Liam A Mcdonnell

List of Publications by Year
in descending order

102 papers	6,334 citations	66343 42 h-index	69250 77 g-index
104 all docs	104 docs citations	104 times ranked	5998 citing authors

#	Article	IF	Citations
1	Imaging mass spectrometry. Mass Spectrometry Reviews, 2007, 26, 606-643.	5.4	980
2	High-Spatial Resolution Mass Spectrometric Imaging of Peptide and Protein Distributions on a Surface. Analytical Chemistry, 2004, 76, 5339-5344.	6.5	246
3	High-mass-resolution MALDI mass spectrometry imaging of metabolites from formalin-fixed paraffin-embedded tissue. Nature Protocols, 2016, 11, 1428-1443.	12.0	190
4	Subcellular imaging mass spectrometry of brain tissue. Journal of Mass Spectrometry, 2005, 40, 160-168.	1.6	173
5	Determination of the Nature of Naphthenic Acids Present in Crude Oils Using Nanospray Fourier Transform Ion Cyclotron Resonance Mass Spectrometry:Â The Continued Battle Against Corrosion. Analytical Chemistry, 2003, 75, 860-866.	6.5	159
6	Linkage-Specific <i>in Situ</i> Sialic Acid Derivatization for N-Glycan Mass Spectrometry Imaging of Formalin-Fixed Paraffin-Embedded Tissues. Analytical Chemistry, 2016, 88, 5904-5913.	6.5	158
7	Data-driven identification of prognostic tumor subpopulations using spatially mapped t-SNE of mass spectrometry imaging data. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 12244-12249.	7.1	154
8	Imaging of peptides in the rat brain using MALDI-FTICR mass spectrometry. Journal of the American Society for Mass Spectrometry, 2007, 18, 145-151.	2.8	144
9	N-glycosylation of Colorectal Cancer Tissues. Molecular and Cellular Proteomics, 2012, 11, 571-585.	3.8	144
10	Peptide and protein imaging mass spectrometry in cancer research. Journal of Proteomics, 2010, 73, 1921-1944.	2.4	143
11	Ultra-High Mass Resolution MALDI Imaging Mass Spectrometry of Proteins and Metabolites in a Mouse Model of Glioblastoma. Scientific Reports, 2017, 7, 603.	3.3	134
12	Effect of Local Matrix Crystal Variations in Matrix-Assisted Ionization Techniques for Mass Spectrometry. Analytical Chemistry, 2003, 75, 2333-2341.	6.5	121
13	Imaging mass spectrometry statistical analysis. Journal of Proteomics, 2012, 75, 4962-4989.	2.4	117
14	<i>De novo</i> discovery of phenotypic intratumour heterogeneity using imaging mass spectrometry. Journal of Pathology, 2015, 235, 3-13.	4.5	116
15	MALDI imaging and profiling MS of higher mass proteins from tissue. Journal of the American Society for Mass Spectrometry, 2010, 21, 1922-1929.	2.8	110
16	Imaging mass spectrometry at cellular length scales. Nature Protocols, 2007, 2, 1185-1196.	12.0	108
17	High-resolution MALDI imaging mass spectrometry allows localization of peptide distributions at cellular length scales in pituitary tissue sections. International Journal of Mass Spectrometry, 2007, 260, 203-211.	1.5	107
18	Immunoglobulin G Glycopeptide Profiling by Matrix-Assisted Laser Desorption Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry. Analytical Chemistry, 2010, 82, 1073-1081.	6.5	106

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19	Why don'€™t biologists use SIMS?. Applied Surface Science, 2006, 252, 6827-6835.	6.1	104
20	Current State and Future Challenges of Mass Spectrometry Imaging for Clinical Research. Analytical Chemistry, 2015, 87, 6426-6433.	6.5	98
21	Imaging mass spectrometry of myxoid sarcomas identifies proteins and lipids specific to tumour type and grade, and reveals biochemical intratumour heterogeneity. Journal of Pathology, 2010, 222, 400-409.	4.5	96
