



Dear CEMBIO members,
As another productive and exciting semester concludes, I'm truly impressed by our achievements. Yet, the challenges ahead are equally inspiring. Experienced PhD students will explore opportunities abroad, and new fellows will join us. Thrilled about the upcoming EU projects — a doctoral network, a Twinning project, and the Malignant Hyperthermia project — I extend my heartfelt gratitude for your invaluable contributions to CEMBIO.
As the holidays approach, take time to relax and recharge. Return with renewed energy to seize exciting opportunities.
Happy holidays!!

Coral



Spotlight

CEMBIO scientists are leading female researchers in Spain:

- ✓ Coral Barbas. 97/8000
- ✓ Antonia Garcia. 1198/8000

Events, Activities & Seminars

March 31st 2023 | **CEMBIO seminars:**
• Comprehensive workflow for an accurate lipid annotation using MS/MS data.
Belén Fernández Requena.

May 2023 | **Lipid profiling for the exploration of the impact of body mass index on the development of Type 2 Diabetes Mellitus.** Research grant: E-COST-GRANT-CA19105, Medical University Of Białystok.
Vanessa Alonso.

July 3-7th, 2023 | **AEMPS seminar: "Elucidación estructural con espectrometría de masas"**
Carolina Gonzalez-Riano, Ana Gradillas, Miguel Fernández García, Sandra M. Camunas-Alberca, María Moran-Garrido and Alma Villaseñor.

July 12-14th 2023 | **LC-MS for metabolomics Workshop**
Course given on behalf of Agilent to a research group from Universidad de Castilla-La Mancha.
Javier Rupérez, Alma Villaseñor, Carolina Gonzalez-Riano, Belén Fernández Requena and Vanesa Alonso.

New Projects

European Joint Programme on Rare Diseases (EJP RD) - Joint Transnational Call (JTC) 2022.
• SPMH: Metabolic test in vivo for malignant hyperthermia. PI: Coral Barbas
Researcher: Rocío Colás Ruiz.

Interviews

Vanessa Alonso interview for USP CEU Blog
¿Conoces el CEMBIO? [Click here to read the interview!](#)

Conferences

January 26-29th 2023 | Immunology Winter School EAACI 2023, Davos, Switzerland

- 3 poster presentations
Tomás Clive Barker-Tejeda, Nuria Contreras Gómez, Andrea Macías Camero.

May 29-31st, 2023 | II Jornadas Jóvenes Investigadores de la SEEM (II JJI-SEEM), Madrid, Spain

- Oral communication:** Estrategias metabolómicas avanzadas para mejorar la clasificación de los pacientes obesos: utilización de análisis factorial en datos metabolómicos multiplataforma de pacientes con obesidad infantil. **David Chamoso-Sánchez, Gabriel A Martos-Moreno, Francisco Rabadán Pérez, Jesús Argente, Coral Barbas, Francisco J Rupérez.**
- Oral communication:** LC-IMS-MS para la separación de glucuronidos de urolitina. **María Morán-Garrido, Jorge Sáiz, Rocío García-Villalba, (...), Coral Barbas.**
- Oral communication:** Aplicación de la espectrometría de movilidad iónica acoplada a espectrometría de masas en la caracterización de mezclas complejas de glucosaminoglicanos oxidadas derivadas del ácido araquidónico. **Sandra M. Camunas-Alberca, Ana Gradillas, Coral Barbas.**
- Oral communication:** Study of derivatization conditions for the determination of SCFAs by HS-SPME-GC/MS: strengths and limitations. **María Bajo-Fernández, Érica A. Souza-Silva, Laura Mayo, (...), Coral Barbas.**
- Oral communication:** Abordando el desafío de la lipidómica no dirigida en orina: estudio comparativo de métodos de extracción empleando UHPLC-ESI-QTOF-MS. **Belén Fernández-Requena, Carolina Gonzalez-Riano, Coral Barbas.**
- 2 Poster presentations: **Laura Mayo Martínez, Sara Martínez López.**

June 09-11th, 2023 | European Academy of Allergy and Clinical Immunology (EAACI) Hybrid Congress, Hamburg, Germany

- Oral communication:** IL10 serum levels at second treatment year: a new potential biomarker for disease modification. **María Isabel Delgado-Dolset, Bazire R, Fernández P, Vazquez-Cortes S, Ramos T, Rico MDP, Escribese MM, Fernández-Rivas M, Blanco C, Barber D.**
- Oral communication:** Unraveling new biomarkers for asthma treatment monitoring with biologics using metabolomics. **Nuria Contreras Gómez, Obeso D, Delgado-Dolset MI, Hernández Suárez HR, González Cuervo H, Cisneros C, Múgica V, Carrillo T, Blanco C.4, Barbas C, Barber D, Villaseñor A, Escribese MM.**
- 2 flash communications: **Tomás Clive Barker-Tejeda and Alma Villaseñor.**
- 1 poster presentation: **Andrea Macías Camero.**

