As we approach Christmas, it is with pride that we reflect on the achievements of our research group over the past six months. We have welcomed a talented cohort of new researchers who we do hope will begin making significant contributions to our ongoing projects. Furthermore, we are excited to share that some of our R3 have embarked on enriching internships in relevant laboratories, where they brilliantly represent our group. Please do not forget our commitment to pushing the boundaries of knowledge with every new project. We also wish our collaborators a Merry Christmas and sincere thanks for your invaluable contributions.

Let's celebrate Christmas and look forward to the many successes that 2024 will bring!!   *Coral*

Spotlight

✓ Antonia García.   Proyecto Futura: "Formar mujeres líderes en ciencia" (November 22nd, 2023)

Events, Activities & Seminars

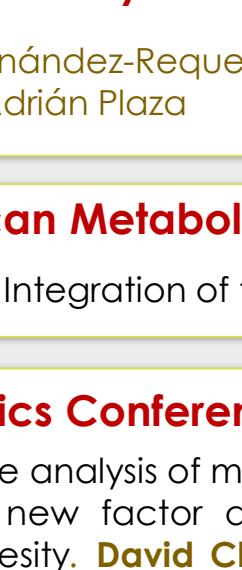|		
September 4-5th, 2023	EpiLipidNET Model Organism Hackathon Paula Cuevas Delgado.	HELMHOLTZ MUNICH
October 9-11th, 2023	1st HUMAN 'Harmonising and Unifying Blood Metabolomic Analysis Networks' Meeting, Actions MSCA-Doctoral Networks (MSCA-ND) Sara Londoño, Ana Gradillas, Antonia García.	
November 21st, 2023	Journée Club CE Afsep /Agilent Techniques d'Electrophorèse Capillaire pour la Biopharma • Métabolomique et CE MS, un voyage de noces ou une dispute de couple? Víctor González Ruiz.	cost
December 4th, 2023	CEMBIO seminars: • Previous professional career in analytical chemistry field before the PhD. Luz Alonso Dasques.	CEU Centro de Excelencia en Metabolómica y Bioanálisis
December 4th-8th, 2023	Collegium Medicum in Bydgoszcz - Poland • Broadening the coverage of metabolites in faeces through advanced analytical technologies (FaecMet). Érica A. Souza Silva.	NICOLAUS COPERNICUS UNIVERSITY IN TORUŃ
December 6th-7th, 2023	Semana de la Ciencia 2023 • Taller "Conviértete en investigador criminal: resolviendo un crimen con la química analítica". Paula Cuevas, Carolina González, Rocío Colás, Víctor González, Miguel Fernández, Sara Londoño, Antonia García, Coral Barbas, Mª Ángeles López, Ana Gradillas, Mª Paz Lorenzo, Érica Souza.	
CEMBIO Upcoming Seminars	Previous professional career – 15th January 2024 Constanza Fernández Hernández. Exploiting SPME's potential – 31st January 2024 Érica A. Souza Silva. GC-MS-based metabolomics – 12th February 2024 María Bajo Fernández.	Metabolomics analysis in anaphylaxis models– 11th March 2024 Andrea Macías Camero. GSMN Subnets extraction strategies– 8th April 2024 David Chamoso Sánchez. Results during the Research Mobility – 6th May 2024 Carmen García Montoya.

Projects

- **A Transdisciplinary Approach to the Identification of Personalized Biomarkers and Therapeutic Targets for Chronic Pulmonary Aspergillosis (Grant by La Caixa).**
  - Final results presentation at CEMBIO (November 27th, 2023).
  - Researchers invited: Agostinho Carvalho, Georgios Chamilos, Alexander Mosig, Frank L. van der Veerdonk.

- **Multiomic and structural approach to the study of hepatocyte response mechanisms to inflammatory damage (TomoXliver2-CM) (Grant by the Community of Madrid).**
  - Follow up meeting at CEMBIO (October 9th, 2023).
  - CEMBIO researchers involved: F. Javier Rupérez, Ángeles López-Gálvez, David Chamoso and Sara Moreno.

