

PD Dr. Jürgen Schiller

Date of Birth: 06.12.1965
Gender: male

Institute Address: Universität Leipzig
Medizinische Fakultät
Institut für Medizinische Physik und
Biophysik
Härtelstraße 16-18
04107 Leipzig
Phone: 0341 / 97 15733
Fax: 0341 / 97 15709
E-mail: juergen.schiller@medizin.uni-leipzig.de



Current Position: Research Associate (Group Leader, Permanent Position)

Academic Training:

10/1985–02/1991 Studies of Chemistry, University of Bayreuth

Scientific Certificates:

2002 Habilitation in Biophysics ("Combined application of MALDI-TOF mass spectrometry and ³¹P NMR spectroscopy for the analysis of lipids and the development of clinical topics", Mentor: Supervisor: Prof. Klaus Arnold), Universität Leipzig
1995 Doctorate (Thesis: "NMR investigations of synovial fluids and contributions to the modeling of cartilage destruction during rheumatoid arthritis", Supervisor: Prof. Klaus Arnold), Universität Leipzig
1991 Diploma in Chemistry (Supervisor: Prof. Bernd Wrackmeyer), University of Bayreuth

Professional Career:

since 2013 Principal investigator, SFB 1052 (funded by DFG)
since 2009 Principal investigator, Transregio 67 (funded by DFG)
since 2003 Permanent position as scientific co-worker at the Institute of Medical Physics and Biophysics at the Faculty of Medicine, Universität Leipzig; Group Leader
since 2001 Regular position as scientific co-worker at the Institute of Medical Physics and Biophysics at the Faculty of Medicine, Universität Leipzig
1995–2001 Post-Doc at the Institute of Medical Physics and Biophysics (funded by DFG including a "Forschungsstipendium")
1992–1995 Universität Leipzig, PhD Student

Scientific Activities, Honors, Awards:

1995–1997 Research Grant by DFG
2018 Guest Editor "Chemistry and Physics of Lipids"
Editorial Board Member ("Journal of Planar Chromatography", "Current Analytical Chemistry", "Journal of Glycomics and Lipidomics", "Encyclopedia of Lipidomics" (Section Editor)

Most Important Publications:

a) Peer-reviewed Publications

- Popkova Y, Dannenberger D, **Schiller J**, Engel KM. Differences in the lipid patterns during maturation of 3T3-L1 adipocytes investigated by thin-layer chromatography, gas chromatography, and mass spectrometric approaches. *Anal Bioanal Chem.* 2020; 412:2237-2249.
- Schröter J, Fülöp A, Hopf C, Schiller J. The combination of 2,5-dihydroxybenzoic acid and 2,5-dihydroxyacetophenone matrices for unequivocal assignment of phosphatidylethanolamine species in complex mixtures. *Anal Bioanal Chem.* 2018; 410: 2437-2447.
- Vorselen D, van Dommelen SM, Sorkin R, Piontek MC, **Schiller J**, Döpp ST, Kooijmans SAA, van Oirschot BA, Versluijs BA, Bierings MB, van Wijk R, Schiffelers RM, Wuite GJL, Roos WH. The fluid membrane determines mechanics of erythrocyte extracellular vesicles and is softened in hereditary spherocytosis. *Nat Commun.* 2018; 9: 4960.
- Leopold J, Popkova Y, Engel KM, **Schiller J**. Recent developments of useful MALDI matrices for the mass spectrometric characterization of lipids. *Biomolecules* 2018; 8: E173.
- Leopold J, Popkova Y, Engel KM, **Schiller J**. Visualizing phosphatidylcholine via mass spectrometry imaging: relevance to human health. *Expert Rev Proteomics* 2018; 15: 791-800.
- Engel KM, **Schiller J**. A comparison of PC oxidation products as detected by MALDI-TOF and ESI-IT mass spectrometry. *Chem Phys Lipids* 2017; 203: 33-45.
- Veshaguri S, Christensen SM, Kemmer GC, Ghale G, Møller MP, Lohr C, Christensen AL, Justesen BH, Jørgensen IL, **Schiller J**, Hatzakis NS, Grabe M, Pomorski TG, Stamou D. Direct observation of proton pumping by a eukaryotic P-type ATPase. *Science* 2016; 351:1469-73.
- Popkova Y, Meusel A, Breitfeld J, Schleinitz D, Hirrlinger J, Dannenberger D, Kovacs P, **Schiller J**. Nutrition-dependent changes of adipose tissue compositions monitored by NMR, MS and chromatographic methods. *Anal Bioanal Chem.* 2015; 407: 5123-33.
- Stewart JD, Marchan R, Lesjak MS, Lambert J, Hergenroder R, Ellis JK, Keun H, Schmitz G, **Schiller J**, Ebisch M, Hedberg C, Waldmann H, Lausch E, Tanner B, Sehouli J, Sagemüller J, Staude H, Steiner E, Hengstler JG. Choline-providing glycerophosphodiesterase EDI3 drives tumour cell migration and metastasis. *Proc Natl Acad Sci USA.* 2012; 109: 8155-60.
- Fuchs B, Süß R, **Schiller J**. An update of MALDI-TOF mass spectrometry in lipid research. *Progr Lipid Res.* 2010; 49: 450-75.

b) Patents (Pending and Granted)

- Two "Application Notes" together with the Bruker Daltonics Company (Bremen)

Scientific Collaborations in the Last Three Years

- | | |
|---|---|
| • K. Müller (IZW Berlin, Germany) | Changes of spermatozoal lipids |
| • J. Rademann (Berlin, Germany) | Glycosaminoglycan Analysis |
| • M. Schulz (MERCK, Germany) | TLC/MS coupling |
| • D. Dannenberger (Rostock, Germany) | Lipid composition of meat |
| • T. Pomorski (Copenhagen, Denmark) | Cellular lipid analysis by MS and NMR |
| • R. Brock (Nijmegen, Netherlands) | Sphingomyelinase activity determination |
| • C. Hopf (Mannheim, Germany) | MALDI MS Imaging |
| • M. Palusinska-Szyszl (Lublin, Poland) | Lipid Analysis of Bacteria |
| • B. Fuchs (Rostock, Germany) | PLA ₂ determination |