

Lipidomics and Transcriptomics in Neurological Diseases

Julia M. Post¹, Raissa Lerner¹, Claudia Schwitter¹, Beat Lutz¹, Ermelinda Lomazzo¹, Laura Bindila¹

¹Institute of Physiological Chemistry, University Medical Center of the Johannes Gutenberg University Mainz

Corresponding Author

Laura Bindila

bindila@uni-mainz.de

Citation

Post, J.M., Lerner, R., Schwitter, C., Lutz, B., Lomazzo, E., Bindila, L. Lipidomics and Transcriptomics in Neurological Diseases. *J. Vis. Exp.* (181), e59423, doi:10.3791/59423 (2022).

Date Published

March 18, 2022

DOI

10.3791/59423

URL

jove.com/video/59423

Materials

Name	Company	Catalog Number	Comments
12(S)-HETE	Biomol	Cay10007248-25	Lipid Std
12(S)-HETE-d8	Biomol	Cay334570-25	Lipid Std
1200 series LC System	Agilent		Instrumentation/LCMS
2100 Bioanalyzer	Agilent		Instrumentation/qPCR
5(S)-HETE-d8	Biomol	Cay 334230	Lipid Std
ABI 7300 Real-Time PCR cycler	Applied Biosystems		Instrumentation/qPCR
Acetonitrile LC-MS Chroma Solv	Honeywell	9814920	Solvent/LCMS
amber eppendorf tubes	Eppendorf		Sample Prep.
Analyst 1.6.2 Software	AB SCIEX, Darmstadt		Software
Analytical balance	Mettler Toledo		Instrumentation/Sample prep.
Arachidonic Acid-d8 MS Standard	Biomol	Cay-10007277	Lipid Std
Bessmann Tissue Pulverizer	Spectrum Laboratories, Inc. (Breda, Netherlands)		Instrumentation/Sample prep.
Bino	Zeiss		Microscopy
cleaved Caspase 3 antibody	Cellsignaling	9661S	Microscopy
Cryostat, Leica CM3050 S	Leica Biosystems		Instrumentation/Sample prep.
CTC HTC PAL autosampler	CTC Analytics AG		Instrumentation/LCMS
Dumont Curved Forceps Dumoxel #7	FST	11271-30	Surgical Tools
Dumont Forceps Super fine tip #5SF (x2)	FST	11252-00	Surgical Tools
EDTA 1000 A Röhrchen	Kabe Labortechnik	078001	Sample Prep.
EP-1 EconoPump	BioRAD	700BR07757	Instrumentation/Sample prep.
Fine Forceps Mirror Finish	FST	11412-11	Surgical Tools
Fine Iris Scissors straight sharp	FST	14094-11	Surgical Tools
Fine Scissor Tungsten Carbide straight	FST	14568-09	Surgical Tools
Iris Spatulae	FST	10094-13	Surgical Tools
Kainic acid	Abcam	ab120100	Epileptic drug
Lipid View software	AB SCIEX, Darmstadt		Software
LPC 17:0	Avanis Polaris	855676P	Lipid Std

LPC 18:0	Avanis Polaris	855775P	Lipid Std
Luna 2,5µm C18(2)- HAST 100A LC column	Phenomenex	00D-4446-B0	Instrumentation/LCMS
Magnifying lamp	Maul GmbH		Instrumentation/Sample prep.
Methanol LC-MS Chroma Solv 99.9%	Honeywell	9814920	Solvent/LCMS
Motic Camara	Motic		Microscopy
MTBE	Honeywell	34875-1L	Solvent/LCMS
MultiQuant 3.0 quantitation software package	AB SCIEX, Darmstadt		Software
NanoDrop 2000c Spectrophotometer	Thermo Scientific		Instrumentation/qPCR
PA 16:0-18:1	Avanis Polaris	840857P	Lipid Std
PA 17:0-14:1	Avanis Polaris	LM-1404	Lipid Std
Palmitoyl Ethanolamide	Biomol	Cay90350-100	Lipid Std
Palmitoyl Ethanolamide-d5	Biomol	Cay9000573-5	Lipid Std
PC 16:0-18:1	Avanis Polaris	850457P	Lipid Std
PC 16:0-18:1	Avanis Polaris	850457P	Lipid Std
PC 17:0-14:1	Avanis Polaris	LM-1004	Lipid Std
PE 16:0-18:1	Avanis Polaris	850757P	Lipid Std
PE 17:0-14:1	Avanis Polaris	LM-1104	Lipid Std
PG 16:0-18:1	Avanis Polaris	840457P	Lipid Std
PG 17:0-14:1	Avanis Polaris	LM-1204	Lipid Std
PI 17:0-14:1	Avanis Polaris	LM-1504	Lipid Std
Precelleys 24	Peqlab		Instrumentation/Sample prep.
Precellys Keramik-Kügelchen	Peqlab	91-pcs-ck14p	Sample Prep.
Precellys Stahlkugeln 2,8mm	Peqlab	91-PCS-MK28P	Sample Prep.
Precellys-keramik-kit 1,4 mm	VWR	91-PCS-CK14	Sample Prep.
Prostaglandin D2	Biomol	Cay 12010	Lipid Std
Prostaglandin D2-d4	Biomol	Cay 312010	Lipid Std
Prostaglandin E2	Biomol	Cay10007211-1	Lipid Std
Prostaglandin E2-d9	Biomol	Cay10581-50	Lipid Std
PS 17:0-14:1	Avanis Polaris	LM-1304	Lipid Std
Q Trap 5500 triple-quadrupole linear ion trap MS	AB SCIEX	AU111609004	Instrumentation/LCMS
Real Time PCR System	Appliert Biosystem		Instrumentation/qPCR
Resolvin D1	Biomol	Cay10012554-11	Lipid Std
Rneasy Mini Kit - RNAase-Free DNase Set (50)	Qiagen	79254	Sample Prep.
Security Guard precolumn	Phenomenex		Instrumentation/LCMS
Shandon coverplates	Thermo Fisher	72110017	Microscopy
Shandon slide rack and lid	Thermo Fisher	73310017	Microscopy
SM 18:0	Avanis Polaris	860586P	Lipid Std
SM d18:1/12:0	Avanis Polaris	LM-2312	Lipid Std
Standard Forceps straight Smooth	FST	11016-17	Surgical Tools
Surgical Scissor ToughCut Standard Pattern	FST	14130-17	Surgical Tools
T3000 Thermocycler	Biometra		Instrumentation/qPCR
Thromboxane B2	Biomol	Cay19030-5	Lipid Std
Thromboxane B2-d4	Biomol	Cay319030-25	Lipid Std

Tissue Lyser II	Qiagen/ Retsch	12120240804	Instrumentation/Sample prep.
Tissue Tek	Sakura Finetek	4583	Microscopy
Toluidinblau	Roth	0300.2	Microscopy
Vapotherm	Barkey	4004734	Instrumentation/Sample prep.
Wasser LC-MS Chroma Solv	VWR	9814920	Solvent/LCMS