Interviews

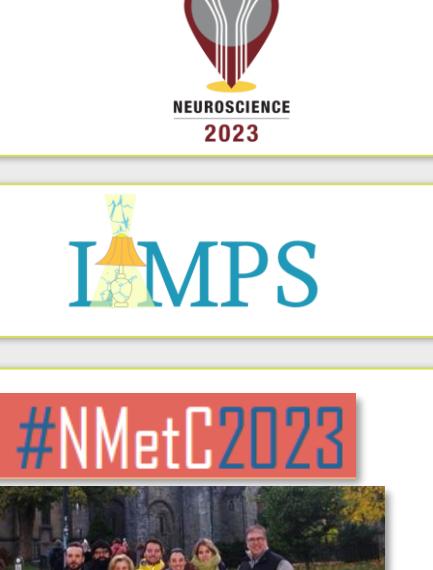Coral Barbas interview for "Información" Newspaper (September 13th, 2023)
"El éxito viene asociado a un largo camino de resultados parciales"
Click here to read the complete interview

Coral Barbas interview for "20 minutos" Newspaper (September 14th, 2023)
"La enseñanza que transforma de verdad se basa en mirar a los alumnos a los ojos para llegarles al corazón"
Click here to read the complete interview

Conferences

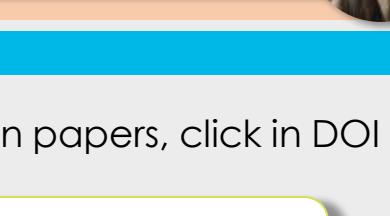**September 3-6th 2023 | Recent Developments in Pharmaceutical Analysis (RDPA) 2023, Novara, Italy**

➢ **Keynote presentation:** Multiplatform strategies for the study of microbial metabolites by MS-based metabolomics. **Antonia García**, Laura Mayo-Martínez, María Bajo-Fernández, Gabriel Montero, Érica A. Souza-Silva, Vanesa Alonso-Herranz, María Paz Lorenzo, Mª Fernanda Rey-Stolle, Coral Barbas, Francisco J. Rupérez.
➢ **Poster presentation:** Chiralomics for elucidating the role of the gut-brain axis in anorexia nervosa: a potential therapeutic target. Laura Mayo-Martínez, María Paz Lorenzo, Gabriel A. Martos-Moreno, Montserrat Graell, Coral Barbas, Jesús Argente, Francisco J. Rupérez, Antonia García.

October 11th, 2023 | Agilent Technologies: 2023 GC/Q-TOF Virtual User Meeting

➢ **Oral presentations:** Unveiling Generational Allergies: Metabolomic Insights into Gut Microbiota using GC-QTOF-MS. **Mª Fernanda Rey-Stolle**, Tomás Clive Barker-Tejeda, Elisa Zubeldia-Varela, Domingo Barber, Coral Barbas, Marina Pérez-Gordo; Alma Villaseñor

October 12-13th, 2023 | Munich Metabolomics Meeting 2023, Munich, Germany

➢ **Poster presentations: Antonia García**, Laura Mayo-Martínez, María Paz Lorenzo, Gabriel A. Martos-Moreno, Montserrat Graell, Coral Barbas, Jesús Argente, Francisco J. Rupérez

October 16-18th, 2023 | XXII Reunión de la Sociedad Española de Cromatografía y Técnicas Afines (SECyTA2023), Mallorca, Spain

➢ **Oral communication:** Application of a novel CE-MS metabolomics workflow in zebrafish reveals new effects of cortisol. **Maricruz Mamani-Huanca**, Marilen Admiraal-van Mever, Erin Faught, Ángeles López-González, Thomas Hankemeier, Coral Barbas, Marcel J.M. Schaaf, Rawi Ramautar.
➢ **Poster presentation:** HILIC-MS and CE-MS-based characterization of the metabolic profile of human plasma: a comparative study. **Ángeles López-González**, Ruben Carrasco, Marta Nugnes, Vanesa Alonso-Herranz, Maricruz Mamani-Huanca, Coral Barbas
➢ **Poster presentation:** Chiralomics: a validated methodology for unveiling the role of D- and L-amino acids in health and disease. **Mª Paz Lorenzo**, Laura Mayo-Martínez*, Gabriel A. Martos-Moreno, MontserratGraell, Coral Barbas, Jesús Argente, Francisco J. Rupérez, Antonia García