22	Multiple Statistical Analysis Techniques Corroborate Intratumor Heterogeneity in Imaging Mass Spectrometry Datasets of Myxofibrosarcoma. PLoS ONE, 2011, 6, e24913.	2.5	89
23	Pro-inflammatory pattern of IgG1 Fc glycosylation in multiple sclerosis cerebrospinal fluid. Journal of Neuroinflammation, 2015, 12, 235.	7.2	86
24	Multimodal Mass Spectrometry Imaging of N-Glycans and Proteins from the Same Tissue Section. Analytical Chemistry, 2016, 88, 7745-7753.	6.5	86
25	Mass spectrometry imaging of amino neurotransmitters: a comparison of derivatization methods and application in mouse brain tissue. Metabolomics, 2016, 12, 30.	3.0	80
26	Mass Spectrometry Image Correlation: Quantifying Colocalization. Journal of Proteome Research, 2008, 7, 3619-3627.	3.7	79
27	Imaging mass spectrometry data reduction: Automated feature identification and extraction. Journal of the American Society for Mass Spectrometry, 2010, 21, 1969-1978.	2.8	76
28	5-methylthiopentose: a new substituent on lipoarabinomannan in Mycobacterium tuberculosis. Journal of Molecular Biology, 2002, 316, 89-100.	4.2	74
29	Multicenter Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry Imaging (MALDI MSI) Identifies Proteomic Differences in Breast-Cancer-Associated Stroma. Journal of Proteome Research, 2014, 13, 4730-4738.	3.7	72
30	Higher sensitivity secondary ion mass spectrometry of biological molecules for high resolution, chemically specific imaging. Journal of the American Society for Mass Spectrometry, 2006, 17, 1195-1202.	2.8	67
31	Design and Performance of a Novel Interface for Combined Matrix-Assisted Laser Desorption Ionization at Elevated Pressure and Electrospray Ionization with Orbitrap Mass Spectrometry. Analytical Chemistry, 2017, 89, 7493-7501.	6.5	65
32	Automatic Generic Registration of Mass Spectrometry Imaging Data to Histology Using Nonlinear Stochastic Embedding. Analytical Chemistry, 2014, 86, 9204-9211.	6.5	62
33	Electron capture dissociation at low temperatures reveals selective dissociations. Journal of the American Society for Mass Spectrometry, 2004, 15, 1869-1873.	2.8	58
34	Automatic Registration of Mass Spectrometry Imaging Data Sets to the Allen Brain Atlas. Analytical Chemistry, 2014, 86, 3947-3954.	6.5	58
35	Human Plasma N-glycosylation as Analyzed by Matrix-Assisted Laser Desorption/Ionization-Fourier Transform Ion Cyclotron Resonance-MS Associates with Markers of Inflammation and Metabolic Health. Molecular and Cellular Proteomics, 2017, 16, 228-242.	3.8	58
36	Mass Spectrometry Imaging, Laser Capture Microdissection, and LC-MS/MS of the Same Tissue Section. Journal of Proteome Research, 2017, 16, 2993-3001.	3.7	58

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37	MALDIâ€TOFâ€MS analysis of sialylated glycans and glycopeptides using 4â€chloroâ€Î±â€cyanocinnamic acid matrix. Proteomics, 2012, 12, 1337-1348.	2.2	52
38	Discussion point: reporting guidelines for mass spectrometry imaging. Analytical and Bioanalytical Chemistry, 2015, 407, 2035-2045.	3.7	51
39	A mini-review of mass spectrometry using high-performance FTICR-MS methods. Analytical and Bioanalytical Chemistry, 2004, 378, 1048-1058.	3.7	49
40	A novel peptidomics approach to detect markers of Alzheimerâ€™s disease in cerebrospinal fluid. Methods, 2012, 56, 500-507.	3.8	46
41	Quality of surface: The influence of sample preparation on MS-based biomolecular tissue imaging with MALDI-MS and (ME-)SIMS. Applied Surface Science, 2008, 255, 1289-1297.	6.1	44
