Thorsten Friedrich

List of Publications by Year
in descending order

124 papers	5,882 citations	81900 39 h-index	76900 74 g-index
150 all docs	150 docs citations	150 times ranked	3973 citing authors

#	Article	IF	Citations
1	The respiratoryâ€chain NADH dehydrogenase (complex I) of mitochondria. FEBS Journal, 1991, 197, 563-576.	0.2	462
2	The Gene Locus of the Proton-translocating NADH : Ubiquinone Oxidoreductase in Escherichia coli. Journal of Molecular Biology, 1993, 233, 109-122.	4.2	316
3	The respiratory complex I of bacteria, archaea and eukarya and its module common with membraneâ€bound multisubunit hydrogenases. FEBS Letters, 2000, 479, 1-5.	2.8	313
4	The protonâ€pumping respiratory complex I of bacteria and mitochondria and its homologue in chloroplasts. FEBS Letters, 1995, 367, 107-111.	2.8	255
5	Isolation and Characterization of the Proton-translocating NADH:ubiquinone Oxidoreductase from Escherichia coli. FEBS Journal, 1995, 230, 538-548.	0.2	254
6	Two binding sites of inhibitors in NADH:ubiquinone oxidoreductase (complex I). Relationship of one site with the ubiquinone-binding site of bacterial glucose:ubiquinone oxidoreductase. FEBS Journal, 1994, 219, 691-698.	0.2	233
7	Consistent structure between bacterial and mitochondrial NADH:ubiquinone oxidoreductase (complex I). Journal of Molecular Biology, 1998, 276, 105-112.	4.2	228
8	Modular Evolution of the Respiratory NADH:Ubiquinone Oxidoreductase and the Origin of its Modules. Journal of Theoretical Biology, 1997, 187, 529-540.	1.7	214
9	The NADH:ubiquinone oxidoreductase (complex I) from Escherichia coli. Biochimica Et Biophysica Acta - Bioenergetics, 1998, 1364, 134-146.	1.0	173
10	Complex I: a chimaera of a redox and conformation-driven proton pump?. Journal of Bioenergetics and Biomembranes, 2001, 33, 169-177.	2.3	149
11	Quantifying the heterogeneity of macromolecular machines by mass photometry. Nature Communications, 2020, 11, 1772.	12.8	146
12	A small isoform of NADH: ubiquinone oxidoreductase (complex I) without mitochondrially encoded subunits is made in chloramphenicol-treated Neurospora crassa. FEBS Journal, 1989, 180, 173-180.	0.2	136
13	The gross structure of the respiratory complex I: a Lego System. Biochimica Et Biophysica Acta - Bioenergetics, 2004, 1608, 1-9.	1.0	127
14	A Kazal-type inhibitor with thrombin specificity from Rhodnius prolixus. Journal of Biological Chemistry, 1993, 268, 16216-22.	3.4	125
15	Identification and characterization of the tungsten-containing class of benzoyl-coenzyme A reductases. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 17687-17692.	7.1	112
16	Single-molecule in vivo imaging of bacterial respiratory complexes indicates delocalized oxidative phosphorylation. Biochimica Et Biophysica Acta - Bioenergetics, 2014, 1837, 811-824.	1.0	111
17	Menaquinone as pool quinone in a purple bacterium. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 8549-8554.	7.1	107
18	FT-IR Spectroscopic Characterization of NADH:Ubiquinone Oxidoreductase (Complex I) from <i>Escherichia coli</i>:â€‰ Oxidation of FeS Cluster N2 is Coupled with the Protonation of an Aspartate or Glutamate Side Chain. Biochemistry, 2000, 39, 10884-10891.	2.5	91

