

EpiLipidNET Newsletter January 2025

Greetings and Aims

Dear EpiLipidNET Community,

We would like to wish all of you a very happy and healthy 2025!

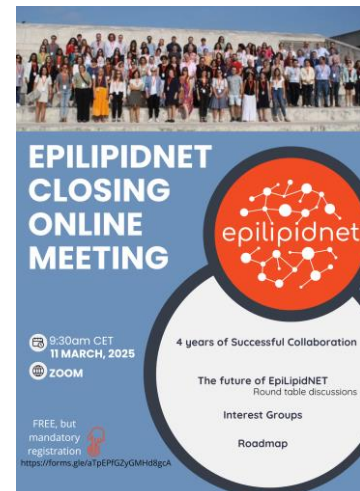
EpiLipidNET COST Action was officially completed in October 2024, and we would like to thank all of you for the great collaborations and networking. Indeed, while preparing the final report to the COST organization, we were absolutely amazed how much we achieved during the last 4 years together. EpiLipidNET community became something bigger than a COST Action and we will continue to interact and work together to uncover more mysteries in lipid biology and lipidomics!

With this in mind, we would like to draw your attention to the upcoming EpiLipidNET closing online meeting which will take place on March 11th 2025. During the meeting, we would like to highlight examples of great research and introduce upcoming Interest Groups activities.

Rosário and Maria

Rosário Domingues (Chair of the Action)

Maria Fedorova (Vice-Chair of the Action)



This Newsletter aims to present updates on the COST Action EpiLipidNET (CA 19105) as well as ideas and opportunities to further contribute to networking. In this edition we are bringing you news from the last year of the Action, together with the initiatives to keep our collaboration alive.

News from the 5th General Meeting and final EpiLipidNET Conference



The 5th Annual General Meeting of EpiLipidNET, the Pan-European Network in Lipidomics and EpiLipidomics, took place from May 13th to 15th, 2024, at the Technische Universität Dresden (TUD), Germany, organized by the Fedorova Lab. The event featured seven scientific sessions with oral presentations, two dedicated poster sessions, and social events to support networking and knowledge exchange. Participants from various lipid research fields, including basic biochemistry, cell biology, lipidomics technologies, and clinical translation, attended the meeting.

The conference opened with a wonderful and thought-provoking keynote lecture by Prof Kai Simons (Lipotype GmbH) entitled “The increasing value of lipids in health and disease”. It was followed by the Young Researcher and Innovators (YRI) session, a special collection of presentations highlighting emerging talents in the field. On the 2nd day WG Leaders presented “the EpiLipidNET journey over the last 4 years” to showcase the major achievements of the COST Action. In the afternoon there was a notable session, “Lipidomics in Industry Settings,” including panel discussions with representatives from local, regional, and international industries, focusing on the latest challenges and advancements in lipidomic technologies and research. The conference also featured renowned keynote speakers who shared groundbreaking insights and advancements in their respective fields, inspiring attendees with their expertise and vision. Moreover, the attendees engaged with community-created educational games, **Lipodrome**, **Know Your Fats** and **Burn Your Fat**, designed to enhance understanding of lipids in health and disease, during evening poster sessions. This experience was well-received and EpiLipidNET members were enthusiastic to use and help develop the games. A very important event on the last day was the awards session, recognizing the excellent posters and talks presented by the early career investigators: congratulations to you all. We also said a special, heart-felt thank you to Rosario Domingues and Maria Fedorova for their amazing effort in leading EpiLipidNET over the last 4 years. Some photos of the meeting are shown below.

Overall, the event provided a platform for researchers, clinicians, and enterprises to share knowledge and discuss new developments in (epi)lipidomics. The meeting underscored EpiLipidNET's commitment to foster collaboration and innovation; it was a pleasure to enjoy three full days of lipid-related research and networking in the beautiful city of Dresden!



