary team. Committed to the creation, dissemination, and transfer of scientific and technological knowledge.

ACADEMIC TITLES

- **Ph.D. in Chemical Engineering and Biotechnology, University of Chile, 2020**
Concentrations: Biotechnology Engineering and Microbiology
- **Master in Energy Engineering, Pontifical Catholic University of Chile, 2015**
Concentrations: Bioenergy of Biomass
- **Master in Management and Environmental Audits, Polytechnic University of Catalonia, 2013**
Concentrations: Wastewater treatment and energy valorization of waste
- **B.A. Biology, Pontifical Catholic University of Ecuador, 2006**

TEACHING EXPERIENCE

- **Teaching Assistant, University of Chile, 2023-Present**
Courses: Biology applied to engineering sciences and Renewable energy from biomass
- **Teaching Assistant, Universidad Tecnológica Metropolitana de Chile, 2022**
Courses: Microbiology and Biology
- **Teaching Guest, Universidad de las Américas, Quito-Ecuador, 2022-Present**
Courses: Importance of Engineering Sciences Chemistry and Biotechnology in the Energy and Food Industry
- **Teaching Assistant, University of Chile, 2017 - 2021**
Courses: Metabolic Engineering and Fermentation, Renewable Energy from Biomass, Chemical and Biotechnological Process Industry
- **Teaching Assistant, Ecology Polytechnic Environmental of Ecuador, 2010**
Course: Ecology, Eco-politics and Sustainable Management
- **Teaching Assistant Pontifical Catholic University of Ecuador, 2008-2010**
Course: Biochemistry Laboratory I

RESEARCH ACTIVITY

- **Project Director, CREA Y VALIDA, CORFO, Santiago-Chile, 2022 - Present**
“Production and scaling of an innovative alternative protein "Mycoseaweed" with prebiotic properties and bioactive potential through the development of a bioconversion process with macroalgae and an artificial consortium of food fungi”, N° 22CVC-206524
- **Project Director, CORFO SEMILLA, Santiago-Chile, 2022 - 2023**
“Development of Mycoseaweed Alternative Protein”, N° 21INI2-195525.
- **Postdoctoral researcher, CeBiB, University of Chile, Santiago-Chile, 2021 – 2023**
"Design and implementation of software platform and mathematical models to design and optimize sustainable continuous membrane cascade processes to purify commercially valuable polyphenolic fractions from different plant matrices".
- **Researcher, CeBiB, University of Chile, Santiago-Chile, 2018 - 2020**
Mycoseaweed: Mycoprotein from marine fungi and seaweed
- **Co-researcher, CeBiB, University of Chile, Santiago-Chile, 2015**
Extraction of proteins from seaweed
- **Associate researcher, Pontifical Catholic University of Ecuador, 2009 - 2010**
Collection of yeasts Quito-Católica
- **Researcher, Pontifical Catholic University of Ecuador, 2008 - 2009**
Obtaining biogas from different agro-industrial waste
- **Researcher, Pontifical Catholic University of Ecuador, 2008 - 2010**
RESETA: Sustainable Resources for Ethanol
- **Researcher, Pontifical Catholic University of Ecuador, 2007 - 2008**
CELLULOL: Cellulose for ethanol
- **Researcher, Pontifical Catholic University of Ecuador and INAEXPO, 2007 – 2008**
Research and development of an industrial process for the use of the energy contained in the INAEXPO plant
- **Researcher, Pontifical Catholic University of Ecuador, 2006 - 2007**
Molecular characterization of yeasts
- **Co-researcher, Pontifical Catholic University of Ecuador, 2006 - 2007**
Fractionation of the cell wall and purification of *Saccharomyces cerevisiae* Glucomannan

ACTIVITY IN COMPANIES AND FREE PROFESSION

- ✓ **Coaching of Resource Efficiency and Cleaner Production, CENDA, Melipilla and Talagante of Chile, 2015**
Workshop of Clean Production seminars for the National Council of Clean Production
- ✓ **Environmental chemistry analyst, GRUENTEC, Ecuador, 2010-2013**
Activities:
 - ✓ Management of ISO 9001, ISO 14001 and ISO 17025 standards.
 - ✓ Perform efficient chemical analysis for the control of industrial processes, characterization of water consumption, surface, underground, discharge and marine (COD, BOD, NTK, TOC, heavy metals, anions, phenols, detergents and fatty acids, among others)
 - ✓ Perform sampling of waters and soils under international standards, simple and compound according to the behavior of the discharges and measurement of flows.
 - ✓ Responsible for the HPLC and GC chromatography area.