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19	A Novel, Enzymatically Active Conformation of the Escherichia coli NADH:Ubiquinone Oxidoreductase (Complex I). Journal of Biological Chemistry, 2002, 277, 17970-17977.	3.4	88
20	The Escherichia coli NADH:Ubiquinone Oxidoreductase (Complex I) Is a Primary Proton Pump but May Be Capable of Secondary Sodium Antiport. Journal of Biological Chemistry, 2004, 279, 18377-18383.	3.4	88
21	Characterization of the Overproduced NADH Dehydrogenase Fragment of the NADH:Ubiquinone Oxidoreductase (Complex I) from <i>Escherichia coli</i>. Biochemistry, 1998, 37, 1861-1867.	2.5	79
22	Ironâˆ'Sulfur Cluster N7 of the NADH:Ubiquinone Oxidoreductase (Complex I) Is Essential for Stability but Not Involved in Electron Transfer. Biochemistry, 2007, 46, 6588-6596.	2.5	73
23	Identification of Two Tetranuclear FeS Clusters on the Ferredoxin-Type Subunit of NADH:Ubiquinone Oxidoreductase (Complex I). Biochemistry, 2001, 40, 6124-6131.	2.5	72
24	Role of Subunit NuoL for Proton Translocation by Respiratory Complex I. Biochemistry, 2011, 50, 3386-3393.	2.5	68
25	Subunit CydX of <i>Escherichia coli</i> cytochrome <i>bd</i> ubiquinol oxidase is essential for assembly and stability of the diâ€heme active site. FEBS Letters, 2014, 588, 1537-1541.	2.8	68
26	Lambda Red-Mediated Mutagenesis and Efficient Large Scale Affinity Purification of the Escherichia coli NADH:Ubiquinone Oxidoreductase (Complex I). Biochemistry, 2007, 46, 10694-10702.	2.5	67
27	Cytochrome bd Displays Significant Quinol Peroxidase Activity. Scientific Reports, 2016, 6, 27631.	3.3	67
28	Homologous bd oxidases share the same architecture but differ in mechanism. Nature Communications, 2019, 10, 5138.	12.8	65
29	Amphiphilic Copolymer Membranes Promote NADH:Ubiquinone Oxidoreductase Activity: Towards an Electronâ€Transfer Nanodevice. Macromolecular Chemistry and Physics, 2010, 211, 229-238.	2.2	63
30	The Ubiquinone-binding Site in NADH:Ubiquinone Oxidoreductase from Escherichia coli. Journal of Biological Chemistry, 2003, 278, 25731-25737.	3.4	62
31	Electron Tunneling Rates in Respiratory Complexâ€…I Are Tuned for Efficient Energy Conversion. Angewandte Chemie - International Edition, 2015, 54, 2844-2848.	13.8	61
32	Aromatic Amino Acids as Stepping Stones in Charge Transfer in Respiratory Complex I: An Unusual Mechanism Deduced from Atomistic Theory and Bioinformatics. Journal of the American Chemical Society, 2009, 131, 8134-8140.	13.7	57
33	The multitude of ironâ€"sulfur clusters in respiratory complex I. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, 1068-1072.	1.0	57
34	An oxygenase that forms and deoxygenates toxic epoxide. Nature, 2012, 483, 359-362.	27.8	55
35	Overexpression of the <i>Escherichia coli</i> <i>nuo</i>-Operon and Isolation of the Overproduced NADH:Ubiquinone Oxidoreductase (Complex I). Biochemistry, 1999, 38, 16261-16267.	2.5	49
36	Disruption of individual nuo-genes leads to the formation of partially assembled NADH:ubiquinone oxidoreductase (complex I) in Escherichia coli. Biochimica Et Biophysica Acta - Bioenergetics, 2012, 1817, 863-871.	1.0	46