**Top Left: YRI awardees at the closing ceremony. Top Right: Having fun with Lipodrome
Bottom: group photo of all attendees at the 5th EpiLipidNET Meeting.**

News from the Dissemination and Communication Team

An important success of EpiLipidNET was the organization of an “Exploitation Event” in Brussels on the 12th September 2024, hosted at the COST Association offices by Karima BenSalah. Karima worked closely with Sara Tortorella, Olga Vvedenskaya and of course our Chair and Vice-chair Rosario and Maria to organize the event. Its aim was to showcase the work of the COST Action and thereby stimulate discussion between scientists in the field of lipids and policy decision-makers, addressing vital topics that influence health, food and diets, innovation, and sustainability within the European Union and globally. The meeting was highly interactive and stimulated much discussion on topics such as lipids in nutrition and mental health, lipidomics for health challenges, and engaging society in lipid education through gamification. Following the Exploitation Event, the COST Office made a press release about EpiLipidNET, which you can find here: [Bridging lipids and society with EpiLipidNet \(cost.eu\)](https://www.cost.eu/news/bridging-lipids-and-society-with-epilipidnet) as well as in the [September COST newsletter](#).



🌀 Games News from the EpiLipidNET Working Group 5

As mentioned above, a large focus of the work in WG5 has been to develop the lipid games **Lipodrome** and **Know Your Fats**. Final versions of both were produced in time for the Dresden conference and used in a games and poster session. Dovilė Milonaitytė and Ondrej Kuda from the Institute of Physiology, CAS, in Prague gave a demonstration of their ingenious and complex board game **Burn Your Fat**, which drew a large crowd of interested players and onlookers. Burn Your Fat is now available at github https://github.com/IPHYS-Bioinformatics/Burn_your_fat and is the subject of an educational article <https://www.frontiersin.org/journals/education/articles/10.3389/feduc.2024.1485234/abstract>. The other 2 games are not yet freely available online, pending investigation of licencing, but are being used by the Fábrica Centro Ciência Viva de Aveiro for public outreach events. Professor Agnieszka Bartoszek-Pączkowska, from Politechnika Gdańska, is exploring the possibility of adopting **Lipodrome** as an educational tool for students at her institution.

🎲 Icebreaker Fun with Lipodrome in Toulouse! 🎲

In January 2025, our game **Lipodrome** was used as an icebreaker at the beginning of the MSCA Doctoral Network project, PROSTAMET, in Toulouse. It was an excellent way to kick things off, fostering connections, creativity, and team spirit from the very start!



We still need more help to translate the games to other languages; if you are willing to help, please contact Corinne Spickett at c.m.spickett@aston.ac.uk

🌀 Virtual Special Issue from the EpiLipidNET Action

The other major WG5 task ongoing over the last year has been organizing an **EpiLipidNET Virtual Special Issue** in collaboration with Elsevier. This involved 7 different journals: Journal of Lipid Research, Progress in Lipid Research, Redox Biology, Free Radical Biology and Medicine, Advances in Redox Research, BBA Biomembranes and Food Chemistry. Fourteen articles have been accepted to date and one is still under revision, so we hope the final number to be fifteen. You can find the EpiLipidNET Virtual Special Issue at this link <https://www.sciencedirect.com/special-issue/10CJCNZ9MHC>

🌀 News from Conferences and Workshops in 2024

EpiLipidNET members were very active in running and participating in several conferences in 2024. Here are details of them: many thanks to everyone who attended for making them great events!



Glycolipid and Sphingolipid Biology
Gordon Research Conference

The Role of Sphingo- and Glyco-Lipids in Physiology and Diseases, February 18 - 23, 2024. <https://www.grc.org/glycolipid-and-sphingolipid-biology-conference/2024/>

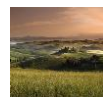


5–8 March 2024
Lipidomic Technologies
and Applications

iSLS 12, 12th International Singapore Lipid Symposium, March 5–8, 2024. <https://sling.sg/news-events/isls/>



The first-ever **Molecular Life Sciences Education and Training Conference** in Europe, March 20-23, 2024, was organized by FEBS. This three-day event held in Antalya, Türkiye, brought together senior and junior scientists from all over the world to share their expertise and learn from each other.



Lipidomics
Gordon Research Conference

Toward Functional Lipidomics: Structure Elucidation, Quantification, Data Integration and Clinical Translation held in Barga, Italy, May 5 - 10, 2024.

