

Biography

Dr. Leda Guzman, Biochemist (Ph.D. Biochemistry and Molecular Biology), is an Associate professor of the Institute of Chemistry and Head of the Biomedicine and Biocatalysis Research Laboratory at the Universidad Católica de Valparaíso (PUCV) since 2007. In 1997 she finished her PhD in Biological Science and Molecular Biology at the Dr. Manuel Espinosa's laboratory in the Universidad Complutense de Madrid and SCIC (Spain). Between 1998-2000 she worked as Postdoctoral researcher with the Dr. Dietmar Pieper at the National Centre of Biotechnology- GBF, Braunschweig (Germany) and Dr. Bernardo Gonzalez in the Laboratory of Microbiology of the Faculty of Biological Sciences at Pontifical Catholic University of Chile (PUC). Until 2006 Dr. Guzmán was Researcher in the National and Immunology Reference Center of the Public Health Institute. Since 2018 is Scientific Director of the Fundación Previene, Foundation that coordinates the National Cancer Registry with focus in Lung Cancer. Since 2007 until now she has been developing biomarkers and biosensors for the detection of neoplastic pathologies. She participates actively in the research associated with the development of natural antimicrobial and antitumor agents as triterpene with therapeutic potential, with the collaboration of Prof. Dr. Elisabeth Grohmann, at the Faculty of Life Sciences and Technology at Beuth Hochschule für Technik Berlin (University of Applied Sciences), Dr. Alejandro Corvalán (PUC), Dr. Leandro Padilla, Natural response SA, Giuliano Bernal (UCN), Dr. Mónica Castro (PUCV), Dr. Fanny Guzmán (NBC), Dr. Waldo Acevedo (PUCV), Dr. Marcelo Kogan (UCh), etc. Since 1998, Dr. Guzmán is Member of the Chilean Society of "Biochemistry and Molecular Biology" and Currently she is lecturer of undergraduate students of Biochemistry graduate students of PhD programs in Chemistry (PUCV) and Biotechnology (PUCV -Universidad Federico Santa María). Dr. Leda Guzman has been advisor of more than 30 undergraduate and graduate students; she has directed a number of research projects (with public and private funding) related with cancer, its detection, and applications of natural products as potential therapeutic agents; her research has been published in important research journals.

Current Projects

- 2019-2021. FONDEF-IT1810015. Propagation program for the sustainable development of medicinal species of Rapa Nui. Scientific Researcher
- 2018-2020 -18ITE1-93756 CORFO. Development of an anti-aging facial Serum from a derived apitoxin from *Apis Mellifera* of lakes region. Scientific Director.

Publications (2007 until now)

1. Balada C., Marchant MJ., Castro M., Fassio C., Acevedo W., Zamora A & **Guzmán L** (2020) Molecular profiling based on ITS2 sequences and SSR markers and assessment of biological activity of three *Curcuma longa* ecotypes from Rapa Nui. Manuscript number: SJBS-D-20-01556
2. **Guzmán, L.**, Villalón, K., Marchant, M.J. et al (2020). In vitro evaluation and molecular docking of QS-21 and quillaic acid from *Quillaja saponaria* Molina as gastric cancer agents. *Sci Rep-Nature*. 10, 10534. <https://doi.org/10.1038/s41598-020-67442-3>
3. Marchant, MJ., **Guzmán, L.**, Corvalán, A.H., Kogan, M.J. (2019). Gold@Silica Nanoparticles Functionalized with Oligonucleotides: A Prominent Tool for the Detection of the Methylated Reprimo Gene in Gastric Cancer by Dynamic Light Scattering. *Nanomaterials* 2019, 9, 1333
4. Molinari, A., Oliva, A., Arismendi-Macuer, M., **Guzmán, L.**, Acevedo, W., Aguayo, D., Feliciano, A. S. (2019). Antiproliferative benzoindazolequinones as potential cyclooxygenase- inhibitors. *Molecules*, 24(12), [2261]. <https://doi.org/10.3390/molecules24122261>.
5. **Guzmán L**, Balada C, Flores G, Álvarez R, Knox M, Vinet R, Mart.nez JL. (2018) t-Resveratrol Protects against Acute High Glucose Damage in Endothelial Cells. *Plant Foods for Human Nutrition*. 73: 235-240. 1573-9104.

