

▶ Julie Courraud

Researcher in Clinical Metabolomics & Proteomics

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Education

2010-2013 Ph.D. in Biochemistry, University of Montpellier, France, with honors

2008-2013 Pharm.D. (residency) with Research Specialization, University of Montpellier, France

2009-2010 M.Sc. in Nutrition, University of Nantes and Montpellier, France

2003-2008 Pharmacy school, University of Nantes, France, and Vienna, Austria (Erasmus 2005-2006)

Positions and responsibilities

2021-now Postdoctoral researcher, Laboratory of Analytical Chemistry, Chemistry department, University of Athens, Greece

- Implementation of MS-based diagnostic methods using clinical proteomics for typing of amyloid proteins in tissue samples of patients with amyloidosis. This work is done in collaboration with Alexandra hospital (Prof. Kastritis) where the National Referral Center of Amyloidosis is located. (nanoElute+timsTOF pro)
- (future) Metabolomics as a tool to characterize biological samples of amyloidosis patients.
- (future) Using MALDI MS imaging (timsTOF flex) to type amyloid on tissue samples.
- (past) Targeted metabolomics of wastewaters in relation to SARS-Cov-2 presence (using TASQ).

2017–2021 Academic researcher, Department of Congenital Disorders, Metabolomics unit, Statens Serum Institut, Copenhagen, Denmark

LC-MS/MS untargeted and targeted metabolomics – Dried blood spots and plasma – Psychiatric disorders – Inborn errors of metabolism

- Study design (1000+ samples), grant applications, publications, IT troubleshooting
- Data processing: MZmine, Compound Discoverer, Trace Finder, MetIDQ (p400 Biocrates), GNPS, MS2LDA, MolNetEnhancer, SIRIUS:CSI-FingerID, openMS
- Uni-/multivariate statistical analyses: R markdown, Jupyter notebooks, various R packages and scripts (batch correction, PCoAs, PLSA-DA, PERMANOVA, quality control, etc.), QIIME2, MetaboAnalyst (web and R), Supercomputers
- Development of the Metabolomics Unit, recruitment of staff and management of technician, set up of targeted and untargeted metabolomics pipeline, QA/QC
- Transfer of methods, assessment and optimisation, new matrices, compound libraries for enhanced annotations
- International conference organization (CMC2018, CMC2020, CMC2021, NMS2022)
- Creation and management of the Danish national network for clinical metabolomics, Clime.dk

2015–2017 Postdoctoral fellow, Xlab, Biomedical Sciences, Univ. of Copenhagen, Denmark

Metabolic and dietary profile – Lipid metabolism in the muscle – Muscle mitochondria

- Design of research projects, fundraising
- Food frequency questionnaires, confocal microscopy, immunohistochemical staining, protein electrophoresis
- Data management, statistical analyses (SPSS, linear regression, ANCOVAs), publications

2014–2015 Freelance consultant for the pharmaceutical industry (NFL Biosciences) and teacher for the University of Montpellier

Medical writing – Regulatory affairs – Quality

- Organisational and regulatory support for a phase-1 clinical trial (CESTO NCT02521701)
- Teaching and training on the following topics: management of research projects, management of scientific information, artificial nutrition

2012–2014 Manager in clinical research and medical writer, Clinical research department, Montpellier Cancer Institute, France

Clinical research – Clinical nutrition – Medical oncology – Ethics

- Wrote and reviewed 20 publications, 10 grant applications, and 15 clinical study protocols
- Publication and research strategy, development of collaborations, communication to the public on the institute's website and to research centres in the region, training staff in writing

2010–2013 Junior researcher

Food biochemistry – Vitamin A, E, carotenoids, fatty acids – HPLC-DAD and GC Analytics

- Ph.D. title: Study of carotenoids and retinoids behaviour during in vitro digestion : stability, bioaccessibility and antioxidant properties in the intestine
- Design and validation of new analytical methods, food analysis, in vitro model development, dynamic light scattering, technical troubleshooting, statistical analyses (R)
- Design and management of a 4-site research project including new collaborations, grant applications and publication of results
- Teaching at university (to bachelor and Ph.D. students)

2008–2013 Pharmacy resident in medical pharmacology and toxicology, Montpellier University hospital, France (6 months full-time and shifts for 4 years)

Analytical chemistry – Medical Toxicology & Pharmacology – Emergencies at night

- Analysis of biological samples (blood, urine, gastric liquid) using various methods (immunohistochemistry, HPLC, GC) both day and night (alone)
- Writing and implementation of QA/QC procedures, training of new residents

2008–2009 Pharmacy resident in the central pharmacy, Montpellier University hospital, France (6 months)