<https://www.grc.org/lipidomics-conference/2024/>



The **2024 SFRR-E annual meeting** held from June 5-7, 2024, at the Movenpick Hotel in Kurtköy, Istanbul. The meeting focused on the theme "From Molecules to Tissues: Redox Biology in Action". <https://www.redoxistanbul2024.com/>



* **GERLI 19TH LIPIDOMICS meeting 2024.** "Lipids: from Sea to fork" took place September 23 - 26, 2024, European Institute for Marine Studies (IUEM), Plouzané, France (<https://www.gerli.com/congress/?lang=en>)



The **International HNE-Club** held its meeting from October 10-12, 2024 in the historic city of Genoa, Italy, after a break of several years. It took place at the University of Genoa in the Old Harbour, and welcomed scientists, clinicians and industry professionals working in the field of oxidative stress and lipid peroxidation from around the world to share insights and explore new frontiers in the study of hydroxynonenal (HNE) and related reactive aldehydes. The aim of the meeting was to promote discussions on lipid oxidation: from laboratory to medicine, HNE: from discovery to the present, HNE and oxidised lipids in pathophysiology, and lipid oxidation and ferroptosis. Numerous EpiLipidNET members shared their research findings and actively participated in the meeting, including the Hermann Esterbauer Lecture given by Morana Jaganjac. The meeting was a great success: it provided a unique platform for the exchange of ideas, fostered international collaboration and contributed to a better understanding of HNE and its relevance to health and disease. Many thanks to Prof Giuseppe Poli, for excellent organization.



The **64th International Conference on the Bioscience of Lipids (ICBL)** was held from October 15 – 18, 2024, at Taipei, Taiwan. <https://www.icbl2024.tw/>

Upcoming Events and meetings for 2025

FEBS Special Meeting on Sphingolipid Biology: Breaking Boundaries / International Ceramide Conference, 25-30 May 2025 in Varna.

Please note that you can complete your registration now and [submit or modify your abstract](#) at a later stage.

- Abstract Submission/Modification: Open until March 31, 2025.
- Short Talk Consideration: please submit your abstract by February 28, 2025.
- Further details on the event, application process, and registration can be found [here](#).

The 22nd Society for Free Radical Research-International Biennial Meeting will be held from June 3-6, 2025 in Galway, Ireland, at the University of Galway campus and will also include a **Satellite meeting of the International HNE-Club** focused on all aspects of lipid oxidation.

<https://www.sfrgalway2025.com/home>

- Deadlines for travel Awards 17 January 2025
- Deadline for Abstract submissions 10 February 2025
- Early bird registration 20 March 2025.

iSLS 13, 13th International Singapore Lipid Symposium in collaboration with the association for Mass Spectrometry & Advances in the Clinical Lab (MASCL) will be held in Singapore, February 24 - 28, 2025. <https://sling.sg/news-events/isls/>

Molecular and Cellular Biology of Lipids GRC “Re-Envisioning the Fluid Mosaic Model of Membrane-Lipid Interactions with Next-Generation Technologies” will be held in Waterville Valley (USA), July 27 - August 1, 2025. <https://www.grc.org/molecular-and-cellular-biology-of-lipids-conference/2025/>

GERLI 20TH LIPIDOMICS meeting 2025 “Lipids in Cell Structures & Metabolism” will be held in Strasbourg, France, November 3-5, 2025. <https://www.gerli.com/congres/welcome-to-gerli-20th-lipidomics-meeting/>

20th EuroFed Lipid Congress “From Insight to Impact: Advancing Sustainability in Fats, Oils, and Lipids” will be held in Leipzig, Germany, from the 12th to the 15th of October, 2025 <https://veranstaltungen.gdch.de/microsite/index.cfm?l=11649&modus=>

Initiatives to keep collaborations among EpiLipidNET members

We have established 3 Interest Groups to facilitate ongoing interactions and collaborations in important EpiLipidNET areas of research. Please see the links below for detailed information on the goals and focuses of these groups. Please do get in touch with the relevant contacts if you are interested in joining any of them!

