Judy Hirst

List of Publications by Year
in descending order

120 papers	13,257 citations	25014 57 h-index	23514 111 g-index
133 all docs	133 docs citations	133 times ranked	13290 citing authors

#	Article	IF	Citations
1	Cryo-electron microscopy reveals how acetogenins inhibit mitochondrial respiratory complex I. Journal of Biological Chemistry, 2022, 298, 101602.	1.6	19
2	Reverse Electron Transfer by Respiratory Complex I Catalyzed in a Modular Proteoliposome System. Journal of the American Chemical Society, 2022, 144, 6791-6801.	6.6	15
3	Cryo-EM structures define ubiquinone-10 binding to mitochondrial complex I and conformational transitions accompanying Q-site occupancy. Nature Communications, 2022, 13, 2758.	5.8	38
4	Regulation of ATP hydrolysis by the Îµ subunit, Î¶ subunit and Mg-ADP in the ATP synthase of Paracoccus denitrificans. Biochimica Et Biophysica Acta - Bioenergetics, 2021, 1862, 148355.	0.5	13
5	A conserved arginine residue is critical for stabilizing the N2 FeS cluster in mitochondrial complex I. Journal of Biological Chemistry, 2021, 296, 100474.	1.6	7
6	Structural basis for a complex I mutation that blocks pathological ROS production. Nature Communications, 2021, 12, 707.	5.8	71
7	Complexome profile of Toxoplasma gondii mitochondria identifies divergent subunits of respiratory chain complexes including new subunits of cytochrome bc1 complex. PLoS Pathogens, 2021, 17, e1009301.	2.1	39
8	Cork-in-bottle mechanism of inhibitor binding to mammalian complex I. Science Advances, 2021, 7, .	4.7	36
9	Paracoccus denitrificans: a genetically tractable model system for studying respiratory complex I. Scientific Reports, 2021, 11, 10143.	1.6	12
10	Structure of inhibitor-bound mammalian complex I. Nature Communications, 2020, 11, 5261.	5.8	68
11	Mitochondrial complex I structure reveals ordered water molecules for catalysis and proton translocation. Nature Structural and Molecular Biology, 2020, 27, 892-900.	3.6	88
12	Using a chimeric respiratory chain and EPR spectroscopy to determine the origin of semiquinone species previously assigned to mitochondrial complex I. BMC Biology, 2020, 18, 54.	1.7	17
13	Bottom-Up Construction of a Minimal System for Cellular Respiration and Energy Regeneration. ACS Synthetic Biology, 2020, 9, 1450-1459.	1.9	40
14	Hydroxylated Rotenoids Selectively Inhibit the Proliferation of Prostate Cancer Cells. Journal of Natural Products, 2020, 83, 1829-1845.	1.5	13
15	Understanding How the Rate of Câ€"H Bond Cleavage Affects Formate Oxidation Catalysis by a Mo-Dependent Formate Dehydrogenase. Journal of the American Chemical Society, 2020, 142, 12226-12236.	6.6	16
16	Identification of a novel toxicophore in anti-cancer chemotherapeutics that targets mitochondrial respiratory complex I. ELife, 2020, 9, .	2.8	14
17	Reversible and Selective Interconversion of Hydrogen and Carbon Dioxide into Formate by a Semiartificial Formate Hydrogenlyase Mimic. Journal of the American Chemical Society, 2019, 141, 17498-17502.	6.6	32
18	Comment on â€œProtein assemblies ejected directly from native membranes yield complexes for mass spectrometryâ€. Science, 2019, 366, .	6.0	10

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19	Mammalian Respiratory Complex I Through the Lens of Cryo-EM. Annual Review of Biophysics, 2019, 48, 165-184.	4.5	82
20	Structure of the Deactive State of Mammalian Respiratory Complex I. Structure, 2018, 26, 312-319.e3.	1.6	108