November 11-15th 2023 | Neuroscience 2023, Society for Neuroscience (SFN), Washington D.C, USA

➢ **Poster presentation:** Enrique Sánchez-Hita, Belén Fernández-Requena, Carolina Gonzalez-Riano, Antonia García, Mariano Ruiz-Gayo, Beatriz Merino, Victoria Cano, Adrián Plaza

November 24th, 2023 | 1 LAMPS (Latin American Metabolic Profiling Society) Podium. Online

➢ **Oral presentations:** Nextflow Workflow development. Integration of tools into GNPS2. Alberto Gil de la Fuente

October 18-20th, 2023 | 3rd Nordic Metabolomics Conference 2023, Trondheim, Norway

➢ **Keynote communication:** Analytical challenges in the analysis of microbiota related metabolites. Coral Barbas
➢ **Oral communication:** Metabotyping the obesity: new factor analysis-based strategies for classifying from multiplatform metabolomics data children with obesity. **David Chamoso-Sánchez**, Francisco Rabadán Pérez, Jesus Argente, Coral Barbas, Gabriel A. Martos-Moreno, Francisco J. Rupérez
➢ **Speed communication and poster presentation:** Untargeted metabolomics sample treatment strategies for renal tissue: a comparative study of solid phase microextraction (SPME) and homogenization-solid liquid extraction (Homo-SLE). **Paula Cuevas-Delgado**, Natalia Warmuzinska, Kamil Łuczykowski, Barbara Bojko, Coral Barbas.
➢ **Poster presentation:** In silico expansion of the phospholipidome compositional profile and polar metabolome characterization in *Haemophilus influenzae* Rd KW20 using multiplatform metabolomics and probabilistic modelling. **Miguel Fernández-García**, Manuel Ares-Arroyo,Emilia Wedel, Natalia Montero, Coral Barbas, Mª Fernanda Rey-Stolle, Bruno González-Zorn, Antonia García
➢ **Poster presentation:** Unraveling lipidomics complexity: overcoming false-positives after software assisted annotation for building a comprehensive inhouse human plasma MS library for accurate lipid annotation. Sara Martínez, Ana Gradillas, Coral Barbas
➢ **Poster presentation:** CE-MS-based strategy to assess the metabolic signature of testicular cancer in human seminal plasma. Maricruz Mamani-Huanca, Constanza Fernández-Hernández, Ángeles LópezGonzález, Nina Mørup, Francisco J. Rupérez, Antonia García, Serge Rudaz, Serge Nef, Kristian Almstrup, Coral Barbas, **Víctor González-Ruiz**

Spotlight

✓ **David Chamoso Sánchez**	Best Oral Communication Award at the 3rd Nordic Metabolomics Conference 2023	
✓ **David Chamoso Sánchez**	Travel grant at the 3rd Nordic Metabolomics Conference 2023	
✓ **Paula Cuevas Delgado**	Travel grant at the 3rd Nordic Metabolomics Conference 2023	

Publications

Available links on papers, click in DOI

Reciprocal regulation between the molecular clock and kidney injury
Carlos Rey-Serra, Jessica Tituaña, Terry Lin, J Ignacio Herrero, Verónica Miguel, **Coral Barbas**, *et al.*
Life Sci. Alliance, August, 2023.
DOI: 10.26508/lsa.202201886