Interest Group on Endothelial Plasma Membrane Lipidome (EndotheliOme)

<https://www.epilipid.net/interest-group-on-endothelial-plasma-membrane-lipidome-endotheliome/>

Interest Group in Food Lipidomics

<https://www.epilipid.net/interest-group-food-lipidomics/>

Interest Group in Algae and Plant and Lipidomics

<https://www.epilipid.net/interest-group-algae-plant-lipidomics/>

EpiLipidNET STSM and ITC Grantees news

The EpiLipidNET COST Action (CA19105) provided grants to support **Short Term Scientific Missions (STSM)** to enable researchers to stay at foreign research institutions and to facilitate networking and knowledge exchange as well as the establishment of new collaborations in the field of lipid and epilipid research. Additionally, **Inclusiveness Target Countries Conference Grants (ITC Conference Grants)** are aimed at supporting Young Researchers and Innovators (YRI) < 40 years old from Inclusiveness Target Countries (ITC) to attend international scientific meetings related to the topic of the Action.

During 2024, 24 STSMs with a total budget of €49.758 were granted. The duration of the approved STSMs varied between 5 and 61 days and the approved budgets to support travel, accommodation and meals ranged from € 1350 to € 4000 (STSM Coordinator **Julia Kuligowski** & Grant Awarding Coordinator Joanna Godzien).

During 2024, 15 ITC Conference Grantees, from institutions from Portugal, Czechia, Slovakia, and Slovenia, attended diverse conferences, in Europe, Japan, and Australia, and presented poster or oral communications. The total budget granted was €18,709. The duration of the trips for the conferences varied between 3 and 7 days and the approved budgets to support travel, accommodation and meals ranged from €375 to €2000 (ITC CG Coordinator **Snjezana Petrovic** & Grant Awarding Coordinator **Joanna Godzien**).

For more information on STSM and ITC Conference Grants, including STSM non-scientific reports, please visit our website on the following links: [Meet the STSM awardees](#) and [Meet ITC Awardees](#).

Recent EpiLipidNET Publications (* indicates a VSI article)

*Hajeyah AA, Protty MB, Paul D, Costa D, Omidvar N, Morgan B, Iwasaki Y, McGill B, Jenkins PV, Yousef Z, Allen-Redpath K, Soyama S, Choudhury A, Mitra R, Yaqoob P, Morrissey JH, Collins PW, O'Donnell VB. Phosphatidylthreonine is a procoagulant lipid detected in human blood and elevated in coronary artery disease. *J Lipid Res.* 2024; 65:100484. doi: [10.1016/j.jlr.2023.100484](https://doi.org/10.1016/j.jlr.2023.100484) (United Kingdom)

Ramos-Molina B, Rossell J, Pérez-Montes de Oca A, Pardina E, Genua I, Rojo-López MI, Julián MT, Alonso N, Julve J, Mauricio D. Therapeutic implications for sphingolipid metabolism in metabolic dysfunction-associated steatohepatitis. *Front Endocrinol.* 2024; 15:1400961
doi: [10.3389/fendo.2024.1400961](https://doi.org/10.3389/fendo.2024.1400961) (Spain)

*Jouhet J, Alves E, Boutté Y, Darnet S, Domergue F, Durand T, Fischer P, Fouillen L, Grube M, Joubès J, Kalnenieks U, Kargul JM, Khozin-Goldberg I, Leblanc C, Letsiou S, Lupette J, Markov GV, Medina I, Melo T, Mojzeš P, Momchilova S, Mongrand S, Moreira ASP, Neves BB, Oger C, Rey F, Santaefemia S, Schaller H, Schleyer G, Tietel Z, Zammit G, Ziv C, Domingues R. Plant and algal lipidomes: Analysis, composition, and their societal significance. *Prog Lipid Res.* 2024; 96:101290. doi: [10.1016/j.plipres.2024.101290](https://doi.org/10.1016/j.plipres.2024.101290) (France-Portugal-Latvia-Poland-Israel-Greece-Spain-Czech Republic-Bulgaria-Germany-Malta)