21	Deleting the IF ₁ -like <i>Î¶</i> subunit from <i>Paracoccus denitrificans</i> ATP synthase is not sufficient to activate ATP hydrolysis. Open Biology, 2018, 8, 170206.	1.5	19
22	Open questions: respiratory chain supercomplexesâ€"why are they there and what do they do?. BMC Biology, 2018, 16, 111.	1.7	58
23	Mitochondrial Supercomplexes Do Not Enhance Catalysis by Quinone Channeling. Cell Metabolism, 2018, 28, 525-531.e4.	7.2	111
24	An inhibitor of oxidative phosphorylation exploits cancer vulnerability. Nature Medicine, 2018, 24, 1036-1046.	15.2	622
25	Cryo-EM structures of complex I from mouse heart mitochondria in two biochemically defined states. Nature Structural and Molecular Biology, 2018, 25, 548-556.	3.6	202
26	The mechanism of catalysis by type-II NADH:quinone oxidoreductases. Scientific Reports, 2017, 7, 40165.	1.6	45
27	Subunit NDUFV3 is present in two distinct isoforms in mammalian complex I. Biochimica Et Biophysica Acta - Bioenergetics, 2017, 1858, 197-207.	0.5	37
28	Respiratory Complex I in Bos taurus and Paracoccus denitrificans Pumps Four Protons across the Membrane for Every NADH Oxidized. Journal of Biological Chemistry, 2017, 292, 4987-4995.	1.6	69
29	Oxidation-State-Dependent Binding Properties of the Active Site in a Mo-Containing Formate Dehydrogenase. Journal of the American Chemical Society, 2017, 139, 9927-9936.	6.6	69
30	The Enigma of the Respiratory Chain Supercomplex. Cell Metabolism, 2017, 25, 765-776.	7.2	279
31	Fumarate Hydratase Loss Causes Combined Respiratory Chain Defects. Cell Reports, 2017, 21, 1036-1047.	2.9	61
32	Using Hyperfine Electron Paramagnetic Resonance Spectroscopy to Define the Proton-Coupled Electron Transfer Reaction at Feâ€"S Cluster N2 in Respiratory Complex I. Journal of the American Chemical Society, 2017, 139, 16319-16326.	6.6	32
33	Correlating kinetic and structural data on ubiquinone binding and reduction by respiratory complex I. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 12737-12742.	3.3	91
34	A Selfâ€Assembled Respiratory Chain that Catalyzes NADH Oxidation by Ubiquinoneâ€10 Cycling between Complexâ€…I and the Alternative Oxidase. Angewandte Chemie - International Edition, 2016, 55, 728-731.	7.2	37
35	Small-volume potentiometric titrations: EPR investigations of Fe-S cluster N2 in mitochondrial complex I. Journal of Inorganic Biochemistry, 2016, 162, 201-206.	1.5	17
36	Molecular features of biguanides required for targeting of mitochondrial respiratory complex I and activation of AMP-kinase. BMC Biology, 2016, 14, 65.	1.7	65

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37	Structure of mammalian respiratory complex I. Nature, 2016, 536, 354-358.	13.7	477
38	Energy conversion, redox catalysis and generation of reactive oxygen species by respiratory complex I. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, 872-883.	0.5	111
39	Characterization of clinically identified mutations in NDUFV1, the flavin-binding subunit of respiratory complex I, using a yeast model system. Human Molecular Genetics, 2015, 24, 6350-6360.	1.4	48
40	Structure of subcomplex IÎ² of mammalian respiratory complex I leads to new supernumerary subunit assignments. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 12087-12092.	3.3	50
41	Kinetic evidence against partitioning of the ubiquinone pool and the catalytic relevance of respiratory-chain supercomplexes. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 15735-15740.	3.3	149
