Matthew D Hirschey

List of Publications by Year
in descending order

90 papers	13,973 citations	50170 46 h-index	56606 83 g-index
99 all docs	99 docs citations	99 times ranked	16925 citing authors

#	Article	IF	Citations
1	SIRT3 regulates mitochondrial fatty-acid oxidation by reversible enzyme deacetylation. Nature, 2010, 464, 121-125.	13.7	1,388
2	Suppression of Oxidative Stress by Î²-Hydroxybutyrate, an Endogenous Histone Deacetylase Inhibitor. Science, 2013, 339, 211-214.	6.0	1,264
3	Calorie Restriction Reduces Oxidative Stress by SIRT3-Mediated SOD2 Activation. Cell Metabolism, 2010, 12, 662-667.	7.2	1,142
4	Mammalian Sir2 Homolog SIRT3 Regulates Global Mitochondrial Lysine Acetylation. Molecular and Cellular Biology, 2007, 27, 8807-8814.	1.1	1,097
5	SIRT3 Deficiency and Mitochondrial Protein Hyperacetylation Accelerate the Development of the Metabolic Syndrome. Molecular Cell, 2011, 44, 177-190.	4.5	691
6	Lysine Glutarylation Is a Protein Posttranslational Modification Regulated by SIRT5. Cell Metabolism, 2014, 19, 605-617.	7.2	647
7	Sirtuin regulation of mitochondria: energy production, apoptosis, and signaling. Trends in Biochemical Sciences, 2010, 35, 669-675.	3.7	549
8	SIRT3 Deacetylates Mitochondrial 3-Hydroxy-3-Methylglutaryl CoA Synthase 2 and Regulates Ketone Body Production. Cell Metabolism, 2010, 12, 654-661.	7.2	418
9	Sirtuin-3 (Sirt3) regulates skeletal muscle metabolism and insulin signaling via altered mitochondrial oxidation and reactive oxygen species production. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 14608-14613.	3.3	403
10	Metabolic Regulation by Lysine Malonylation, Succinylation, and Glutarylation. Molecular and Cellular Proteomics, 2015, 14, 2308-2315.	2.5	370
11	Nonenzymatic Protein Acylation as a Carbon Stress Regulated by Sirtuin Deacylases. Molecular Cell, 2014, 54, 5-16.	4.5	293
12	Lipids Reprogram Metabolism to Become a Major Carbon Source for Histone Acetylation. Cell Reports, 2016, 17, 1463-1472.	2.9	266
13	Dietary Restriction and AMPK Increase Lifespan via Mitochondrial Network and Peroxisome Remodeling. Cell Metabolism, 2017, 26, 884-896.e5.	7.2	265
14	SIRT4 Is a Lysine Deacylase that Controls Leucine Metabolism and Insulin Secretion. Cell Metabolism, 2017, 25, 838-855.e15.	7.2	259
15	Dysregulated metabolism contributes to oncogenesis. Seminars in Cancer Biology, 2015, 35, S129-S150.	4.3	225
16	Mitochondria, Energetics, Epigenetics, and Cellular Responses to Stress. Environmental Health Perspectives, 2014, 122, 1271-1278.	2.8	221
17	Designing a broad-spectrum integrative approach for cancer prevention and treatment. Seminars in Cancer Biology, 2015, 35, S276-S304.	4.3	220
18	The sirtuins, oxidative stress and aging: an emerging link. Aging, 2013, 5, 144-150.	1.4	209