PUBLICATIONS

- Landeta C. and Merchant F. (2022), Chapter: Biostimulants: Emerging Trend and Opportunities Book: Biostimulants: Exploring Sources and Applications. *Springer Nature*. https://doi.org/10.1007/978-981-16-7080-0_11
- Landeta, C., Medina, D., Escobar, N., Valdez, I., Lienqueo, M., Wosten, H. (2022). Identification and characterization of hydrophobin and cerato-platanin genes in the genome of *Paradendryphiella salina*. *In review to be submitted to Mycoscience*.
- Landeta, C., Cicatiello, P., Lienqueo, M. (2021). Mycoprotein and hydrophobin like protein produced from marine fungi *Paradendryphiella salina* in submerged fermentation with green seaweed *Ulva* spp. *Algal research*. <https://www.sciencedirect.com/science/article/abs/pii/S2211926421001338?dgcid=copauthor#0025>
- Landeta, C., Cicatiello, P., Stanzione, I., Medina, D., Berlanga, I., Gómez, C., Lienqueo, M. (2021). The growth of marine fungi on seaweed polysaccharides produces hydrophobic proteins with the ability to self-assembling. *Microbiological Research* <https://doi.org/10.1016/j.micres.2021.126835>
- Landeta, C., Muñoz, R., Blanco, A., Lienqueo, M. (2021). Valorization and upgrading of the nutritional value of seaweed and seaweed waste using the marine fungi *Paradendryphiella salina* to produce mycoprotein. *Algal research*. DOI/URL: <https://doi.org/10.1016/j.algal.2020.102135>
- Henry, P., Landeta, C., Paucar, F., Wikelski, C. (2013). Birds introduced in new areas show rest disorders. *Biology Letters Royal Society*, 9 (5): DOI/URL: 10.1098/rsbl.20130463.

Thesis:

- Landeta, C. (2020). Development of an integrated method for obtaining bioproducts from fungi and seaweed biomass. University of Chile
- Landeta, C. (2015). Technical-Economic Pre-Feasibility Study of the installation of a liquefaction plant with Jacinto de Agua in Ecuador. Pontifical Catholic University of Chile
- Landeta, C. (2102). Energy optimization of palmetto waste by means of an anaerobic digestion system. Polytechnic University of Catalonia, Spain.
- Landeta, C. (2006). Dynamics of the Group Size and its consequence for the role of gregarisms in the process of establishing the European sparrow (*Passer domesticus*) in the Andes of Ecuador. Pontifical Catholic University of Ecuador.

EXTRA ACADEMIC TRAINING

International oral conferences

- Landeta, C. Landeta, C., Cicatiello, P., Stanzione, I., Medina, D., Berlanga, I., Gómez, C., Lienqueo, M. The growth of marine fungi on seaweed polysaccharides produces hydrophobic proteins with the ability to self-assembling. **1st International Congress on Nano and Biotechnology, July 22- 24, Peru, 2021**
- Landeta, C., Cicatiello, P., Lienqueo, M. Mycoprotein and hydrophobin like protein produced from marine fungi *Paradendryphiella salina* in submerged fermentation with green seaweed *Ulva* spp. **12th International Phycological Congress, IPC202, 22 – 26 March, 2021.**
- Landeta, C., Muñoz, R., Blanco, A., Lienqueo, M. Valorization and upgrading of the nutritional value of seaweed and seaweed waste using the marine fungi *Paradendryphiella salina* to produce mycoprotein. **2nd Seaweed for Health 2020,**

August 24 -25, Chile, 2020.

- ✓ Landeta, C., Landeta, C., Cicatiello, P., Stanzione, I., Medina, D., Berlanga, I., Gómez, C., Lienqueo, M. Isolation and characterization of new hydrophobins from marine fungi fed using complex carbohydrates from seaweed. December-2019, **X Workshop CeBiB, Center for Biotechnology and Bioengineering, Chile. December, 2019**
- ✓ Landeta, C., Lienqueo, M. “Optimization of the production of Single Cell Protein and Hydrophobins from marine fungi fed using seaweed and seaweed waste”. **The 23rd International Seaweed Symposium (ISS 2019), Jeju Island – South Korea April 28 - May 3, 2019.**
- ✓ Landeta, C., Lienqueo, M. “Development of an integrated method for obtaining bioproducts from fungi and seaweed biomass”. **Annual Biotechnology Congress, Vancouver-Canada. July 2018.**

Poster

- ✓ Catalina Landeta, David Medina-Ortiz, Danton Freire, Álvaro Olivera-Nappa. A software platform to design and optimize solvent-free membrane filtration processes to produce cost-effective polyphenol-rich extracts from plants or fruits: application to *Aristotelia chilensis* (maqui berry) extracts. **3rd International Conference on Food Bioactives and Health, Parma-Italy, June 2022.**
- ✓ Landeta, C., Lienqueo, M. “Development of an integrated method for obtaining bioproducts from fungi and seaweed biomass”. **The 11th European Congress of Chemical Engineering and The 4th European Congress of Applied Biotechnology, ECCE11 & ECAB4, Barcelona – Spain. October 2017.**