42	Reversible Interconversion of CO₂ and Formate by a Molybdenum-Containing Formate Dehydrogenase. Journal of the American Chemical Society, 2014, 136, 15473-15476.	6.6	200
43	Effects of metformin and other biguanides on oxidative phosphorylation in mitochondria. Biochemical Journal, 2014, 462, 475-487.	1.7	502
44	Architecture of mammalian respiratory complex I. Nature, 2014, 515, 80-84.	13.7	350
45	A spectrophotometric coupled enzyme assay to measure the activity of succinate dehydrogenase. Analytical Biochemistry, 2013, 442, 19-23.	1.1	49
46	Mitochondrial Complex I. Annual Review of Biochemistry, 2013, 82, 551-575.	5.0	529
47	Investigation of NADH Binding, Hydride Transfer, and NAD⁺ Dissociation during NADH Oxidation by Mitochondrial Complex I Using Modified Nicotinamide Nucleotides. Biochemistry, 2013, 52, 4048-4055.	1.2	32
48	Investigating the function of [2Feâ€“2S] cluster N1a, the off-pathway cluster in complex I, by manipulating its reduction potential. Biochemical Journal, 2013, 456, 139-146.	1.7	44
49	MÃ¶ssbauer Spectroscopy on Respiratory Complex I: The Ironâ€“Sulfur Cluster Ensemble in the NADH-Reduced Enzyme Is Partially Oxidized. Biochemistry, 2012, 51, 149-158.	1.2	43
50	The Deactive Form of Respiratory Complex I from Mammalian Mitochondria Is a Na+/H+ Antiporter. Journal of Biological Chemistry, 2012, 287, 34743-34751.	1.6	74
51	Exploring Interactions between the 49 kDa and ND1 Subunits in Mitochondrial NADH-Ubiquinone Oxidoreductase (Complex I) by Photoaffinity Labeling. Biochemistry, 2011, 50, 6901-6908.	1.2	44
52	The mitochondrial-encoded subunits of respiratory complex I (NADH:ubiquinone oxidoreductase): identifying residues important in mechanism and disease. Biochemical Society Transactions, 2011, 39, 799-806.	1.6	27
53	Why does mitochondrial complex I have so many subunits?. Biochemical Journal, 2011, 437, e1-e3.	1.7	38
54	A ternary mechanism for NADH oxidation by positively charged electron acceptors, catalyzed at the flavin site in respiratory complex I. FEBS Letters, 2011, 585, 2318-2322.	1.3	26

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55	Reversibility and efficiency in electrocatalytic energy conversion and lessons from enzymes. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 14049-14054.	3.3	310
56	Superoxide Is Produced by the Reduced Flavin in Mitochondrial Complex I. Journal of Biological Chemistry, 2011, 286, 18056-18065.	1.6	241
57	Truncation of subunit ND2 disrupts the threefold symmetry of the antiporterâ€like subunits in complex I from higher metazoans. FEBS Letters, 2010, 584, 4247-4252.	1.3	36
58	Direct assignment of EPR spectra to structurally defined iron-sulfur clusters in complex I by double electronâ€“electron resonance. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 1930-1935.	3.3	116
59	The Subunit Composition of Mitochondrial NADH:Ubiquinone Oxidoreductase (Complex I) From Pichia pastoris. Molecular and Cellular Proteomics, 2010, 9, 2318-2326.	2.5	38
60	Towards the molecular mechanism of respiratory complex I. Biochemical Journal, 2010, 425, 327-339.	1.7	158
61	Reduction of Hydrophilic Ubiquinones by the Flavin in Mitochondrial NADH:Ubiquinone Oxidoreductase (Complex I) and Production of Reactive Oxygen Species. Biochemistry, 2009, 48, 2053-2062.	1.2	89
62	Reactions of the Flavin Mononucleotide in Complex I: A Combined Mechanism Describes NADH Oxidation Coupled to the Reduction of APAD⁺, Ferricyanide, or Molecular Oxygen. Biochemistry, 2009, 48, 12005-12013.	1.2	58
