

## LIST OF PEER REVIEWED PUBLICATIONS ([PUBMED](#) & [GOOGLE SCHOLAR](#))

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The international peer-reviewed publications in the scientific journals can also be retrieve by clicking on the 'PubMed' and / or 'Google Scholar' link above.

### Original research articles in international peer-reviewed journals

1. Lamichhane, S., **Sen, P.**, Dickens, AM., Kråkström, Jorma, M., Johanna Lempainen, J., Hyoty, H., Lahesmaa, R., Veijola, K., Toppari, J., Hyötyläinen, T., Knip, M., Orešič, M. (2023). Circulating metabolic signatures of rapid and slow progression to type 1 diabetes in islet autoantibody-positive children. **Frontiers in Endocrinology**, 14, 1211015.
2. Lamichhane, S.\*, **Sen, P.\***, Dickens, AM., Alves, MA., Härkönen, T., Honkanen, J., Vatanen, T., Xavier, RJ., Hyötyläinen, T., Knip, M., Orešič, M. (2022). Dysregulation of secondary bile acid metabolism precedes islet autoimmunity and type 1 diabetes. **Cell Rep Med**, 100762.
3. **Sen, P.**, Govaere, O., Sinioja, T., McGlinchey, A., Geng D., Ratzu, V., Bugianesi, E., Schattenberg, JM., Vidal-Puig, A., Allison, M., Cockell, S., Daly A.K., Hyötyläinen, T., Anstee, Q.M., Orešič, M. (2022). Quantitative modelling of human liver reveals dysregulation of glycosphingolipid pathways in nonalcoholic fatty liver disease. **iScience**, 104949.
4. Ribeiro, H.C., **Sen, P.**, P, Dickens, A., Cruz, E.C.S., Oresic, M., Sussulini, A. (2022). Metabolomic and proteomic profiling in bipolar disorder patients revealed potential molecular signatures related to hemostasis. **Metabolomics** 18, 8, 1-13.
5. Johnson, K., Leary J.P., Govaere, O., Barter J.M., Charlton, H.S., Cockell, J.S., Tiniakos, D., *et al.* (2021). Increased serum miR-193a-5p during non-alcoholic fatty liver disease progression: diagnostic and mechanistic relevance. **JHEP Reports**, 100409.
6. **Sen, P.**, Andrabi, S.B.A., Buchacher, T., Khan, M.M., Kalim, U.U., Lindeman, T.M., Alves, M.A., Hinkkanen, V., Kemppainen, E., Dickens, A.M., *et al.* (2021). Quantitative genome-scale metabolic modeling of human CD4<sup>+</sup> T cell differentiation reveals subset-specific regulation of glycosphingolipid pathways. **Cell Rep** 37, 109973.
7. **Sen, P.**, Qadri, S., Luukkonen, P.K., Ragnarsdottir, O., McGlinchey, A., Jantti, S., Juuti, A., Arola, J., Schlezinger, J.J., Webster, T.F., *et al.* (2021). Exposure to environmental contaminants is associated with altered hepatic lipid metabolism in non-alcoholic fatty liver disease. **J Hepatol** (doi: 10.1016/j.jhep.2021.09.039).
8. Petersen, A.O., Julienne, H., Hyotylainen, T., **Sen, P.**, Fan, Y., Pedersen, H.K., Jantti, S., Hansen, T.H., Nielsen, T., Jorgensen, T., *et al.* (2021). Conjugated C-6 hydroxylated bile acids in serum relate to human metabolic health and gut Clostridia species. **Sci Rep** 11, 13252.

