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Activity-based proteomics of the endocannabinoid system

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Activity-based proteomics of the endocannabinoid system

PROEFSCHRIFT

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door

Eva Jacoba van Rooden

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Promotiecommissie

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Abbreviations

AA	arachidonic acid
ABP	activity-based probe
ABPP	activity-based protein profiling
ACN	acetonitrile (CH_3CN)
AEA	anandamide
2-AG	2-arachidonoylglycerol
aq.	aqueous
BOC	bioorthogonal chemistry
BODIPY	boron-dipyrromethene
BSA	bovine serum albumin
CB	cannabinoid receptor
CE-LIF	capillary electrophoresis - laser-induced fluorescence
CNS	central nervous system
CuAAC	copper(I)-catalyzed azide-alkyne [2 + 3] cycloaddition
DAGL	diacylglycerol lipase
Da	dalton
DCE	1,2-dichloroethane
DCM	dichloromethane (CH_2Cl_2)
DDA	data-dependent acquisition
DDQ	2,3-dichloro-5,6-dicyano-p-benzoquinone
DFT	density functional theory
DIA	data-independent acquisition
DIPEA	<i>N,N</i> -diisopropylethylamine
DMAP	4-(dimethylamino)pyridine
DMF	<i>N,N</i> -dimethylformamide
DMSO	dimethyl sulfoxide ($(\text{CH}_3)_2\text{SO}$)
DNA	deoxyribonucleic acid
DTT	1,4-dithiothreitol
ECS	endocannabinoid system
EDC	1-ethyl-3-(3-dimethylaminopropyl)carbodiimide
ESI	electrospray ionization
EtOAc	ethyl acetate
FA	formic acid (HCOOH)
FAAH	fatty acid amide hydrolase
FDR	false discovery rate
FluoPol	fluorescence polarization
FP	fluorophosphonate
<i>g</i>	<i>g</i> force (relative centrifugal force)
GluFib	[Glu ¹]-fibrinopeptide B
h	hour
HEPES	4-(2-hydroxyethyl)piperazine-1-ethanesulfonic acid
HPLC	high-performance liquid chromatography
HRMS	high-resolution mass spectrometry
HRP	horseradish peroxidase
IAA	iodoacetamide

IEDDA	inverse electron-demand Diels-Alder
IMS	ion mobility separation
KO	knockout
l	liquid
LC	liquid chromatography
MAGL	monoacylglycerol lipase
min	minutes
MS	mass spectrometry
<i>m/z</i>	mass divided by charge number
NAAA	N-acylethanolamine-hydrolyzing acid amidase
NAE	N-acyl ethanolamide
NAPE	N-arachidonoyl phosphatidylethanolamine
NMR	nuclear magnetic resonance
NPC	Niemann-Pick type C
o/n	overnight
PAGE	polyacrylamide gel electrophoresis
PBS	phosphate buffered saline
PE	phosphatidylethanolamine
PEI	polyethylenimine
PLA2G4E	phospholipase A2 group IVE
PLA/AT	phospholipase A/acyltransferase
PLC	phospholipase C
PLD	phospholipase D
PTM	post-translational modification
PTPN22	protein-tyrosine phosphatase non-receptor type 22
qTOF	quadrupole time-of-flight
R_t	retardation factor
rpm	revolutions per minute
rt	room temperature (18 - 24 °C)
sat.	saturated
SDS	sodium dodecyl sulfate
sec	seconds
SHIP1	SH2 domain-containing inositol 5'-phosphatase
sPLA2	secretory phospholipase A2
TBS	tris buffered saline
TFA	trifluoroacetic acid (CF ₃ COOH)
THC	Δ ⁹ -tetrahydrocannabinol
THF	tetrahydrofuran
THL	tetrahydrolipstatin
TLC	thin-layer chromatography
TMS	trimethylsilyl (CH ₃ Si-)
tris	2-amino-2-(hydroxymethyl)propane-1,3-diol
v	volume
w	weight
WT	wildtype