Pharmacology – Parenteral nutrition in neonatology – Cardiology – Quality

- Validation of hospital prescriptions in cardiology and neonatology (day and night)
- Audit of the local pharmacies in clinical services
- Supervision and validation of the production of pharmaceutical preparations

2007–2008 Pre-residency in pharmaceutical sciences (part-time hospital, 3 months each)

Chemotherapy preparation unit	Dr. Thomaré, University of Nantes, France
Immunology laboratory	Prof. Josien, University of Nantes, France
Thoracic transplantation unit	Prof. Baron, University of Nantes, France
Internal medicine and reanimation unit	Dr. Wall, Drake University, Des Moines, IA, USA

Other activities

- 2021-now** **Chair** (Events committee, 2022) & active member (Award committee, 2021) of the Females in Mass Spectrometry (**FeMS**) non-profit international organization
- 2021-2022** **Organiser & graphic designer for the four-day 2nd Nordic Metabolomics Conference (2022) - NMC2022** - Copenhagen, Denmark
- 2015-now** Core member of Copenhagen Food Co-op (KBHFF) – distribution and IT
- 2019-2021** **Organizer of the two-day Clinical Metabolomics Copenhagen online conference - CMC2021** - 450 registrations - Novo Nordisk Foundation grant
- 2018-2021** **Founder and chair of the Danish Clinical Metabolomics network - Clime.dk** - approx. 150 members
- 2018-2019** **Organizer of the two-day Clinical Metabolomics Copenhagen conference - CMC2018** - 150 attendees - Novo Nordisk Foundation grant
- 2017** **Organizing committee of the Young Investigators Network - Lifestyle, Obesity and Metabolic research (LOM)**, Copenhagen University, Denmark
- 2016-2019** **Board member and event organiser at the non-profit Centre for Acceleration of Sustainable Change (think.dk)**, Copenhagen, Denmark
- 2015-now** **Core member of Copenhagen Food Co-op (KBHFF)** – distribution and IT
- 2012-2015** **Founder and CEO of my own boardgame publishing company** (Editions la Donzelle, SARL), France
- 2011-2013** **Elected member of the Scientific Board of the University of Montpellier I**, France
- 2013** **Participated in the organization of the 29th EFFoST International Conference** in Montpellier, France
- 2012** **Organizer of the national meeting of pharmacy residents** in Montpellier, France
- 2010-2012** **Vice-president and webmaster of the pharmacy residents association (AIPHMN)**, Montpellier, France
- 2004-2008** **Student representative and elected member of the School of Pharmacy Board of Nantes (France) and local manager of the Student Exchange Program**

Professional Affiliations

Females in Mass Spectrometry, 2020-Present

Nordic Metabolomics Society, 2020-Present

Metabolomics Society, 2018-Present

Danish Clinical Metabolomics network, co-founder and chair, 2018-2021

Publications

Pending articles

1. Courraud, J., Russo, F., Themudo, G., Laursen, S. S., Hougaard, D. M., Werge, T. M., Cohen, A. S., & Ernst, M. (2023). Towards an early detection of 22q11.2 deletion syndrome: A targeted metabolomics study on neonatal dried blood spots. In Preparation.
2. Ottosson, F., Russo, F., Abrahamsson, A., Jensen MacSween, N. S., Courraud, J., Cohen, A. S., Mortensen, P. B., Hougaard, D. M., & Ernst, M. (2023). Unraveling the metabolomic architecture of autism in a large Danish population-based cohort. In Preparation.
3. Ottosson, F., Russo, F., Abrahamsson, A., Jensen MacSween, N. S., Courraud, J., Krag Nielsen, Z., Hougaard, D. M., Cohen, A. S., & Ernst, M. (2023). Long-term storage has minor effects on biobanked neonatal dried blood spot metabolome. *Journal of Proteome Research*, Under Review.

Published articles

4. Gürdeniz, G., Ernst, M., Rago, D., Kim, M., Courraud, J., Stokholm, J., Bønnelykke, K., Björkbom, A., Trivedi, U., Sørensen, S. J., Brix, S., Hougaard, D., Rasmussen, M., Cohen, A. S., Bisgaard, H., & Chawes, B. (2022). Neonatal metabolome of caesarean section and risk of childhood asthma. *The European Respiratory Journal*, 59(6), 2102406. <https://doi.org/10.1183/13993003.02406-2021>
5. Fadista, J., Yakimov, V., Vösa, U., Hansen, C. S., Kasela, S., Skotte, L., Geller, F., Courraud, J., Esko, T., Kukuškina, V., Buil, A., Melbye, M., Werge, T. M., Hougaard, D. M., Milani, L., Bybjerg-Grauholm, J.,