Guerra IMS, Ferreira HB, Maurício T, Pinho M, Diogo L, Moreira S, Goracci L, Bonciarelli S, Melo T, Domingues P, Domingues MR, Moreira ASP. Plasma lipidomics analysis reveals altered profile of triglycerides and phospholipids in children with Medium-Chain Acyl-CoA dehydrogenase deficiency. *J Inherit Metab Dis.* 2024; 47:731-745. doi: [10.1002/jimd.12718](https://doi.org/10.1002/jimd.12718) (Portugal-Italy)

Hodzic A, Gesslbauer B, Bochkov V, Oskolkova OV. Cooperative induction of CXCL chemokines by inflammatory cytokines and oxidized phospholipids. *Immunology.* 2024; 173:286-295.
doi: [10.1111/imm.13773](https://doi.org/10.1111/imm.13773) (Austria)

*Zartmann A, Galano JM, Hammann S. Analysis of glycerol bound ω -oxo-fatty acids as ω -dioxane-FAME-derivatives. *Food Chem* 2025; 463:141223. <https://doi.org/10.1016/j.foodchem.2024.141223>. (Germany-France)

*Halasz M, Łuczaj W, Jarocka-Karpowicz I, Stasiewicz A, Soldo AM, Soldo I, Pajtak A, Senčar M, Grgić T, Kolak T, Žarković N, Skrzydlewska E, Jaganjac M. Relationship between systemic biomarker of lipid peroxidation 4-hydroxynonenal and lipidomic profile of morbidly obese patients undergoing bariatric surgery. *Free Radic Biol Med.* 2024; 224:564-573. <https://doi.org/10.1016/j.freeradbiomed.2024.09.018> (Croatia-Poland)

*Martínez S, Fernández-García M, Londoño-Osorio S, Barbas C, Gradillas A. Highly reliable LC-MS lipidomics database for efficient human plasma profiling based on NIST SRM 1950. *J Lipid Res.* 2024; 65:100671. doi: [10.1016/j.jlr.2024.100671](https://doi.org/10.1016/j.jlr.2024.100671). (Spain)

*Mateo-Marín MA, Alves-Bezerra M. Targeting acetyl-CoA carboxylases for the treatment of MASLD. *J Lipid Res.* 2024; 65:100676. DOI: [10.1016/j.jlr.2024.100676](https://doi.org/10.1016/j.jlr.2024.100676) (Spain)

Escudeiro-Lopes S, Filimonenko VV, Jarolimová L, Hozák P. Lamin A/C and PI(4,5)P2-A Novel Complex in the Cell Nucleus. *Cells*. 2024; 13:399. doi: [10.3390/cells13050399](https://doi.org/10.3390/cells13050399) (Czech Republic)

Neves BB, Pinto S, Pais R, Batista J, Domingues MR, Melo T. Looking into the lipid profile of avocado and byproducts: Using lipidomics to explore value-added compounds. *Compr Rev Food Sci Food Saf*. 2024; 23:e13351. doi: [10.1111/1541-4337.13351](https://doi.org/10.1111/1541-4337.13351) (Portugal)

Ferreira HB, Domingues MR. Oxidized phospholipid-protein adducts: The future targets of interest. *Arch Biochem Biophys*. 2024; 754:109956. doi: [10.1016/j.abb.2024.109956](https://doi.org/10.1016/j.abb.2024.109956) (Portugal)

Monteiro JP, Domingues MR, Calado R. Marine Animal Co-Products-How Improving Their Use as Rich Sources of Health-Promoting Lipids Can Foster Sustainability. *Mar Drugs*. 2024; 22:73. doi: [10.3390/md22020073](https://doi.org/10.3390/md22020073) (Portugal)

*Parchem K, Letsiou S, Petan T, Oskolkova O, Medina I, Kuda O, O'Donnell VB, Nicolaou A, Fedorova M, Bochkov V, Gladine C. Oxylipin profiling for clinical research: Current status and future perspectives. *Prog Lipid Res*. 2024; 95:101276. doi: [10.1016/j.plipres.2024.101276](https://doi.org/10.1016/j.plipres.2024.101276) (Czech Republic-Greece-Slovenia-Austria-Spain-United Kingdom-Germany-France)