63	The respiratory complexes I from the mitochondria of two Pichia species. Biochemical Journal, 2009, 422, 151-159.	1.7	24
64	Reversible interconversion of carbon dioxide and formate by an electroactive enzyme. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 10654-10658.	3.3	472
65	The production of reactive oxygen species by complex I. Biochemical Society Transactions, 2008, 36, 976-980.	1.6	262
66	Production of Reactive Oxygen Species by Complex I (NADH:Ubiquinone Oxidoreductase) from Escherichia coli and Comparison to the Enzyme from Mitochondria. Biochemistry, 2008, 47, 3964-3971.	1.2	109
67	Off-Pathway, Oxygen-Dependent Thiamine Radical in the Krebs Cycle. Journal of the American Chemical Society, 2008, 130, 1662-1668.	6.6	35
68	Reduction of the Ironâˆ’Sulfur Clusters in Mitochondrial NADH:Ubiquinone Oxidoreductase (Complex) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	1.2	45
69	Interaction of the Mitochondria-targeted Antioxidant MitoQ with Phospholipid Bilayers and Ubiquinone Oxidoreductases*. Journal of Biological Chemistry, 2007, 282, 14708-14718.	1.6	213
70	Reevaluating the relationship between EPR spectra and enzyme structure for the ironâ€“sulfur clusters in NADH:quinone oxidoreductase. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 12720-12725.	3.3	73
71	Transhydrogenation Reactions Catalyzed by Mitochondrial NADHâˆ’Ubiquinone Oxidoreductase (Complex I). Biochemistry, 2007, 46, 14250-14258.	1.2	29
72	The Flavoprotein Subcomplex of Complex I (NADH:Ubiquinone Oxidoreductase) from Bovine Heart Mitochondria:Â Insights into the Mechanisms of NADH Oxidation and NAD+Reduction from Protein Film Voltammetryâ€. Biochemistry, 2007, 46, 3454-3464.	1.2	44

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73	Modulation of Heme Redox Potential in the Cytochrome <i>c</i>₆ Family. Journal of the American Chemical Society, 2007, 129, 9468-9475.	6.6	45
74	An iron-sulfur domain of the eukaryotic primase is essential for RNA primer synthesis. Nature Structural and Molecular Biology, 2007, 14, 875-877.	3.6	177
75	Elucidating the mechanisms of coupled electron transfer and catalytic reactions by protein film voltammetry. Biochimica Et Biophysica Acta - Bioenergetics, 2006, 1757, 225-239.	0.5	86
76	ATR-FTIR Redox Difference Spectroscopy of Yarrowia lipolytica and Bovine Complex I. Biochemistry, 2006, 45, 5458-5467.	1.2	23
77	Interactions between Phospholipids and NADH:Ubiquinone Oxidoreductase (Complex I) from Bovine Mitochondriaâ€. Biochemistry, 2006, 45, 241-248.	1.2	188
78	Interpreting the Catalytic Voltammetry of an Adsorbed Enzyme by Considering Substrate Mass Transfer, Enzyme Turnover, and Interfacial Electron Transport. Journal of Physical Chemistry B, 2006, 110, 1394-1404.	1.2	34
79	Investigation of the mechanism of proton translocation by NADH:ubiquinone oxidoreductase (complex I) from bovine heart mitochondria: does the enzyme operate by a Q-cycle mechanism?. Biochemical Journal, 2006, 400, 541-550.	1.7	41
80	The Inhibition of Mitochondrial Complex I (NADH:Ubiquinone Oxidoreductase) by Zn2+. Journal of Biological Chemistry, 2006, 281, 34803-34809.	1.6	67
81	Bovine Complex I Is a Complex of 45 Different Subunits. Journal of Biological Chemistry, 2006, 281, 32724-32727.	1.6	412
82	The mechanism of superoxide production by NADH:ubiquinone oxidoreductase (complex I) from bovine heart mitochondria. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 7607-7612.	3.3	612