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19	Mitochondrial protein acetylation regulates metabolism. Essays in Biochemistry, 2012, 52, 23-35.	2.1	207
20	A Class of Reactive Acyl-CoA Species Reveals the Non-enzymatic Origins of Protein Acylation. Cell Metabolism, 2017, 25, 823-837.e8.	7.2	205
21	Mitochondrial sirtuins. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2010, 1804, 1645-1651.	1.1	199
22	Neuronal CRTC-1 Governs Systemic Mitochondrial Metabolism and Lifespan via a Catecholamine Signal. Cell, 2015, 160, 842-855.	13.5	175
23	Hepatic Insulin Signaling Is Required for Obesity-Dependent Expression of SREBP-1c mRNA but Not for Feeding-Dependent Expression. Cell Metabolism, 2012, 15, 873-884.	7.2	172
24	SIRT3 regulates progression and development of diseases of aging. Trends in Endocrinology and Metabolism, 2015, 26, 486-492.	3.1	167
25	Whole-organism screening for gluconeogenesis identifies activators of fasting metabolism. Nature Chemical Biology, 2013, 9, 97-104.	3.9	161
26	SIRT3 Regulates Mitochondrial Protein Acetylation and Intermediary Metabolism. Cold Spring Harbor Symposia on Quantitative Biology, 2011, 76, 267-277.	2.0	159
27	Role of NAD+ and mitochondrial sirtuins in cardiac and renal diseases. Nature Reviews Nephrology, 2017, 13, 213-225.	4.1	158
28	Sirtuin 3 (SIRT3) Protein Regulates Long-chain Acyl-CoA Dehydrogenase by Deacetylating Conserved Lysines Near the Active Site. Journal of Biological Chemistry, 2013, 288, 33837-33847.	1.6	147
29	Metabolic control by sirtuins and other enzymes that sense NAD+, NADH, or their ratio. Biochimica Et Biophysica Acta - Bioenergetics, 2017, 1858, 991-998.	0.5	138
30	Measurement of Fatty Acid Oxidation Rates in Animal Tissues and Cell Lines. Methods in Enzymology, 2014, 542, 391-405.	0.4	120
31	Mitochondrial Acetylome Analysis in a Mouse Model of Alcohol-Induced Liver Injury Utilizing SIRT3 Knockout Mice. Journal of Proteome Research, 2012, 11, 1633-1643.	1.8	113
32	NRF2 activation promotes the recurrence of dormant tumour cells through regulation of redox and nucleotide metabolism. Nature Metabolism, 2020, 2, 318-334.	5.1	106
33	Nicotinamide mononucleotide requires SIRT3 to improve cardiac function and bioenergetics in a Friedreichâ€™s ataxia cardiomyopathy model. JCI Insight, 2017, 2, .	2.3	96
34	High-Resolution Metabolomics with Acyl-CoA Profiling Reveals Widespread Remodeling in Response to Diet*. Molecular and Cellular Proteomics, 2015, 14, 1489-1500.	2.5	95
35	Old Enzymes, New Tricks: Sirtuins Are NAD+-Dependent De-acylases. Cell Metabolism, 2011, 14, 718-719.	7.2	91
36	Investigating the Sensitivity of NAD+-dependent Sirtuin Deacylation Activities to NADH. Journal of Biological Chemistry, 2016, 291, 7128-7141.	1.6	91

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37	SIRT1 and SIRT3 Deacetylate Homologous Substrates: AceCS1,2 and HMGCS1,2. Aging, 2011, 3, 635-642.	1.4	85
38	Sirtuin 5 is required for mouse survival in response to cardiac pressure overload. Journal of Biological Chemistry, 2017, 292, 19767-19781.	1.6	79
39	SnapShot: Mammalian Sirtuins. Cell, 2014, 159, 956-956.e1.	13.5	74
40	daf-16/FoxO promotes gluconeogenesis and trehalose synthesis during starvation to support survival. ELife, 2017, 6, .	2.8	68
41	SIRT6 Promotes Hepatic Beta-Oxidation via Activation of PPARÎ±. Cell Reports, 2019, 29, 4127-4143.e8.	2.9	68
42	Acetate metabolism and aging: An emerging connection. Mechanisms of Ageing and Development, 2010, 131, 511-516.	2.2	67
43	Acyl-CoA thioesterase-2 facilitates mitochondrial fatty acid oxidation in the liver. Journal of Lipid Research, 2014, 55, 2458-2470.	2.0	64
44	Mechanismâ€Based Inhibitors of the Human Sirtuin 5 Deacylase: Structureâ€"Activity Relationship, Biostructural, and Kinetic Insight. Angewandte Chemie - International Edition, 2017, 56, 14836-14841.	7.2	62
45	Ethanol Metabolism Modifies Hepatic Protein Acylation in Mice. PLoS ONE, 2013, 8, e75868.	1.1	54
46	Reactive Acyl-CoA Species Modify Proteins and Induce Carbon Stress. Trends in Biochemical Sciences, 2018, 43, 369-379.	3.7	50
47	Chapter 8 Acetylation of Mitochondrial Proteins. Methods in Enzymology, 2009, 457, 137-147.	0.4	48
48	Imaging Escherichia coli using functionalized core/shell CdSe/CdS quantum dots. Journal of Biological Inorganic Chemistry, 2006, 11, 663-669.	1.1	46
49	Long-chain Acylcarnitines Reduce Lung Function by Inhibiting Pulmonary Surfactant. Journal of Biological Chemistry, 2015, 290, 23897-23904.	1.6	46
50	Discovering the landscape of protein modifications. Molecular Cell, 2021, 81, 1868-1878.	4.5	43
51	Targeting sirtuins for the treatment of diabetes. Diabetes Management, 2013, 3, 245-257.	0.5	42
52	Phosphoproteomic Profiling of Human Myocardial Tissues Distinguishes Ischemic from Non-Ischemic End Stage Heart Failure. PLoS ONE, 2014, 9, e104157.	1.1	39
53	From the Cover: Arsenite Uncouples Mitochondrial Respiration and Induces a Warburg-like Effect in<i>Caenorhabditis elegans</i>. Toxicological Sciences, 2016, 152, 349-362.	1.4	37
54	Deficiency of the lipid synthesis enzyme, DGAT1, extends longevity in mice. Aging, 2012, 4, 13-27.	1.4	37