9. Dickens, A.M.\*, **Sen, P.\***, Kempton, M.J., Barrantes-Vidal, N., Iyegbe, C., Nordentoft, M., Pollak, T., Riecher-Rossler, A., Ruhrmann, S., Sachs, G., *et al.* (2021). Dysregulated Lipid Metabolism Precedes Onset of Psychosis. **Biol Psychiatry** 89, 288-297.
10. Lamichhane, S., Dickens, A.M., **Sen, P.**, Laurikainen, H., Borgan, F., Suvisaari, J., Hyötyläinen, T., Howes, O., Hietala, J., and Orešič, M. (2021). Association Between Circulating Lipids and Future Weight Gain in Individuals With an At-Risk Mental State and in First-Episode Psychosis. **Schizophr Bull** 46, 1, 160-169.
11. Sinisalu, L., **Sen, P.**, Salihović, S., Virtanen, S.M., Hyöty, H., Ilonen, J., Toppari, J., Veijola, R., Orešič, M., Knip, M., *et al.* (2020). Early-life exposure to perfluorinated alkyl substances modulates lipid metabolism in progression to celiac disease. **Environ Res** 188, 109864.
12. **Sen, P.**, Dickens, A.M., López-Bascón, M.A., Lindeman, T., Kemppainen, E., Lamichhane, S., Rönkkö, T., Ilonen, J., Toppari, J., Veijola, R., Hyöty, H., Hyötyläinen, T., Knip, M., Orešič, M. (2020). Metabolic alterations in immune cells associate with progression to type 1 diabetes. **Diabetologia** 63, 1017-1031.
13. McGlinchey, A., Sinioja, T., Lamichhane, S., **Sen, P.**, Bodin, J., Siljander, H., Dickens, A.M., Geng, D., Carlsson, C., Duberg, D., *et al.* (2020). Prenatal exposure to perfluoroalkyl substances modulates neonatal serum phospholipids, increasing risk of type 1 diabetes. **Environ Int** 143, 105935.
14. Khoomrung, S., Nookaew, I., **Sen, P.**, Olafsdottir, T.A., Persson, J., Moritz, T., Andersen, P., Harandi, A.M., and Nielsen, J. (2020). Metabolic Profiling and Compound-Class Identification Reveal Alterations in Serum Triglyceride Levels in Mice Immunized with Human Vaccine Adjuvant Alum. **J Proteome Res** 19, 269-278.
15. **Sen, P.**, Carlsson, C., Virtanen, S.M., Simell, S., Hyöty, H., Ilonen, J., Toppari, J., Veijola, R., Hyötyläinen, T., Knip, M., *et al.* (2019). Persistent Alterations in Plasma Lipid Profiles Before Introduction of Gluten in the Diet Associated With Progression to Celiac Disease. **Clin Transl Gastroenterol** 10, 1-10.
16. Vincent, A., Savolainen, O.I., **Sen, P.**, Carlsson, N.G., Almgren, A., Lindqvist, H., Lind, M.V., Undeland, I., Sandberg, A.S., and Ross, A.B. (2017). Herring and chicken/pork meals lead to differences in plasma levels of TCA intermediates and arginine metabolites in overweight and obese men and women. **Mol Nutr Food Res** 61.
17. Thankaswamy-Kosalai, S.\*, **Sen, P.\***, and Nookaew, I. (2017). Evaluation and assessment of read-mapping by multiple next-generation sequencing aligners based on genome-wide characteristics. **Genomics** 109, 186-191.
18. **Sen, P.**, Mardinogulu, A., and Nielsen, J. (2017). Selection of complementary foods based on optimal nutritional values. **Sci Rep** 7, 5413.

19. Olafsdottir, T.A., Lindqvist, M., Nookaew, I., Andersen, P., Maertzdorf, J., Persson, J., Christensen, D., Zhang, Y., Anderson, J., Khoomrung, S., **Sen, P.**, *et al.* (2016). Comparative Systems Analyses Reveal Molecular Signatures of Clinically tested Vaccine Adjuvants. **Sci Rep** 6, 39097.
20. Shoaie, S., Ghaffari, P., Kovatcheva-Datchary, P., Mardinoglu, A., **Sen, P.**, Pujos-Guillot, E., de Wouters, T., Juste, C., Rizkalla, S., Chilloux, J., *et al.* (2015). Quantifying Diet-Induced Metabolic Changes of the Human Gut Microbiome. **Cell Metab** 22, 320-331.
21. **Sen, P.**, Vial, H.J., and Radulescu, O. (2013). Kinetic modelling of phospholipid synthesis in *Plasmodium knowlesi* unravels crucial steps and relative importance of multiple pathways. **BMC Syst Biol** 7, 123.