Internships

- ✓ **November 2018 and October 2019, Utrecht - The Netherlands.** Internship in the Microbiology laboratory of Dr. Han Wosten of the University of Utrecht. The stage was focused on the identification and characterization of the hydrophobin and cerato-platanin genes of *P. salina*, using real-time PCR (qPCR).
- ✓ **September 2018, Naples - Italy.** Internship in the Chemistry laboratory of Dra. Paola Giardina, University of Naples Federico II. The stage was focused on the extraction and purification of hydrophobins from marine fungi.
- ✓ **June 2009, Belo Horizonte, Brazil.** Internship to the Laboratory of Biotechnology and Ecology of Yeasts of Dr. Carlos Rosa, Department of Microbiology, Federal University of Minas Gerais.

Training courses

- ✓ **Intellectual Property in the Knowledge Society, Institute of Industrial Property (INAPI), Santiago de Chile 2021**
- ✓ **Theoretical and practical course "Statistics for Biologists", Institute of Genetics Barbara McClintock, Lima 2021.**
- ✓ **Algal Biotechnology Techniques and Opportunities for the Sustainable Bioeconomy, Online, EIT FOOD, 2020**
Santiago de Chile, 2020
- ✓ **Venture Creation School III “Sustainable and personalized food”, Online, EIT FOOD, 2020**
Santiago de Chile, 2020
- ✓ **Ibero-American Biotechnology Congress - BioIberoamérica**
Salamanca-Spain, 2016
- ✓ **Course of theoretical and practical training in the handling of a mass spectrometer with inductively coupled plasma “ICP-MS model Agilent H 7700e”.**
Gruentec, Quito-Ecuador, 2012
- ✓ **Course on Validation of Test Methods and Estimation of Uncertainty**
Gruentec, Quito-Ecuador, 2012
- ✓ **Mass Spectrometry Course (GC / MS) coupled to Gas Chromatography and its applications in food and forensic environmental analysis,**

PUCE, Quito-Ecuador, 2011

- **Ibero-American Symposium: "Fermented Beverages: Biotechnology, Microbiology and Production Strategies**
PUCE, Quito-Ecuador, 2009
- **Course Molecular characterization of yeasts and management of wild strains**
PUCE, Quito-Ecuador, 2008

Concourse

Awarded: Semilla Inicia, CORFO, 2021

Project Title: "Development of Mycoseaweed Alternative Protein", 21INI2-195525, Santiago-Chile

Awarded: Stage I of the project submitted to the IX Contest of Projects for the Valorization of Research at the University, VIU, FONDEF CONICYT, 2019

Project Title: "Production of a functional additive for animal feed, using fungal unicellular protein and marine macroalgae", Santiago-Chile.

- **SENESCYT Fellow Open Call 2012 Second Phase.**

Scholarship consisting of financial support to pursue Master's and Doctorate studies abroad, National Secretary of Science and Technology, Ecuador.

Scientific events

- **"Science Protagonists Program". Regional Associative Project, PAR Explora of CONICYT, South Western Metropolitan Region, 2019**
Scientific Advice, Topic: "Fungal mycelium to produce biomaterials that replace plastic".
- **"Scientific internships". Regional Associative Project, PAR Explora RM-Norte. Assistant in the Scientific Advice of Professor María Elena Lienqueo, 2019**
Theme: "Seaweed to produce animal food".

Assistantships

- Committee member and support for the undergraduate report of the Civil Engineering student in Biotechnology, University of Chile, Anibal Ahumada, 2022 " Characterization and optimization of obtaining oligosaccharides from alginate from the fermentation of the brown algae *M. pyrifera* and *D. antarctica* with marine fungi
- Committee member and support for the undergraduate report of the Civil Engineering student in Biotechnology, University of Chile, Constanza Becerra, 2020 "Technical-economic pre-feasibility study of the production of Unicellular Proteins and Hydrophobins from José Paineicura Community algae residues "
- Support for the undergraduate report of the Civil Engineering student in Biotechnology, University of Chile, Rosa Muñoz, 2018
"Cultivation of marine fungi from residues of alginate rich in alginate industry".
- Advice for the memory of the student of Biotechnology Engineering, University of San Sebastián, Natalia Farias, 2018
"Optimization of SCP protein production of *Trichoderma reesei* RUT-C30 using as substrate *Ulva* spp. at laboratory scale"

COMPUTER SKILLS

- Statistical software tool: SPSS, Static Graphics, GraphPad prism (Good knowledge)
- Microsoft Office Suite: Excel, PowerPoint, Word (Good knowledge)
- Documentation: TeX, LaTeX, HTML (Basic knowledge)
- Specialized software: Matlab (Basic knowledge)
- Other software: PhyML, Mega X, siMBA, DnaSP (Good knowledge)