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55	Ablation of Sirtuin5 in the postnatal mouse heart results in protein succinylation and normal survival in response to chronic pressure overload. Journal of Biological Chemistry, 2018, 293, 10630-10645.	1.6	31
56	Effect of aerobic training on the host systemic milieu in patients with solid tumours: an exploratory correlative study. British Journal of Cancer, 2015, 112, 825-831.	2.9	28
57	SIRT3 Weighs Heavily in the Metabolic Balance: A New Role for SIRT3 in Metabolic Syndrome. Journals of Gerontology - Series A Biological Sciences and Medical Sciences, 2013, 68, 105-107.	1.7	27
58	Cellular energetics and mitochondrial uncoupling in canine aging. GeroScience, 2019, 41, 229-242.	2.1	27
59	Proteomic Profiling Reveals Adaptive Responses to Surgical Myocardial Ischemiaâ€"Reperfusion in Hibernating Arctic Ground Squirrels Compared to Rats. Anesthesiology, 2016, 124, 1296-1310.	1.3	26
60	Remodeling of the Acetylproteome by SIRT3 Manipulation Fails to Affect Insulin Secretion or Î² Cell Metabolism in the Absence of Overnutrition. Cell Reports, 2018, 24, 209-223.e6.	2.9	26
61	In Vivo Determination of Mitochondrial Function Using Luciferaseâ€Expressing <i>Caenorhabditis elegans</i>: Contribution of Oxidative Phosphorylation, Glycolysis, and Fatty Acid Oxidation to Toxicantâ€Induced Dysfunction. Current Protocols in Toxicology / Editorial Board, Mahin D Maines (editor-in-chief) [et Al], 2016, 69, 25.8.1-25.8.22.	1.1	25
62	Chronic Ethanol Metabolism Inhibits Hepatic Mitochondrial Superoxide Dismutase via Lysine Acetylation. Alcoholism: Clinical and Experimental Research, 2017, 41, 1705-1714.	1.4	24
63	Progressive mitochondrial protein lysine acetylation and heart failure in a model of Friedreichâ€™s ataxia cardiomyopathy. PLoS ONE, 2017, 12, e0178354.	1.1	22
64	Loss of sirtuin 4 leads to elevated glucoseâ€and leucineâ€stimulated insulin levels and accelerated ageâ€induced insulin resistance in multiple murine genetic backgrounds. Journal of Inherited Metabolic Disease, 2018, 41, 59-72.	1.7	19
65	Quantifying Competition among Mitochondrial Protein Acylation Events Induced by Ethanol Metabolism. Journal of Proteome Research, 2019, 18, 1513-1531.	1.8	17
66	A cell-nonautonomous mechanism of yeast chronological aging regulated by caloric restriction and one-carbon metabolism. Journal of Biological Chemistry, 2021, 296, 100125.	1.6	17
67	Oxygen Flux Analysis to Understand the Biological Function of Sirtuins. Methods in Molecular Biology, 2013, 1077, 241-258.	0.4	16
68	Early-life mitochondrial DNA damage results in lifelong deficits in energy production mediated by redox signaling in Caenorhabditis elegans. Redox Biology, 2021, 43, 102000.	3.9	15
69	Multiple metabolic changes mediate the response of Caenorhabditis elegans to the complex I inhibitor rotenone. Toxicology, 2021, 447, 152630.	2.0	14
70	Investigating RNA expression profiles altered by nicotinamide mononucleotide therapy in a chronic model of alcoholic liver disease. Human Genomics, 2019, 13, 65.	1.4	13
71	Fructose and glucose can regulate mammalian target of rapamycin complex 1 and lipogenic gene expression via distinct pathways. Journal of Biological Chemistry, 2018, 293, 2006-2014.	1.6	12
72	Measuring fatty acid oxidation in tissue homogenates. Protocol Exchange, 0, , .	0.3	10