42	Comprehensive Analysis of the Mouse Brain Proteome Sampled in Mass Spectrometry Imaging. Analytical Chemistry, 2015, 87, 1867-1875.	6.5	44
43	MSiMass List: A Public Database of Identifications for Protein MALDI MS Imaging. Journal of Proteome Research, 2014, 13, 1138-1142.	3.7	40
44	Round robin study of formalin-fixed paraffin-embedded tissues in mass spectrometry imaging. Analytical and Bioanalytical Chemistry, 2018, 410, 5969-5980.	3.7	39
45	Set of Novel Automated Quantitative Microproteomics Protocols for Small Sample Amounts and Its Application to Kidney Tissue Substructures. Journal of Proteome Research, 2016, 15, 4722-4730.	3.7	38
46	Infrared Mass Spectrometric Imaging below the Diffraction Limit. Journal of Proteome Research, 2005, 4, 671-673.	3.7	37
47	Fast and automated large-area imaging MALDI mass spectrometry in microprobe and microscope mode. International Journal of Mass Spectrometry, 2009, 285, 19-25.	1.5	37
48	Prognostic Metabolite Biomarkers for Soft Tissue Sarcomas Discovered by Mass Spectrometry Imaging. Journal of the American Society for Mass Spectrometry, 2017, 28, 376-383.	2.8	37
49	Interactive Visual Exploration of 3D Mass Spectrometry Imaging Data Using Hierarchical Stochastic Neighbor Embedding Reveals Spatiomolecular Structures at Full Data Resolution. Journal of Proteome Research, 2018, 17, 1054-1064.	3.7	37
50	Imaging mass spectrometry to visualize biomolecule distributions in mouse brain tissue following hemispheric cortical spreading depression. Journal of Proteomics, 2012, 75, 5027-5035.	2.4	35
51	Automated, feature-based image alignment for high-resolution imaging mass spectrometry of large biological samples. Journal of the American Society for Mass Spectrometry, 2008, 19, 823-832.	2.8	34
52	Using Matrix Peaks To Map Topography:Â Increased Mass Resolution and Enhanced Sensitivity in Chemical Imaging. Analytical Chemistry, 2003, 75, 4373-4381.	6.5	33
53	Automated imaging MS: Toward high throughput imaging mass spectrometry. Journal of Proteomics, 2010, 73, 1279-1282.	2.4	32
54	Highâ€grade sarcoma diagnosis and prognosis: Biomarker discovery by mass spectrometry imaging. Proteomics, 2016, 16, 1802-1813.	2.2	31

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55	Mass spectrometry imaging shows major derangements in neurogranin and in purine metabolism in the triple-knockout 3Ã—Tg Alzheimer mouse model. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2017, 1865, 747-754.	2.3	31
56	Tools and strategies for visualization of large image data sets in high-resolution imaging mass spectrometry. Review of Scientific Instruments, 2007, 78, 053716.	1.3	29
57	30Î¼m spatial resolution protein MALDI MSI: In-depth comparison of five sample preparation protocols applied to human healthy and atherosclerotic arteries. Journal of Proteomics, 2014, 108, 465-468.	2.4	29
58	Histology-Guided High-Resolution Matrix-Assisted Laser Desorption Ionization Mass Spectrometry Imaging. Analytical Chemistry, 2015, 87, 11978-11983.	6.5	29
59	Towards imaging metabolic pathways in tissues. Analytical and Bioanalytical Chemistry, 2015, 407, 2167-2176.	3.7	29
60	Spatial Autocorrelation in Mass Spectrometry Imaging. Analytical Chemistry, 2016, 88, 5871-5878.	6.5	29
61	Molecular anatomy of ascending aorta in atherosclerosis by MS Imaging: Specific lipid and protein patterns reflect pathology. Journal of Proteomics, 2015, 126, 245-251.	2.4	27