June 15-16th 2023 | MOIR (Mechanism of Insulin Resistance), Madrid, Spain

- Oral communication:** The Gut-brain axis in anorexia nervosa: short-chain fatty acids and D-amino acids. **Laura Mayo-Martínez, María Paz Lorenzo, Gabriel A. Martos-Moreno, Montserrat Graell, Coral Barbas, Jesús Argente, Francisco J. Rupérez, Antonia García.**

June 18-22th, 2023 | 19th Annual Conference of the Metabolomics Society, Niagara Falls, Canada

- Oral communication:** A multi-omics approach reveals the uniqueness of the gut microbiota and fecal metabolome of young infants compared to their maternal lineage. **Tomás Clive Barker-Tejeda, Elisa Zubeldia-Varela, Andrea Macías-Camero, Leticia Mera-Berriatua, María Fernanda Rey-Stolle, Domingo Barber, María Dolores Paloma Ibáñez-Sandín, Coral Barbas, Marina Perez-Gordo, Alma Villaseñor, et al.**
- Oral communication:** LC-IMS-MS vs LC-QTOF for comprehensive untargeted brain lipidomics. **María Moran-Garrido, Jorge Sáiz, Ameer Taha, Coral Barbas.**
- Oral communication:** Insights into the comprehensive analysis of oxidized arachidonoyl-containing phosphatidylcholines using a structural library from Ion Mobility-Mass Spectrometry. **Sandra M. Camunas-Alberca, Ana Gradillas, Coral Barbas.**
- Oral communication:** LiLA: A Lipid Lung Atlas using a reliable lipid annotation workflow. **Belén Fernández Requena, Carolina Gonzalez-Riano, Sajis Nadeem, Vineel P Reddy, Vanessa Naidoo, Joel N. Glasgow, Adrie J C Steyn, Coral Barbas.**
- 2 Poster presentations: **Antonia García, Ana Gradillas.**

July 02-06th 2023 | 33th International Symposium on Pharmaceutical and Biomedical Analysis (PBA2023), Ankara, Turkey

- Oral communication:** Chloroformate derivatization combined with HS-SPME-GC/MS for determination of SCFAs in mice liver: a proof of concept. **Érica A. Souza-Silva, Laura Mayo-Martínez, María Bajo-Fernández, Mª Fernanda Rey-Stolle, Vanesa Alonso-Herranz, Antonia García, Coral Barbas.**

July 18-21st 2023 | 25th International Symposium on Advances in Extraction Technologies (ExTech 2023), Tenerife, Spain

- Oral communication:** Study of derivatization conditions for determination of SCFAs by HS-SPME-GC/MS: Strengths and limitations. **Érica A. Souza-Silva, María Bajo-Fernández, Laura Mayo-Martínez, Mª Fernanda Rey-Stolle, Vanesa Alonso-Herranz, Antonia García, Coral Barbas.**

Spotlight

- ✓ **Nuria Contreras Gómez** First prize for an outstanding oral presentation at EAACI 2023
- ✓ **Andrea Macías Camero** First prize for an outstanding flash presentation at EAACI 2023
- ✓ **Tomás Clive Barker-Tejeda** First prize for an outstanding poster presentation at EAACI 2023
- ✓ **Tomás Clive Barker-Tejeda** Student Travel Award for an outstanding oral presentation at Metabolomics 2023

Publications

Relationship between 4-Hydroxynonenal (4-HNE) as Systemic Biomarker of Lipid Peroxidation and Metabolic Profiling of Patients with Prostate Cancer
Matea Nikolac Perkovic, Morana Jagancic, Lidija Milkovic, Tea Horvat. David Rojo, et al.
Biomolecules, January, 2023 DOI: [10.3390/biom13010145](#)

Oxidative phosphorylation selectively orchestrates tissue macrophage homeostasis
Stefanie K Wculek, Ignacio Heras-Murillo, Annalaura Mastrangelo, Diego Mañanes, Miguel Galán, Verónica Miguel, Andrea Curtabbi, Coral Barbas, et al.
Immunity, January, 2023 DOI: [10.1016/j.immuni.2023.01.011](#)

Some OPA once told me "LKB1 is going to rule me": the OPA1-LKB1 axis in immune response
Nuria Contreras, Andrea Macías-Camero, and María Isabel Delgado Dolset.
Allergy, February, 2023 DOI: [10.1111/all.15672](#)