83	Energy transduction by respiratory complex I â€" an evaluation of current knowledge. Biochemical Society Transactions, 2005, 33, 525-529.	1.6	71
84	A scalable, GFP-based pipeline for membrane protein overexpression screening and purification. Protein Science, 2005, 14, 2011-2017.	3.1	121
85	The Post-translational Modifications of the Nuclear Encoded Subunits of Complex I from Bovine Heart Mitochondria. Molecular and Cellular Proteomics, 2005, 4, 693-699.	2.5	65
86	Direct Observation of Redox-Linked Histidine Protonation Changes in the Ironâˆ'Sulfur Protein of the Cytochromebc1Complex by ATR-FTIR Spectroscopyâ€. Biochemistry, 2005, 44, 4230-4237.	1.2	63
87	Roles of the Disulfide Bond and Adjacent Residues in Determining the Reduction Potentials and Stabilities of Respiratory-Type Rieske Clustersâ€. Biochemistry, 2005, 44, 7048-7058.	1.2	46
88	Formation and characterization of an all-ferrous Rieske cluster and stabilization of the [2Fe-2S]0 core by protonation. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 10913-10918.	3.3	44
89	Antisymmetric Exchange in [2Feâˆ'2S]1+Clusters:Â EPR of the Rieske Protein fromThermusthermophilusat pH 14. Journal of the American Chemical Society, 2004, 126, 5338-5339.	6.6	26
90	High-Resolution Structure of the Soluble, Respiratory-Type Rieske Protein from Thermus thermophilus:â€‰ Analysis and Comparison. Biochemistry, 2003, 42, 7303-7317.	1.2	96

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91	Mechanisms of Redox-Coupled Proton Transfer in Proteins:Â Role of the Proximal Proline in Reactions of the [3Fe-4S] Cluster inAzotobactervinelandiiFerredoxin Iâ€,â€¡. Biochemistry, 2003, 42, 10589-10599.	1.2	31
92	Reversible Glutathionylation of Complex I Increases Mitochondrial Superoxide Formation. Journal of Biological Chemistry, 2003, 278, 19603-19610.	1.6	357
93	The nuclear encoded subunits of complex I from bovine heart mitochondria. Biochimica Et Biophysica Acta - Bioenergetics, 2003, 1604, 135-150.	0.5	345
94	Reduction Potentials of Rieske Clusters:Â Importance of the Coupling between Oxidation State and Histidine Protonation Stateâ€. Biochemistry, 2003, 42, 12400-12408.	1.2	135
95	Reversible, Electrochemical Interconversion of NADH and NAD+ by the Catalytic (IÎ») Subcomplex of Mitochondrial NADH:Ubiquinone Oxidoreductase (Complex I). Journal of the American Chemical Society, 2003, 125, 6020-6021.	6.6	64
96	The dichotomy of complex I: A sodium ion pump or a proton pump. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 773-775.	3.3	21
97	Analysis of the Subunit Composition of Complex I from Bovine Heart Mitochondria*S. Molecular and Cellular Proteomics, 2003, 2, 117-126.	2.5	337
98	Definition of the Nuclear Encoded Protein Composition of Bovine Heart Mitochondrial Complex I. Journal of Biological Chemistry, 2002, 277, 50311-50317.	1.6	141
99	Breaking and Re-Forming the Disulfide Bond at the High-Potential, Respiratory-Type Rieske [2Fe-2S] Center of Thermus thermophilus:â€‰ Characterization of the Sulfhydryl State by Protein-Film Voltammetry. Biochemistry, 2002, 41, 14054-14065.	1.2	28
100	Redox Properties of the [2Fe-2S] Center in the 24 kDa (NQO2) Subunit of NADH:Ubiquinone Oxidoreductase (Complex I)â€. Biochemistry, 2002, 41, 10056-10069.	1.2	61
101	Detection and interpretation of redox potential optima in the catalytic activity of enzymes. Biochimica Et Biophysica Acta - Bioenergetics, 2002, 1555, 54-59.	0.5	41