62	Large-Scale Mass Spectrometry Imaging Investigation of Consequences of Cortical Spreading Depression in a Transgenic Mouse Model of Migraine. Journal of the American Society for Mass Spectrometry, 2015, 26, 853-861.	2.8	27
63	Design and performance of a new FT-ICR cell operating at a temperature range of 77â€"438 K. International Journal of Mass Spectrometry, 2004, 231, 37-45.	1.5	26
64	An External Matrix-Assisted Laser Desorption Ionization Source for Flexible FT-ICR Mass Spectrometry Imaging with Internal Calibration on Adjacent Samples. Journal of the American Society for Mass Spectrometry, 2011, 22, 130-137.	2.8	25
65	Assessing the potential of sputtered gold nanolayers in mass spectrometry imaging for metabolomics applications. PLoS ONE, 2018, 13, e0208908.	2.5	25
66	Quantitative Microproteomics Based Characterization of the Central and Peripheral Nervous System of a Mouse Model of Krabbe Disease. Molecular and Cellular Proteomics, 2019, 18, 1227-1241.	3.8	25
67	Combined infrared multiphoton dissociation and electron-capture dissociation using co-linear and overlapping beams in Fourier transform ion cyclotron resonance mass spectrometry. Rapid Communications in Mass Spectrometry, 2006, 20, 1838-1844.	1.5	24
68	Going forward: Increasing the accessibility of imaging mass spectrometry. Journal of Proteomics, 2012, 75, 5113-5121.	2.4	24
69	Imaging Mass Spectrometry-based Molecular Histology Differentiates Microscopically Identical and Heterogeneous Tumors. Journal of Proteome Research, 2013, 12, 1847-1855.	3.7	24
70	Ultra-high resolution MALDI-FTICR-MSI analysis of intact proteins in mouse and human pancreas tissue. International Journal of Mass Spectrometry, 2019, 437, 10-16.	1.5	24
71	An experimental study of the gas-phase reactions of the NO3 radical with pent-1-ene, hex-1-ene and hept-1-ene. Physical Chemistry Chemical Physics, 1999, 1, 2681-2685.	2.8	23
72	Precise Anatomic Localization of Accumulated Lipids in **_Mfp2_** Deficient Murine Brains Through Automated Registration of SIMS Images to the Allen Brain Atlas. Journal of the American Society for Mass Spectrometry, 2015, 26, 948-957.	2.8	23

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73	Characterization of Degraded Proteins in Paintings Using Bottom-Up Proteomic Approaches: New Strategies for Protein Digestion and Analysis of Data. Analytical Chemistry, 2018, 90, 6403-6408.	6.5	23
74	Brain Region-Specific Dynamics of On-Tissue Protein Digestion Using MALDI Mass Spectrometry Imaging. Journal of Proteome Research, 2015, 14, 5348-5354.	3.7	22
75	Funnel‑freezing versus heat‑stabilization for the visualization of metabolites by mass spectrometry imaging in a mouse stroke model. Proteomics, 2016, 16, 1652-1659.	2.2	22
76	rMSIproc: an R package for mass spectrometry imaging data processing. Bioinformatics, 2020, 36, 3618-3619.	4.1	21
77	Molecular signatures of tumor progression in myxoid liposarcoma identified by N-glycan mass spectrometry imaging. Laboratory Investigation, 2020, 100, 1252-1261.	3.7	20
78	SIMION analysis of a high performance linear accumulation octopole with enhanced ejection capabilities. International Journal of Mass Spectrometry, 2005, 244, 135-143.	1.5	18
79	Mass Spectrometry Imaging as a Tool to Investigate Region Specific Lipid Alterations in Symptomatic Human Carotid Atherosclerotic Plaques. Metabolites, 2021, 11, 250.	2.9	16
80	Mass spectrometry in demonstrating the site-specific nitration of hen egg white lysozyme by an improved electrochemical method. Analytical Biochemistry, 2006, 356, 171-181.	2.4	15
