



CLAUDIA BALDERAS

Metabolomics Research Scientist // Junior Data Scientist

+34 640903484

phd.claudia@gmail.com

Madrid, Spain

[linkedin.com/in/phdclaudiabalderas](https://www.linkedin.com/in/phdclaudiabalderas)

Research papers:

Web Science Researcher ID AAD-3382-2021

ABOUT ME

I have a PhD specializing in metabolomics and 10+ years of hands-on experience in research and the laboratory. I have knowledge in experimental design, multivariate data analysis and biostatistics methodologies applied to large metabolomics datasets.

I'm pursuing a Master's degree in Bioinformatics, which is helping me gain a comprehensive understanding of data analysis in interdisciplinary fields such as genomics, transcriptomics, and proteomics.

With my solid research background in metabolomics and the skills I've learned during my completion of the Data Science Bootcamp, I'm seeking an opportunity to work in the private sector. My goal is to contribute to related projects while further developing my skill set.

PERSONAL SKILLS

- Critical thinking
- Empathy
- Initiative & leadership
- Adaptability
- Curiosity
- Proactivity & Problem-Solving

WORK EXPERIENCE

Responsible of the metabolomic service at Unit of Analytical, Instrumental, and Microbiological Techniques Service (USTA / ICTAN-CSIC)

2022-Currently || Madrid, Spain

- Provide support to the research groups at ICTAN in the implementation of analytical methods in the field of Metabolomics, based on: Sample preparation, sample analysis using HPLC/QTOF-MS and HPLC/QQQ-MS, Data Acquisition, Data Pre & Processing, Statistical Analysis, and spectral database management for compound identification.
- Software & Chemometrics Tools: MassHunter Qualitative/Profiler/Profiler (Agilent Technologies), Metaboanalyst, Unscrambler X.
- During 2023, I was in charge of managing the HPLC-MS service
- Laboratory work, project management, scientific review, consultant, training and education.

Researcher at Institute of Food Science, Technology and Nutrition (ICTAN-CSIC)

2017-2020 || Madrid, Spain

- Optimization and application of analytical methods in the field of metabolomics for the identification of dietary biomarkers in nutrition studies by HPLC/QTOF-MS and GC-MS.
- Statistical and multivariate analysis of metabolomic datasets.
- Laboratory work, scientific review, project management.

Postdoctoral Researcher at Lund University

2015-2017 || Lund, Sweden

- Development of metabolomics projects focuses on changes in plasma metabolite levels in response to different dietary interventions.
- Establishment of a lipidomics method based in UHPLC/QTOF-MS
- Statistical Tools & Software: SIMCA P+, MzMine, SPSS, MassLynx, MassHunter Qualitative/Profiler analysis.
- Development and application of target and non-target lipidomic methods.

Postdoctoral Researcher at Federal University Santa Catarina

2014-2015 || Florianopolis, Brazil

- Providing expertise in areas of metabolomics and data analysis, for master's and PhD students in Food Science and Technology.

EDUCATION

M.Sc in Bioinformatics

April 2023 - Currently

Universitat Internacional Valenciana (VIU)

Bootcamp Data Science (480h)

April 2022 - August 2022

The Bridge | Digital Talent Accelerator

Ph. D. Perinatal Biology and Pathology program with a specialization in Metabolomics

January 2009 - July 2014

San Pablo CEU University - Center of Metabolomics and Bioanalysis (CEMBIO)

Diploma of Advanced Studies (DEA) in Statistics and Operation Research

San Pablo CEU University

B. Sc. Pharmaceutical Biological Chemistry (QFB)

National Autonomous University of Mexico (UNAM)

MY SKILLS & EXPERTISE

Metabolomics



MVA(PCA, PLSDA, OPLS)