Platelet-Derived Extracellular Vesicles as Lipid Carriers in Severe Allergic Inflammation
Alba Couto-Rodríguez, **Alma Villaseñor**, Carolina Pablo-Torres, **David Obeso, María Fernanda Rey-Stolle**, Héctor Peinado, José Luis Bueno, Mar Reaño-Martos, Alfredo Iglesias Cadarso, Cristina Gomez-Casado, **Coral Barbas**, *et al.*
Int. J. Mol. Sci. August, 2023
DOI: 10.3390/ijms241412714

Targeting the gut microbiota with dietary fibers: a novel approach to prevent the development cardiovascular complications linked to systemic lupus erythematosus in a preclinical study
Javier Moleón, Cristina González-Correa, Iñaki Robles-Vera, Sofía Miñano, Néstor de la Visitación, Antonio Manuel Barranco, Nazividad Martín-Morales, Francisca O'Valle, **Laura Mayo-Martínez, Antonia García**, *et al.*
Gut Microbes. August, 2023
DOI: 10.1080/19490976.2023.2247093

Inks in the Analytical Laboratory: A Forensics Activity for Undergraduate Students
Jorge Sáiz and Javier Rupérez-Pascualena.
J. Chem. Educ. August, 2023
DOI: 10.1021/acs.jchemed.3c00035

Differential abundance of lipids and metabolites related to SARS-CoV-2 infection and susceptibility
Oihane E Albóniga, Elena Moreno, Javier Martínez-Sanz, Pilar Vizcarra, Raquel Ron, Jorge Díaz-Alvarez, Marta Rosas, Matilde Sánchez-Conde, Juan Carlos Galán, **Santiago Angulo**, Santiago Moreno, **Coral Barbas**, *et al.*
Sci.Rep. September, 2023
DOI: 10.1038/s41598-023-40999-5

LILA: Lipid Long-based ATLAS built through a Comprehensive Workflow Designed for an Accurate Lipid Annotation
Belén Fernández Requena, Sajid Hadeem, Vineet P Reddy, Vanessa Naidoo, Joel N Glasgow, Adrie J C Steyn, **Coral Barbas** and **Carolina González-Riano**.
Commun. Biol. December, 2023
DOI: 10.1038/s42003-023-05680-7

Unravelling the in vitro and in vivo potential of selenium nanoparticles in Alzheimer's disease: A bioanalytical review
David Vicente-Zurdo, Noelia Rosales-Conrado and María Eugenia León-González.
Talanta. December, 2023
DOI: 10.1016/j.talanta.2023.125519

Metabolomic profile of neuroendocrine tumors (NETs) identifies methionine, porphyrin and tryptophan metabolism as key dysregulated pathways associated with patient survival
Salvia A, Lens-Pardo A, **López-López A**, Carretero-Puche C, Capdevila J, Benavent M, Jiménez-Fonseca P, Castellano D, Alonso T, Teule A, Ana Custodio, Salvatore Tafuto, Adelaida La Casta, Francesca Spada, **Lopez-Gonzalez A**, Gil-Calderon B, Espinosa-Olarte P, **Barbas C**, *et al.*
Eur. J. Endocrinol. November, 2023
DOI: 10.1093/ejendo/lvad160

Application of a capillary electrophoresis-mass spectrometry metabolomics workflow in zebrafish larvae reveals new effects of cortisol
Marilen van Mever, **Maricruz Mamani-Huanca**, Erin Faught, **Ángeles López-González**, Thomas Hankemeier, **Coral Barbas**, *et al.*
Electrophoresis. December, 2023
DOI: 10.1002/elps.202300186

Influenza A virus infection alters the resistance profile of gut microbiota to clinically relevant antibiotics
Marina Robas, Jesús Presa, Javier Aranz-Herrera, Soner Yildiz, **Sergio Rius-Rocabert**, Francisco Linares-Pinel, Agustín Probanza, Mirco Schmolke, Pedro A Jiménez and **Estanislao Nistal-Villan**.
Microb.Benef. December, 2023
DOI: 10.1128/spectrum.03635-22