Fernandes T, Melo T, Conde T, Neves B, Domingues P, Resende R, Pereira CF, Moreira PI, Domingues MR. Mapping the lipidome in mitochondria-associated membranes (MAMs) in an in vitro model of Alzheimer's disease. *J Neurochem*. 2024; 168:1237-1253. doi: [10.1111/jnc.16072](https://doi.org/10.1111/jnc.16072) (Portugal)

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*Varandas PAMM, Belinha R, Cobb AJA, Prates Ramalho JP, Segundo MA, Loura LMS, Silva EMP. Flow-based bioconjugation of coumarin phosphatidylethanolamine probes: Optimised synthesis and membrane molecular dynamics studies. *Biochim Biophys Acta Biomembr*. 2024; 1866:184335. doi: [10.1016/j.bbmem.2024.184335](https://doi.org/10.1016/j.bbmem.2024.184335) (Portugal-United Kingdom)

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*Kose B, Erkanlı S, Koçak A, Guzel C, Luider T, Dias IHK, Baykal AT. Exploring oxysterols and protein carbonylation in cervicovaginal secretions as biomarkers for cervical cancer development. *Advances in Redox Research*. 2024; 13:100111. doi: [10.1016/j.arres.2024.100111](https://doi.org/10.1016/j.arres.2024.100111) (Turkey-Netherlands-United Kingdom)

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Mouskeftara T, Deda O, Liapikos T, Panteris E, Karagiannidis E, Papazoglou AS, Gika H. Lipidomic-Based Algorithms Can Enhance Prediction of Obstructive Coronary Artery Disease. *J Proteome Res.* 2024; 23:3598-3611. doi: [10.1021/acs.jproteome.4c00249](https://doi.org/10.1021/acs.jproteome.4c00249) (Greece)

Hoboth P, Sztacho M, Hozák P. Nuclear patterns of phosphatidylinositol 4,5- and 3,4-bisphosphate revealed by super-resolution microscopy differ between the consecutive stages of RNA polymerase II transcription. *FEBS J.* 2024; 291:4240-4264. doi: [10.1111/febs.17136](https://doi.org/10.1111/febs.17136) (Czech Republic)

Marques F, Pinho M, Guerra I, Conde TA, Silva J, Cardoso M, Martins M, Abreu H, Cerqueira M, Domingues MR. Unlocking functional lipid ingredients from algae by food-grade biosolvents and ultrasound-assisted extraction for nutritional applications. 2024; *LWT* 200:116136. doi: [10.1016/j.lwt.2024.116136](https://doi.org/10.1016/j.lwt.2024.116136) (Portugal)

* Núria Puig, Pol Camps-Renom, Katarina Öörni, Martin Hermansson, Ana Aguilera, Olga Bautista, Noemi Rotllan, Francesc Jiménez-Altayó, Jose Luis Sánchez-Quesada, Sonia Benitez. Alterations in LDL and HDL after an ischemic stroke associated with carotid atherosclerosis are reversed after 1 year. *J. Lipid Res.* 2025; 66:100739. <https://doi.org/10.1016/j.jlir.2024.100739>

Fernández Requena B, Nadeem S, Reddy VP, Naidoo V, Glasgow JN, Steyn AJC, Barbas C, Gonzalez-Riano C. LiLA: lipid lung-based ATLAS built through a comprehensive workflow designed for an accurate lipid annotation. *Commun Biol.* 2024; 7:45. doi: [10.1038/s42003-023-05680-7](https://doi.org/10.1038/s42003-023-05680-7) (Spain-USA-South Africa)

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Social Media Activities

EpiLipidNET social media platforms are still operational; please continue to post lipid-related news.

Twitter: <https://twitter.com/epilipidnet>

LinkedIn: <https://www.linkedin.com/company/epilipidnet/>

Expert map at <https://www.epilipid.net/directory/>

Newsletter: <https://www.epilipid.net/dissemination-outreach/>

Wishing you all the best for 2025!!

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