Mass Spectrometry



(U)HPLC-MS/MS



Data Analysis



Data Visualization



Machine Learning



Python / R



SQL



Deep Learning



SUMMARY OF PUBLICATIONS

- **Claudia Balderas**, Ocariz Maider Greño, Rogova Oksana, Al-Majdoub Mahmoud, Björck Inger, Tovar Juscelino, Spégel Peter. 2023. A randomized trial involving a multifunctional diet reveals systematic lipid remodeling and improvements in cardiometabolic risk factors in middle aged to aged adults. *Frontiers in Nutrition*. 10:1236153.
- **C. Balderas**, C. Sánchez-Moreno and B. De Ancos. 2023. Bile Acids and Short-Chain Fatty Acids Are Modulated after Onion and Apple Consumption in Obese Zucker Rats. *Nutrients*. Jul 5;15(13):3035.
- **Balderas C**, Angulo J, Sevilleja-Ortiz A, Peiró C, Vallejo S, Dongil P, Ancos B, Sánchez-Moreno C. Onion and Apple Functional Ingredients Intake Improves Antioxidant and Inflammatory Status and Vascular Injury in Obese Zucker Rats. 2022. *Antioxidants (Basel)*. Sep 29;11(10):1953.
- Fernández-Jalao, I., **C. Balderas**, C. Sánchez-Moreno and B. De Ancos. 2020. Impact of an in vitro dynamic gastrointestinal digestion on phenolic compounds and antioxidant capacity of apple treated by high-pressure processing. *Innovative Food Science & Emerging Technologies*. 66.
- Katharina Herzog, Johan Berggren, Mahmoud Al Majdoub, **Claudia Balderas Arroyo**, Andreas Lindqvist, Jan Hedenbro, Leif Groop, Nils Wierup, Peter Spégel. Metabolic Effects of Gastric Bypass Surgery - is it all about Calories?. *Diabetes*. 2020
- Oliveira Sarah, Gonzaga Luciano, Faria Gustavo, Barbosa Roberta, **Balderas Claudia**, Biluca Fabíola, Schulz Mayara, Costa Ana, Fett Roseane. Brazilian sardinella (*Sardinella brasiliensis*) conservation by immersion in seawater added sea salt and refrigerated on board. *Aquac Res*. 2019; 50:3429–3434
- Mette Schmedes, **Claudia Balderas**, Eli Kristin Aadland, et al. The Effect of Lean-Seafood and Non-Seafood Diets on Fasting and Postprandial Serum Metabolites and Lipid Species: Results from a Randomized Crossover Intervention Study in Healthy Adults. *Nutrients*. 2018 May; 10(5): 598.
- Andersson LE, Shcherbina L, Al-Majdoub M, Vishnu N, **Arroyo CB**, Aste Carrara J, Wollheim CB, Fex M, Mulder H, Wierup N, Spégel P. Glutamine-Elicited Secretion of Glucagon-Like Peptide 1 Is Governed by an Activated Glutamate Dehydrogenase. *Diabetes*. 2018 Mar;67(3):372-384.
- Mônia Stremel Azevedo, Siluana Katia Tischer Seraglio, Gabriela Rocha, **Claudia Berenice Balderas**, Marcel Piovezan, et al. Free amino acid determination by GC-MS combined with a chemometric approach for geographical classification of bracatinga honeydew honey (*Mimosa scabrella* Benth), *Food Control*. 2017 (78):383-392.
- **Balderas C**, Rupérez F. J., Ibañez E et al. Plasma and urine metabolic fingerprinting of type 1 diabetic children. *Electrophoresis*. 2013;34(19):2882-90.
- Lorenzo MP, Navarrete A, **Balderas C** et al. Optimization and validation of a CE-LIF method for amino acid determination in biological samples. *J Pharm Biomed Anal*. 2012;73:116-124.
- **Balderas C**, Villaseñor A, García A et al. Metabolomic approach to the nutraceutical effect of rosemary extract plus omega-3 PUFAs in diabetic children with capillary electrophoresis. *J Pharm Biomed Anal*. 2010;53(5):1298-304.

COURSES AND SEMINARS

Accomplishments

- July 2014 - March 2015: Fellowship Young Talent Attraction – BJT, Program Science Without Borders Brazil.
- January 2009 - January 2013: Fellowship EADS-CASA

Language skills

- Spanish: Native
- English: Fluent in reading, writing and verbal skills

- Técnicas Avanzadas de Machine Learning y su aplicación (con R) en Investigación Científica - Sociedad de Amigos del Museo Nacional de Ciencias Naturales
- Big Data (220h)-- The Valley Digital Business School, RED.es y Fondo Social Europeo (FSE)
- Quim17P0 - Good Manufacturing practices (avanzado). FFE Madrid
- Estadística aplicada + avanzada. Diseño de experimentos y análisis multivariante. CSIC Madrid
- Metabolómica en ciencias de los alimentos y la nutrición. Fun-C- Food
- Multivariate Data Analysis for Omics- Sartorius Stedim Data Analytics AB
- Course on Mass Spectrometry – USP CEU
- Applications in clinical analysis - Agilent Technologies - USP CEU
- Seminar on integrated Biology - Agilent Technologies -USP CEU
- Metabolomics - Agilent Technologies - USP CEU
- Master Class of Metabolomics- Agilent Technologies - USP CEU
- Operación del Sw. de Deconvolución aplicado a GC/MS - Agilent Technologies - USP CEU
- Capillary electrophoresis-mass spectrometry: design and applications Seville, Spain.
- LC Tips and Tricks - Agilent Technologies - USP CEU