- Cohen, A. S., & Feenstra, B. (2021). Genetic regulation of spermine oxidase activity and cancer risk: A Mendelian randomization study. *Scientific Reports*, 11(1), 17463. <https://doi.org/10.1038/s41598-021-97069-x>
6. Courraud, J., Ernst, M., Svane Laursen, S., Hougaard, D. M., & Cohen, A. S. (2021). Studying Autism Using Untargeted Metabolomics in Newborn Screening Samples. *Journal of Molecular Neuroscience: MN*, 71(7), 1378–1393. <https://doi.org/10.1007/s12031-020-01787-2>
 7. Fernandez-Guerra, P., Gonzalez-Ebsen, A. C., Boonen, S. E., Courraud, J., Gregersen, N., Mehlsen, J., Palmfeldt, J., Olsen, R. K. J., & Brinth, L. S. (2021). Bioenergetic and Proteomic Profiling of Immune Cells in Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Patients: An Exploratory Study. *Biomolecules*, 11(7), 961. <https://doi.org/10.3390/biom11070961>
 8. Ernst, M., Rogers, S., Lausten-Thomsen, U., Björkbom, A., Laursen, S. S., Courraud, J., Børghlum, A., Nordentoft, M., Werge, T., Mortensen, P. B., Hougaard, D. M., & Cohen, A. S. (2021). Gestational age-dependent development of the neonatal metabolome. *Pediatric Research*, 89(6), 1396–1404. <https://doi.org/10.1038/s41390-020-01149-z>
 9. Kogelman, L. J. A., Falkenberg, K., Buil, A., Erola, P., Courraud, J., Laursen, S. S., Michoel, T., Olesen, J., & Hansen, T. F. (2021). Changes in the gene expression profile during spontaneous migraine attacks. *Scientific Reports*, 11(1), 8294. <https://doi.org/10.1038/s41598-021-87503-5>
 10. Fadista, J., Skotte, L., Courraud, J., Geller, F., Gørtz, S., Wohlfahrt, J., Melbye, M., Cohen, A. S., & Feenstra, B. (2021). Integrating genetics with newborn metabolomics in infantile hypertrophic pyloric stenosis. *Metabolomics: Official Journal of the Metabolomic Society*, 17(1), 7. <https://doi.org/10.1007/s11306-020-01763-2>
 11. Courraud, J., Quist, J. S., Kontopodi, E., Blomberg Jensen, M., Bjerrum, P. J., Helge, J. W., & Sørensen, K. (2020). Dietary habits, metabolic health and vitamin D status in Greenlandic children. *Public Health Nutrition*, 23(5), 904–913. <https://doi.org/10.1017/S1368980019002799>
 12. Lacroix, C., Georges, G., Thézenas, S., Flori, N., Francioni, L., Janiszewski, C., Courraud, J., Lecornu, H., de Forges, H., & Senesse, P. (2020). [The role of the specialist nurse in parenteral nutrition: An observational study of complications with home parenteral nutrition in adult cancer patients]. *Recherche En Soins Infirmiers*, 140, 107–116. <https://doi.org/10.3917/rsi.140.0107>
 13. Kristensen, M. D., Petersen, S. M., Møller, K. E., Lund, M. T., Hansen, M., Hansen, C. N., Courraud, J., Helge, J. W., Dela, F., & Prats, C. (2018). Obesity leads to impairments in the morphology and organization of human skeletal muscle lipid droplets and mitochondrial networks, which are resolved with gastric bypass surgery-induced improvements in insulin sensitivity. *Acta Physiologica (Oxford, England)*, 224(4), e13100. <https://doi.org/10.1111/apha.13100>
 14. Lund, M. T., Larsen, S., Hansen, M., Courraud, J., Floyd, A. K., Støckel, M., Helge, J. W., & Dela, F. (2018). Mitochondrial respiratory capacity remains stable despite a comprehensive and sustained increase in insulin sensitivity in obese patients undergoing gastric bypass surgery. *Acta Physiologica (Oxford, England)*, 223(1), e13032. <https://doi.org/10.1111/apha.13032>
 15. Senesse, P., Isambert, A., Janiszewski, C., Fiore, S., Flori, N., Poujol, S., Arroyo, E., Courraud, J., Guillaumon, V., Mathieu-Daudé, H., Colasse, S., Baracos, V., de Forges, H., & Thezenas, S. (2017). Management of Cancer Cachexia and Guidelines Implementation in a Comprehensive Cancer Center: A Physician-Led Cancer Nutrition Program Adapted to the Practices of a Country. *Journal of Pain and Symptom Management*, 54(3), 387–393.e3. <https://doi.org/10.1016/j.jpainsymman.2017.01.010>
 16. Duffour, J., Combes, A., Crapez, E., Boissière-Michot, F., Bibeau, F., Senesse, P., Ychou, M., Courraud, J., de Forges, H., & Roca, L. (2016). Reproductive Decision-Making in MMR Mutation Carriers After Results Disclosure: Impact of Psychological Status in Childbearing Options. *Journal of Genetic Counseling*, 25(3), 432–442. <https://doi.org/10.1007/s10897-015-9888-7>
 17. Khemissa, F., Mineur, L., Amsellem, C., Assenat, E., Ramdani, M., Bachmann, P., Janiszewski, C., Cristiani, I., Collin, F., Courraud, J., de Forges, H., Dechelotte, P., & Senesse, P. (2016). A phase III study evaluating oral glutamine and transforming growth factor-beta 2 on chemotherapy-induced toxicity in patients with digestive neoplasm. *Digestive and Liver Disease: Official Journal of the Italian Society of Gastroenterology and the Italian Association for the Study of the Liver*, 48(3), 327–332. <https://doi.org/10.1016/j.dld.2015.11.025>