102	Initial characterization of the ferric H175G cytochrome c peroxidase cavity mutant using magnetic circular dichroism spectroscopy: phosphate from the buffer as an axial ligand. International Congress Series, 2002, 1233, 25-35.	0.2	0
103	Replacement of the Axial Histidine Ligand with Imidazole in CytochromecPeroxidase. 1. Effects on Structureâ€,â€¡. Biochemistry, 2001, 40, 1265-1273.	1.2	37
104	Replacement of the Axial Histidine Ligand with Imidazole in CytochromecPeroxidase. 2. Effects on Heme Coordination and Functionâ€. Biochemistry, 2001, 40, 1274-1283.	1.2	56
105	Complete Thermodynamic Characterization of Reduction and Protonation of thebc1-type Rieske [2Fe-2S] Center ofThermus thermophilus. Journal of the American Chemical Society, 2001, 123, 9906-9907.	6.6	68
106	GRIM-19, a Cell Death Regulatory Gene Product, Is a Subunit of Bovine Mitochondrial NADH:Ubiquinone Oxidoreductase (Complex I). Journal of Biological Chemistry, 2001, 276, 38345-38348.	1.6	227
107	Atomically defined mechanism for proton transfer to a buried redox centre in a protein. Nature, 2000, 405, 814-817.	13.7	161
108	Unusual Oxidative Chemistry ofN Ï‰-Hydroxyarginine and N-Hydroxyguanidine Catalyzed at an Engineered Cavity in a Heme Peroxidase. Journal of Biological Chemistry, 2000, 275, 8582-8591.	1.6	31

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109	Fast voltammetric studies of the kinetics and energetics of coupled electron-transfer reactions in proteins. Faraday Discussions, 2000, 116, 191-203.	1.6	87
110	Voltammetric studies of bidirectional catalytic electron transport in Escherichia coli succinate dehydrogenase: comparison with the enzyme from beef heart mitochondria. Biochimica Et Biophysica Acta - Bioenergetics, 1999, 1412, 262-272.	0.5	43
111	Very Rapid, Cooperative Two-Electron/Two-Proton Redox Reactions of [3Feâˆ'4S] Clusters:Â Detection and Analysis by Protein-Film Voltammetry. Journal of the American Chemical Society, 1998, 120, 11994-11999.	6.6	37
112	Fast-Scan Cyclic Voltammetry of Protein Films on Pyrolytic Graphite Edge Electrodes:Â Characteristics of Electron Exchange. Analytical Chemistry, 1998, 70, 5062-5071.	3.2	174
113	Kinetics and Mechanism of Redox-Coupled, Long-Range Proton Transfer in an Ironâˆ'Sulfur Protein. Investigation by Fast-Scan Protein-Film Voltammetry. Journal of the American Chemical Society, 1998, 120, 7085-7094.	6.6	104
114	Interpreting the Catalytic Voltammetry of Electroactive Enzymes Adsorbed on Electrodes. Journal of Physical Chemistry B, 1998, 102, 6889-6902.	1.2	139
115	Global Observation of Hydrogen/Deuterium Isotope Effects on Bidirectional Catalytic Electron Transport in an Enzyme:Â Direct Measurement by Protein-Film Voltammetry. Journal of the American Chemical Society, 1997, 119, 7434-7439.	6.6	39
116	Reaction of complex metalloproteins studied by protein-film voltammetry. Chemical Society Reviews, 1997, 26, 169.	18.7	398
117	Electrocatalytic Voltammetry of Succinate Dehydrogenase:Â Direct Quantification of the Catalytic Properties of a Complex Electron-Transport Enzyme. Journal of the American Chemical Society, 1996, 118, 5031-5038.	6.6	105
118	Modelling electrode reactions using the strongly implicit procedure. Journal of Electroanalytical Chemistry, 1995, 383, 13-19.	1.9	42
119	Photoelectrochemical reduction of meta-halonitrobenzenes and related species. Journal of the Chemical Society Perkin Transactions II, 1995, , 1673.	0.9	13
120	Mechanistic Study of Photoelectrochemical Reactions: Phototransient Experiments. The Journal of Physical Chemistry, 1994, 98, 10497-10503.	2.9	8