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73	SIRT3 Directs Carbon Traffic in Muscle to Promote Glucose Control. Diabetes, 2015, 64, 3058-3060.	0.3	8
74	Sirtuin 5 Is Regulated by the SCF^{Cyclin F} Ubiquitin Ligase and Is Involved in Cell Cycle Control. Molecular and Cellular Biology, 2021, 41, .	1.1	8
75	Mechanismâ€Based Inhibitors of the Human Sirtuin 5 Deacylase: Structureâ€“Activity Relationship, Biostructural, and Kinetic Insight. Angewandte Chemie, 2017, 129, 15032-15037.	1.6	7
76	Statin therapy inhibits fatty acid synthase via dynamic protein modifications. Nature Communications, 2022, 13, 2542.	5.8	7
77	Sensing Mitochondrial Acetyl-CoA to Tune Respiration. Trends in Endocrinology and Metabolism, 2019, 30, 1-3.	3.1	5
78	Deglutarylation of glutaryl-CoA dehydrogenase by deacylating enzyme SIRT5 promotes lysine oxidation in mice. Journal of Biological Chemistry, 2022, 298, 101723.	1.6	5
79	HINT2 and fatty liver disease: Mitochondrial protein hyperacetylation gives a hint?. Hepatology, 2013, 57, 1681-1683.	3.6	3
80	A Prob(e)able Route to Lysine Acylation. Cell Chemical Biology, 2017, 24, 126-128.	2.5	3
81	Deacetylation by SIRT3 Relieves Inhibition of Mitochondrial Protein Function. , 2016, , 105-138.		3
82	Î²-Cell-specific ablation of sirtuin 4 does not affect nutrient-stimulated insulin secretion in mice. American Journal of Physiology - Endocrinology and Metabolism, 2020, 319, E805-E813.	1.8	2
83	Mitochondrial Acetylomic Analysis in a Mouse Model of Alcohol-Induced Liver Injury Utilizing SIRT3 Knockout Mice. Free Radical Biology and Medicine, 2011, 51, S19-S20.	1.3	1
84	Lab life â€” rebuild it better after coronavirus lockdowns ease. Nature, 2020, 582, 184-184.	13.7	1
85	Generating Mammalian Sirtuin Tools for Protein-Interaction Analysis. Methods in Molecular Biology, 2013, 1077, 69-78.	0.4	0
86	Loss of SIRT3 leads to a compensatory shift in cellular metabolism promoting cancer cell growth. Cancer & Metabolism, 2014, 2, .	2.4	0
87	Frontispiz: Mechanismâ€Based Inhibitors of the Human Sirtuin 5 Deacylase: Structureâ€“Activity Relationship, Biostructural, and Kinetic Insight. Angewandte Chemie, 2017, 129, .	1.6	0
88	Reactive Acyl-CoA Species and Deacylation by the Mitochondrial Sirtuins. , 2018, , 83-93.		0
89	Intrinsic Mitochondrial Dynamics and Cytoskeletal Properties Underlie Aging Diversity in Dogs. SSRN Electronic Journal, 0, , .	0.4	0
90	Sirtuin 4 controls leucine metabolism and insulin secretion by reversing effects of reactive metabolites. FASEB Journal, 2018, 32, 670.23.	0.2	0