81	Spatial epi-proteomics enabled by histone post-translational modification analysis from low-abundance clinical samples. Clinical Epigenetics, 2021, 13, 145.	4.1	15
82	A Theoretical Investigation of the Kinetic Energy of Ions Trapped in a Radio-Frequency Hexapole Ion Trap. European Journal of Mass Spectrometry, 2002, 8, 181-189.	1.0	14
83	High Speed Data Processing for Imaging MS-Based Molecular Histology Using Graphical Processing Units. Journal of the American Society for Mass Spectrometry, 2012, 23, 745-752.	2.8	14
84	Molecular histology of arteries: mass spectrometry imaging as a novel <i>ex vivo</i> tool to investigate atherosclerosis. Expert Review of Proteomics, 2016, 13, 69-81.	3.0	14
85	Mass Spectrometry Imaging of Metabolites. Methods in Molecular Biology, 2018, 1730, 345-357.	0.9	14
86	Lipid and protein maps defining arterial layers in atherosclerotic aorta. Data in Brief, 2015, 4, 328-331.	1.0	13
87	In-Source Decay and Pseudo-MS³ of Peptide and Protein Ions Using Liquid AP-MALDI. Journal of the American Society for Mass Spectrometry, 2016, 27, 2075-2079.	2.8	13
88	Mass spectrometry imaging: How will it affect clinical research in the future?. Expert Review of Proteomics, 2018, 15, 709-716.	3.0	13
89	Proteomics analysis of serum small extracellular vesicles for the longitudinal study of a glioblastoma multiforme mouse model. Scientific Reports, 2020, 10, 20498.	3.3	13
90	Hybrid Imaging Labels: Providing the Link Between Mass Spectrometry-Based Molecular Pathology and Theranostics. Theranostics, 2017, 7, 624-633.	10.0	12

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91	Sustained Off-Resonance Irradiation Collision-Induced Dissociation of Linear, Substituted and Cyclic Polyesters Using a 9.4 T Fourier Transform Ion Cyclotron Resonance Mass Spectrometer. European Journal of Mass Spectrometry, 2003, 9, 117-128.	1.0	11
92	An experimental guideline for the analysis of histologically heterogeneous tumors by MALDI-TOF mass spectrometry imaging. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2017, 1865, 957-966.	2.3	11
93	Nitromatrix provides improved LC–MALDI signals and more protein identifications. Proteomics, 2009, 9, 1662-1671.	2.2	10
94	Ultraviolet Photodissociation of ESI- and MALDI-Generated Protein Ions on a Q-Exactive Mass Spectrometer. Journal of Proteome Research, 2018, 18, 557-564.	3.7	9
95	Longitudinal Bottom-Up Proteomics of Serum, Serum Extracellular Vesicles, and Cerebrospinal Fluid Reveals Candidate Biomarkers for Early Detection of Glioblastoma in a Murine Model. Molecules, 2021, 26, 5992.	3.8	8
96	Synaptic Vesicles Dynamics in Neocortical Epilepsy. Frontiers in Cellular Neuroscience, 2020, 14, 606142.	3.7	7
97	Gas-phase reaction dynamics studied by ion imaging. , 1998, 33, 415-428.		6
98	High nuclear expression of proteasome activator complex subunit 1 predicts poor survival in soft tissue leiomyosarcomas. Clinical Sarcoma Research, 2016, 6, 17.	2.3	4
99	Preface. Journal of Proteomics, 2012, 75, 4881-4882.	2.4	2
100	Mass Spectrometry Imaging in Proteomics and Metabolomics. Comprehensive Analytical Chemistry, 2014, 63, 159-185.	1.3	2
101	Automatic registration of imaging mass spectrometry data to the Allen Brain Atlas transcriptome. , 2014, , .		2
102	Isolation and Proteomic Analysis of Mouse Serum Small Extracellular Vesicles for Individual Subject Analysis. Methods in Molecular Biology, 2022, 2504, 41-54.	0.9	0