### Review articles in international peer-reviewed scientific journals

22. **Sen, P.**, and Orešič, M. (2023). Integrating Omics Data in Genome-Scale Metabolic Modeling: A Methodological Perspective for Precision Medicine. **Metabolites** (MDPI), 13, 7, 855.
23. Krefting, J., **Sen, P.**, David-Rus, D., Güldener, U., Hawe, J.S., Scheidt M.V., 2, Cassese, S., and Schunkert, H (2023). Use of big data from health insurance for assessment of cardiovascular outcomes **Frontiers in Artificial Intelligence**, 2023, 6.
24. Mathema, V., **Sen, P.**, Lamichhane, S., Khoomrung, S., Orešič, M. (2023). Deep learning facilitates multi-data type analysis and predictive biomarker discovery in cancer precision medicine. **Computational and Structural Biotechnology Journal** (CSBJ), 21, 1372-1382.
25. **Sen, P.**, Lamichhane, S., Mathema, V.B., McGlinchey, A., Dickens, A.M., Khoomrung, S., and Oresic, M. (2021). Deep learning meets metabolomics: a methodological perspective. **Brief Bioinform** 22, 1531-1542.
26. Lamichhane, S., **Sen, P.**, Alves, M.A., Ribeiro, H.C., Raunioniemi, P., Hyötyläinen, T., and Oresic, M. (2021). Linking Gut Microbiome and Lipid Metabolism: Moving beyond Associations. **Metabolites** 11.
27. Alves, M.A., Lamichhane, S., Dickens, A., McGlinchey, A., Ribeiro, H.C., **Sen, P.**, Wei, F., Hyötyläinen, T., and Oresic, M. (2021). Systems biology approaches to study lipidomes in health and disease. **Biochim Biophys Acta Mol Cell Biol Lipids**, 1866, 158857.
28. **Sen, P.**, and Orešič, M. (2019). Metabolic Modelling of Human Gut Microbiota on a Genome Scale: An Overview. **Metabolites** 9.
29. Lamichhane, S., **Sen, P.**, Dickens, A.M., Oresic, M., and Bertram, H.C. (2018). Gut metabolome meets microbiome: A methodological perspective to understand the relationship between host and microbe. **Methods** 149, 3-12.

30. **Sen, P.**, Kemppainen, E., and Orešič, M. (2017). Perspectives on Systems Modelling of Human Peripheral Blood Mononuclear Cells. **Front Mol Biosci** 4, 96.

### Manuscripts available as preprints and under peer-review in scientific journals

31. Sabatini, S., **Sen, P.**, Carli, F., Samantha Pezzica, S., Rosso, C., Lembo, E., Verrastro, O., Daly, A., Govaere, O., Cockel, S., Hyötyläinen, T., Mingrone, G., Bugianesi, E., Orešič, M., Gastaldelli, A. (2023). Higher Hepatic Glucose Production and Gluconeogenesis are Features of Severe Metabolic Dysfunction-Associated Steatohepatitis Even in Absence of T2D. **Sneak Peek**.
32. Aatsinki, A.-K., Lamichhane, S. Isokääntä, H., **Sen, P.**, Kråkström, M., Alves, M. A., Keskitalo, A., Munukka, E., Karlsson, H., Perasto, L., Lukkarinen, M., Oresic, M., Kailanto, H.-M.; Karlsson, L., Lahti, L., Dickens, A. M. (2023). Dynamics of Gut Metabolome and Microbiome Maturation during Early Life. **medRxiv**, 2023.05.29.23290441.
33. Lamichhane, S.\*, **Sen, P.\***, Dickens, A.M., Amaral Alves, M., Karkonen, T., Honkanen, J., Vatanen, T., Xavier, R.J., Hyotylainen, T., Knip, M., *et al.* (2021). Dynamics of gut microbiome - mediated bile acid metabolism in progression to islet autoimmunity. **medRxiv**, 2021.2008.2020.21262371.
34. **Sen, P.**, Govaere, O., Sinioja, T., McGlinchey, A., Geng, D., Ratziu, V., Bugianesi, E., Schattenberg, J.M., Vidal-Puig, A., Allison, M., *et al.* (2021). Quantitative genome-scale analysis of human liver reveals dysregulation of glycosphingolipid pathways in progressive nonalcoholic fatty liver disease. **medRxiv**, 2021.2002.2009.21251354.

### Books and chapters

35. **Sen, P.**, Lamichhane, S., Dickens, A., and Oresic, M. (2019). The Role of Omic Technologies in the Study of the Human Gut Microbiome. Reference Module in **Food Science**.
36. Lamichhane, S., **Sen, P.**, Dickens, A.M., Hyötyläinen, T., and Orešič, M. (2018). An Overview of Metabolomics Data Analysis: Current Tools and Future Perspectives. **Comprehensive analytical chemistry** 82, 387-413.
37. **Sen, P.**, Vial, H.J., and Radulescu, O. (2016). Mathematical modelling and omic data integration to understand dynamic adaptation of Apicomplexan parasites and identify pharmaceutical targets. **Comprehensive Analysis of Parasite Biology: From Metabolism to Drug Discovery** 7, 457.

### Editorials in peer-reviewed scientific journals

38. **Sen, P.**, Hyotylainen, T., and Oresic, M. (2021). 1-deoxyceramides - key players in lipotoxicity and progression to type 2 diabetes? **Acta Physiol (Oxf)**, e13635.

## PhD Thesis

39. **Sen, P. (2013)**. Integrated modelling of lipid metabolism in Plasmodium, the causative parasite of malaria (Université Montpellier II-Sciences et Techniques du Languedoc) [[weblink](#)].

\*Signifies equal contributions