Integrating the potential of ion mobility spectrometry-mass spectrometry in the separation and structural characterisation of lipid isomers
Sandra M. Camunas-Alberca, María Moran-Garrido, Jorge Sáiz, Alberto Gil-de-la-Fuente, Coral Barbas and Ana Gradillas.
Front. Mol. Biosci., March, 2023 DOI: [10.3389/fmolb.2023.1112521](#)

Deleminants of poor clinical outcome in patients with influenza pneumonia: a systematic review and meta-analysis
Javier Arranz-Herrero, Jesús Presa, Sergio Rius-Rocabert, et al.
Int. J. Infect. Dis., April, 2023 DOI: [10.1016/j.ijid.2023.04.003](#)

Dysfunction of programmed embryo senescence is linked to genetic developmental defects
Cristina de Lope, [...], Nuria Casa-Rodríguez, Nuria Contreras, et al.
Development, April, 2023 DOI: [10.1242/dev.200903](#)

Capillary electrophoresis mass spectrometry-based untargeted metabolomics to approach disease diagnosis
Maricruz Mamani-Huanca, Alma Villaseñor, Carolina Gonzalez-Riano, Ángeles López-López, Ángeles López-González and Coral Barbas.
TrAC, Trends Anal. Chem., May, 2023 DOI: [10.1016/j.trac.2023.117049](#)

Rhinovirus-induced epithelial RIG-I inflammasome suppresses antiviral immunity and promotes inflammation in asthma and COVID-19
Urszula Radzikowska, [...], Beate Rückert, Juan Rodríguez-Coira, et al.
Nat. Commun., April, 2023 DOI: [10.1038/s41467-023-37470-4](#)

Mapping early serum proteome signatures of liver regeneration in living donor liver transplant cases
Lorena Carmona-Rodríguez, [...], Iker Uriarte, Maricruz Mamani-Huanca, Angeles López-González, [...], Coral Barbas, et al.
BioFactors, May, 2023 DOI: [10.1002/biof.1954](#)

Low-polarity untargeted metabolomic profiling as a tool to gain insight into seminal fluid
Eulalia Olesli, Julien Boccard, [...], Victor González-Ruiz.
Metabolomics, June, 2023 DOI: [10.1007/s11306-023-02020-y](#)

A host-specific diaminobutyrate aminotransferase contributes to the symbiotic performance, homoserine metabolism, and competitiveness in the *Rhizobium leguminosarum/Pisum sativum* system
Marta Ballesteros-Gutiérrez, Marta Albareda, Coral Barbas, Ángeles López-González, et al.
Front. Microbiol., May, 2023 DOI: [10.3389/fmicb.2023.1182563](#)

Further Insights into the Gut Microbiota of Cow's Milk Allergic Infants: Analysis of Microbial Functionality and Its Correlation with Three Fecal Biomarkers
Elsa Zubeldia-Varela, Tomás Clive Barker-Tejeda, Leticia Mera-Berriatua, [...], Domingo Barber, María Pilar Francino, David Rojo, et al.
Int. J. Mol. Sci., May, 2023 DOI: [10.3390/ijms241119247](#)

HIGHLIGHTS Available links on papers, click in DOI!

HIGH IMPACT JOURNAL
Y-Linolenic acid in maternal milk drives cardiac metabolic maturation
Ana Paredes, [...], Ana Gradillas, Viviane Aparecida Rodrigues Sant'Anna, [...], Francisco Javier Rupérez, Coral Barbas, José Antonio Enriquez and Mercedes Ricote.
Nature, May, 2023 DOI: [10.1038/s41586-023-06068-7](#)

EDITORIAL ARTICLE
Editorial on the Research Topic: Advances and challenges in untargeted metabolomics
Renata Wawrzyński, Francis Javier Rupérez and Joanna Barbara Godziń.
Front. Mol. Biosci., February, 2023 DOI: [10.3389/fmolb.2023.1097443](#)

FRONT COVER
The role of oxylipins and their validation as biomarkers in the clinical context
Sandra M. Camunas-Alberca, María Moran-Garrido, Jorge Sáiz, Alma Villaseñor, Ameer Y. Taha and Coral Barbas.
TrAC, Trends Anal. Chem., April, 2023 DOI: [10.1016/j.trac.2023.117065](#)

Deficiency in the production of antibodies to lipids correlates with increased lipid metabolism in severe COVID-19 patients
Ignacio Piédrola, Sara Martínez, Ana Gradillas, Alma Villaseñor, Vanesa Alonso-Herranz, Isabel Sánchez-Verza, Esther Escuder, et al.
Front. Immunol., June, 2023 DOI: [10.3389/fimmu.2023.1188786](#)