GC-MS-based metabolomics of volatile organic compounds in exhaled breath. Applications in health and disease. A review
María Bajo-Fernández, Érica A. Souza-Silva, Coral Barbas, Mª Fernanda Rey-Stolle and **Antonia García**.
Front. Mol. Biosci. December, 2023
DOI: 10.3389/fmolb.2023.1295955

Identifying Subgroups of Childhood Obesity by Using Multiplatform Metabotyping
David Chamoso-Sánchez, Francisco Rabadán Pérez, Jesus Argente, **Coral Barbas**, Gabriel A. Martos-Moreno and **Francisco J. Rupérez**.
Front. Mol. Biosci. December, 2023
DOI: 10.3389/fmolb.2023.1301996

Neurons regulate the stratification of bioactive lipid mediators in the brain of acid sphingomyelinase deficient mice
Ameer Y. Taha, Ángel Gaudioso, **Maria Moran-Garrido, Sandra M. Camunas-Alberca**, Jasmine Bacallão-Hernández, **Jorge Sáiz**, María Dolores Ledesma and **Coral Barbas**.
Prog. Neuropsychopharmacol. Biol. Psychiatry. November, 2023
DOI: 10.1016/j.pnpbp.2023.110896

Welcome New Members

✓ **David Vicente Zurdo**
CEU Universidad San Pablo
Collaborator Professor in Instrumental Techniques, Bioanalytical Techniques, General Chemistry and Experimental Chemistry.

✓ **Cristina Muñoz San Martín**
Collaborator Professor in Instrumental Techniques, General Chemistry and Chemical Analysis.

✓ **Ana Beatriz Zabala de la Fuente**
Collaborator Professor in Bioanalytical Techniques.

✓ **Sara Moreno Talavera (PhD student)**
Under the supervision of Mª Ángeles López and Javier Rupérez. Supported by the Community of Madrid (FPI).

✓ **Henrique dos Santos Oliveira (PhD student)**
Under the supervision of Miguel Fernández and Antonia García. Supported by CEU University (FPI).

✓ **Luz Alonso Dasques (PhD student)**
Under the supervision of Víctor González and Coral Barbas. Supported by the Research Talent Attraction Program of the Community of Madrid.

✓ **Blanca Raposo Martínez (PhD student)**
Under the supervision of Alma Villaseñor and María Escribese. Supported by CEU University (FPI).

Members Corner

✓ **Víctor González Ruiz.**
Certificate as R3 – Established Researcher.

✓ **Alma Villaseñor Solís.**
Grant from the Community of Madrid for a Research Assistant.

Award for Best Young Teacher:
✓ **Carolina González Riaño.**

Congratulations

Celebrating:
✓ **David Chamoso.** 3 years at CEU.
✓ **María Morán.** 3 years at CEU.
✓ **Laura Mayo.** 3 years at CEU.
✓ **Tea Horvat.** 3 years at CEU.

Farewell (not goodbye)
We would like to extend a heartfelt farewell to our colleague **Maricruz Mamani-Huanca**. We wish you the very best in your upcoming journey, and you know that our door is always open for you!!

Training Students

✓ Bachelor's thesis: **Guillermo Encinas Sabater**, under de supervision of Sandra Camuñas and Ana Gradillas.

Research Mobilities – Incoming

✓ **Carmen García Montoya.**
• PhD student in Sols-Morreale Biomedics Investigation Institute (CSIC).

Research Mobilities – Outgoing

✓ **David Chamoso Sánchez.**
• Research Centre in Food Toxicology (Toxalim), Université de Toulouse, INRAE, with Dr. Fabien Jourdan.

✓ **Maria Morán Garrido.**
• Food Science and Technology, University of California Davis, with Dr. Ameer Y. Taha.

✓ **Laura Mayo Martínez.**
• Clemente Lab, Icahn School of Medicine Mount Sinai, with Dr. José Carlos Clemente Litran.

✓ **Alberto Gil de la Fuente.**
• University of California Riverside, with Dr. Mingxun Wang.

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A Very Merry CHRISTMAS and Happy New Year!   WE'RE HIRING