6. WO 2016/205971 AI. PONTIFICIA UNIVERSIDAD CATOLICA DE CHILE,
7. PONTIFICIA UNIVERSIDAD CATOLICA DE VALPARAISO Y UNIVERSIDAD DE CHILE. CHILE. MJ. Marchant, M Kogan, A Corvalán, **L Guzmán**. A. Gerrero (2016) - Método ultrasensible de detección de biomarcador de cáncer gástrico reprimido.
8. Vinet R., Rocío A, Knox M, **Guzmán L**, and Martínez J. (2016). Vasodilatory properties of *Solanum crispum* Ruiz & Pav. a South American native plant. *Bol Latinoam Caribe Plant Med Aromat*; 15:94-98.
9. Molinari A, Oliva A, Arismendi M, **Guzmán L**, Knox M, Vinet R, San Feliciano A. (2015). New H-Benzo[f]indazole-4,9-diones Conjugated with C-Protected Amino Acids and Other Derivatives: Synthesis and In Vitro Antiproliferative Evaluation. *ID Molecules*; 2015 Dec 8;20(12):21924-38.
10. Vinet R & **Guzmán L**. (2015). The Therapeutic Potential of Products Based on Polyphenols from Wine Grapes in Cardiovascular Diseases. *Therapeutic Medicinal Plants: From lab to the market*. CRC Press ISBN-13: 978-1482254037.
11. Saavedra K, Valbuena J, Olivares W, Marchant MJ, Rodríguez A, Torres-Estay V, Carrasco-Avino G, **Guzmán L**, Aguayo F, Roa JC8, Corvalán AH (2015). Loss of expression of Reprimo, a p53-induced cell cycle arrest gene, correlates with invasive stage of tumor progression and p73 expression in gastric cancer. *PLoS ONE* 10: e0125834. doi:10.137
12. Raúl Vinet, Rocío Álvarez, Marcela Knox & **Leda Guzmán**. (2015). BIOACTIVIDAD Y POTENCIAL TERAPÉUTICO DE RESVERATROL Y DERIVADOS SOBRE EL SISTEMA CARDIOVASCULAR. *Rev. Farmacol. Chile*: 8 (3) 52-61.
13. Alejandro H. Corvalan, Wilda Olivares, Carolina Bernal, María J. Maturana, **Leda Guzmán**. (2015), Su1986 Epigenetic and Genetic Inactivation of the E-Cadherin Gene in Sporadic Diffuse-Type Gastric Carcinoma. *Gastroenterology (AGA Abstracts)*. 148, Issue 4, Supplement Page S-568.
14. Roldán N, Fry J, Cerda P, Marchant MJ, Alarcon A, **Guzmán L**, Aravena E, Barrientos C, Calvo A, Corvalán A. (2015). Loss of Expression by Aberrant Hypermethylation of Reprimo in the Multistep Cascade of Gastric Cancer. *Gastroenterology (AGA Abstracts)*. 148(4): S-360.
15. Vinet R, Araos P, Gentina JC, Knox M, **Guzmán L**. (2014) p-Coumaric acid reduces high glucose-mediated impairment of endothelium-dependent relaxation in rat aorta. *Bol Latinoam Caribe Plant Med Aromat*. 13: 232-237.
16. Vinet R, Cortés M, Álvarez R, **Guzmán, L**, Flores, E (2012). *Centaurium cachanlahuen* (Mol.) Robinson a Chilean native plant with a vasodilatory effect. *Boletín Latinoamericano y del Caribe de Plantas Medicinales*. 11: 61 - 65.
17. **Guzmán L**., Depix MS., Salinas AM., Roldán R., Aguayo F., Silva A., & Vinet R. (2012). Aberrant methylation of tumor suppressor genes in DNA of sputum samples: A promising tool for lung diseases diagnosis. *Journal. Diagnostic Pathology*. 20; 7: 2- 9.
18. **Guzmán LM**., Castillo D & Aguilera S. 2010. Polymerase chain reaction (PCR) detection of B cell clonality in Sjogren's syndrome patients: a diagnostic tool of clonal expansion. *Clin Exp Immunol*. 1; 161:57-64.
19. Trefault N, **Guzmán L**, Pérez H, Godoy M, González B. 2009. Involvement of several transcriptional regulators in the differential expression of *tfd* genes in *Cupriavidus necator* JMP134. *Int Microbiol* 12:97-106.
20. **Guzmán L M**, Koriyama C, Akiba S, Eizuru Y, Castillo D, Corvalán A, Aguayo FR. (2007). High frequency of p16 promoter methylation in non-small cell lung carcinomas from Chile. *Biol Res*; 40:365-72.

21. Eduardo Retamales, Luis Rodríguez, **Leda Guzmán**, Francisco Aguayo, Mariana Palma, Claudia Backhouse, Jorge Argandoña, Erick Riquelme, Alejandro Corvalán (2007). Analytical Detection of Immunoglobulin Heavy Chain Gene Rearrangements in Gastric Lymphoid Infiltrates by Peak Area Analysis of the Melting Curve in the LightCycler System. *Journal of Molecular Diagnostics J Mol Diagn.* 9:351-76.