Leishmania donovani Induces Multiple Dynamic Responses in the Metabolome Associated with Amastigote Differentiation and Maturation Inside the Human Macrophage
Miguel Fernández-García, Inês Mesquita, Carolina Ferreira, Marta Araújo, Bhaskar Saha, Ma Fernanda Rey-Stolle, Antonia García, Ricardo Silvestre and Coral Barbas.
J. Proteome Res., June, 2023 DOI: [10.1021/acs.jproteome.2c00845](#)

Impact of renal tubular Cpl1a overexpression on the kidney metabolome in the folic acid-induced fibrosis mouse model
Paula Cuevas-Delgado, Verónica Miguel, J. Rupérez, Santiago Lamas and Coral Barbas.
Front. Mol. Biosci., June, 2023 DOI: [10.3389/fmolb.2023.1161036](#)

Multiphase Metabolomics Characterization Reveals Novel Metabolites and Phospholipid Compositional Rules of *Haemophilus influenzae* Rd KW20
Miguel Fernández-García, Manuel Ares-Arroyo, Emilia Wedel, Natalia Montero, Coral Barbas, Mª Fernanda Rey-Stolle, Bruno González-Zorn and Antonia García.
Int. J. Mol. Sci., July, 2023 DOI: [10.3390/ijms241311150](#)

Growth hormone remodels the 3D-structure of the mitochondria of inflammatory macrophages and promotes metabolic reprogramming
Blanca Saler Palacios, Ricardo Villares, [...], Miguel Fernández-García, Cristina Risco, Coral Barbas, et al.
Front. Immunol., July, 2023 DOI: [10.3389/fimmu.2023.1200259](#)

Metabolic profiling of Alzheimer's disease: Untargeted metabolomics analysis of plasma samples
Tina Milos, David Rojo, Gordana Nedic Erjavec, [...], Oliver Kozumplik, Coral Barbas, et al.
Prog. Neuropsychopharmacol. Biol. Psychiatry, July, 2023 DOI: [10.1016/j.pnpb.2023.110830](#)

IF₁ ablation prevents ATP synthase oligomerization, enhances mitochondrial ATP turnover and promotes an adenosine-mediated pro-inflammatory phenotype
Sonia Domínguez-Zorita, [...], Cristina Núñez de Arenas, Jorge Sáiz, Coral Barbas, et al.
Cell Death Dis., July, 2023 DOI: [10.1038/s41419-023-05957-z](#)

Welcome New Members

- ✓ **Constanza Fernández Hernández** Under the supervision of Antonia García and Javier Rupérez. Supported by the CEU University (FPI).
- ✓ **Sara Londoño Osorio** Under the supervision of Ana Gradillas. Supported by Marie Skłodowska-Curie Actions Doctoral Network fellowship (MSCA-DN).
- ✓ **Merve Nenni** Assist. Prof. Ph.D. from Cukurova University, Adana, Turkey.
- ✓ **Victor González Ruiz** Research Talent Attraction Program of the Community of Madrid 2022 from Geneva, Switzerland.
- ✓ **Rocío Colás Ruiz** Post-doctoral researcher from University of Cádiz, Spain.
- ✓ **Erica Souza-Silva** Marie Skłodowska-Curie Postdoctoral Fellowship from São Paulo, Brazil.

Members Corner

Dissertation defense:

- ✓ **Paula Cuevas Delgado** March 10th 2023.

Promotion to:

- ✓ **María Fernanda Rey-Stolle**. Full professor.
- ✓ **Paula Cuevas Delgado**. Post-doctoral researcher.

Congratulations

Research Mobilities – Incoming

- ✓ **Marta Nugnes**. PhD student in Università di Bologna.
- ✓ **Nicolò Interino**. PhD student in Università di Bologna.
- ✓ **Orlando R. Seviliano**. PhD student in Universidade de São Paulo.
- ✓ **Gisele A. B. Canufu Ph.D.** Assist. Prof. Ph.D. from Universidade Federal da Bahia.

Training Students

- ✓ Master's thesis:
 - ✓ **Javier Forner Bonmatí**. Drug discovery master degree. Under the supervision of **Ana Gradillas and Antonia García.**
 - ✓ **Rubén Carrasco Hernández**. Drug discovery master degree. Under the supervision of **Ángeles López González.**
- ✓ Bachelor's thesis: **Andrea Araiza Saldaña** from Universidad Nacional Autónoma de México, and 4 Pharmacy Students from Universidad San Pablo CEU.
- ✓ 2 trainee laboratory technicians: Paula and Miriam.