18. Guerdoux-Ninot, E., Kilgour, R. D., Janiszewski, C., Jarlier, M., Meuric, J., Poirée, B., Buzzo, S., Ninot, G., Courraud, J., Wismer, W., Thezenas, S., & Senesse, P. (2016). Meal context and food preferences in cancer patients: Results from a French self-report survey. *SpringerPlus*, 5(1), 810. <https://doi.org/10.1186/s40064-016-2538-1>
19. Courraud, J. (2014). Zotero: A free and open-source reference manager. *Medical Writing*, 23(1), 46–48. <https://doi.org/10.1179/2047480614Z.000000000190>
20. Flori, N., Courraud, J., Assenat, E., & Senesse, P. (2014). A new suturing procedure for closure of a gastrocutaneous fistula. *Endoscopy*, 46 Suppl 1 UCTN, E258-259. <https://doi.org/10.1055/s-0034-1365433>
21. Courraud, J., Charnay, C., Cristol, J. P., Berger, J., & Avallone, S. (2013). In vitro lipid peroxidation of intestinal bile salt-based nanoemulsions: Potential role of antioxidants. *Free Radical Research*, 47(12), 1076–1087. <https://doi.org/10.3109/10715762.2013.853877>
22. Courraud, J., Berger, J., Cristol, J.-P., & Avallone, S. (2013). Stability and bioaccessibility of different forms of carotenoids and vitamin A during in vitro digestion. *Food Chemistry*, 136(2), 871–877. <https://doi.org/10.1016/j.foodchem.2012.08.076>

Reports and online procedures

23. Courraud J, Avallone S, Maire B, Martin-Prével Y, Berger J. (2012) [Nutritional impact of palm oil]. Invited report for the Languedoc-Roussillon Regional Board. 58 pages. French. Confidential.
24. Courraud, J., Abrahamsson, A., & Ernst, M. (2021, April 15). Reference Spectral Library mzVault Addition. GNPS Documentation. <https://ccms-ucsd.github.io/GNPSDocumentation/batchuploadmzvault/>

International meetings as first author

25. Metabolomics Society Annual meeting 2021 – Online – Poster session. Courraud J., Themudo G., Laursen S.S., Hougaard D., Werge T., Ernst M. & Cohen A. Towards an early detection of 22q11.2 deletion syndrome: a targeted metabolomics study on neonatal dried blood spots.
26. Mass Spectrometry & Advances in the Clinical Lab (MSACL) Annual meeting 2019 – Salzburg, Austria – Oral communication. Courraud, J., Ernst, M., Svane Laursen, S., Hougaard, D. M., & Cohen, A. S. Untargeted metabolomic profiles of newborns that will or will not develop autism: a pilot study on dried blood spots.
27. Danish Diabetes Academy Winter School 2017 – Malaga, Spain – Poster session. Courraud J., Quist J. S., Kontopodi E., Helge J. W., Munch-Andersen T., Sørensen K. Dietary habits and metabolic health in Greenlandic children. Preliminary results. Poster #25
28. European Nutrition Society Annual meeting 2011 – FENS – Madrid, Spain – Poster session. Courraud, J., Berger, J., Cristol, J.-P., & Avallone, S. Stability and Bioaccessibility of Different Forms of Carotenoids and Vitamin A during in Vitro Digestion. *Annals of Nutrition and Metabolism* 58, Suppl. 3 (2011): 246–246. <https://doi.org/10.1159/000334393>

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