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37	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.	3.7	44
38	Characterization of two novel redox groups in the respiratory NADH:ubiquinone oxidoreductase (complex I). Biochimica Et Biophysica Acta - Bioenergetics, 2000, 1459, 305-309.	1.0	43
39	On the mechanism of respiratory complex I. Journal of Bioenergetics and Biomembranes, 2014, 46, 255-268.	2.3	42
40	Mass Photometry of Membrane Proteins. CheM, 2021, 7, 224-236.	11.7	39
41	Heterologous Production, Isolation, Characterization and Crystallization of a Soluble Fragment of the NADH:Ubiquinone Oxidoreductase (Complex I) from <i>Aquifex aeolicus</i>. Biochemistry, 2008, 47, 13036-13045.	2.5	37
42	Assembly of the Escherichia coli NADH:ubiquinone oxidoreductase (respiratory complex I). Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, 214-223.	1.0	37
43	A mechanism to prevent production of reactive oxygen species by Escherichia coli respiratory complex I. Nature Communications, 2019, 10, 2551.	12.8	37
44	The clerodane diterpene casearin J induces apoptosis of T-ALL cells through SERCA inhibition, oxidative stress, and interference with Notch1 signaling. Cell Death and Disease, 2016, 7, e2070-e2070.	6.3	36
45	Water-Gated Proton Transfer Dynamics in Respiratory Complex I. Journal of the American Chemical Society, 2020, 142, 13718-13728.	13.7	36
46	Biomimetic Environment to Study <i>E. coli</i> Complex I through Surface-Enhanced IR Absorption Spectroscopy. Biochemistry, 2014, 53, 6340-6347.	2.5	34
47	EPR Signals Assigned to Fe/S Cluster N1c of the Escherichia coli NADH:Ubiquinone Oxidoreductase (Complex I) Derive from Cluster N1a. Biochemistry, 2005, 44, 1653-1658.	2.5	33
48	<i>Escherichia coli</i> NADH dehydrogenase I, a minimal form of the mitochondrial complex I. Biochemical Society Transactions, 1993, 21, 998-1001.	3.4	32
49	Involvement of Tyrosines 114 and 139 of Subunit NuoB in the Proton Pathway around Cluster N2 in Escherichia coliNADH:Ubiquinone Oxidoreductase. Journal of Biological Chemistry, 2003, 278, 3055-3062.	3.4	31
50	Formation of a Dinuclear Copper(I) Complex from the <i>Clostridium</i>â€Derived Antibiotic Closthioamide. Angewandte Chemie - International Edition, 2013, 52, 10745-10748.	13.8	31
51	Chloroplast DnaJ-like proteins 3 and 4 (CDJ3/4) from <i>Chlamydomonas reinhardtii</i> contain redox-active Feâ€“S clusters and interact with stromal HSP70B. Biochemical Journal, 2010, 427, 205-215.	3.7	30
52	Organization of the <i><scp>E</scp>scherichia coli</i> aerobic enzyme complexes of oxidative phosphorylation in dynamic domains within the cytoplasmic membrane. MicrobiologyOpen, 2014, 3, 316-326.	3.0	30
53	Effects of the deletion of the Escherichia coli frataxin homologue CyaY on the respiratory NADH:ubiquinone oxidoreductase. BMC Biochemistry, 2007, 8, 13.	4.4	26
54	Ironâ€sulfur cluster carrier proteins involved in the assembly of <i>Escherichia coli</i> NADH:ubiquinone oxidoreductase (complex I). Molecular Microbiology, 2019, 111, 31-45.	2.5	26

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55	Structure of Escherichia coli cytochrome bd-II type oxidase with bound aurachin D. Nature Communications, 2021, 12, 6498.	12.8	25
56	Reduction of the off-pathway iron-sulphur cluster N1a of Escherichia coli respiratory complex I restrains NAD+ dissociation. Scientific Reports, 2017, 7, 8754.	3.3	24
57	Asp563 of the horizontal helix of subunit NuoL is involved in proton translocation by the respiratory complex I. FEBS Letters, 2012, 586, 699-704.	2.8	23
58	Adjacent cysteines are capable of ligating the same tetranuclear ironâ€“sulfur cluster. Proteins: Structure, Function and Bioinformatics, 2004, 56, 556-563.	2.6	21
59	Farâ€•and Midâ€Infrared Spectroscopic Analysis of the Substrateâ€Induced Structural Dynamics of Respiratory Complex I. ChemPhysChem, 2011, 12, 217-224.	2.1	21
60	Mutations in respiratory complex I promote antibiotic persistence through alterations in intracellular acidity and protein synthesis. Nature Communications, 2022, 13, 546.	12.8	21
61	Recent Advances in Structural Studies of Cytochrome bd and Its Potential Application as a Drug Target. International Journal of Molecular Sciences, 2022, 23, 3166.	4.1	21
62	Identification of FeS clusters in the glycyl-radical enzyme benzylsuccinate synthase via EPR and MÃ¶ssbauer spectroscopy. Journal of Biological Inorganic Chemistry, 2012, 17, 49-56.	2.6	20
63	Redox-induced conformational changes within the Escherichia coli NADH ubiquinone oxidoreductase (complex I): An analysis by mutagenesis and FT-IR spectroscopy. Biochimica Et Biophysica Acta - Bioenergetics, 2010, 1797, 659-663.	1.0	18
64	Cysteine scanning reveals minor local rearrangements of the horizontal helix of respiratory complex I. Molecular Microbiology, 2015, 98, 151-161.	2.5	18
65	Inhibition of <i>Escherichia coli</i> Respiratory Complex I by Zn²⁺. Biochemistry, 2014, 53, 6332-6339.	2.5	17
66	The <i>cbb</i> ₃ -type cytochrome oxidase assembly factor CcoG is a widely distributed cupric reductase. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 21166-21175.	7.1	17
67	The long Qâ€loop of <i>EscherichiaÂcoli</i> cytochrome <i>bd</i> oxidase is required for assembly and structural integrity. FEBS Letters, 2020, 594, 1577-1585.	2.8	17
68	Engineering the Respiratory Complex I to Energy-converting NADPH:Ubiquinone Oxidoreductase. Journal of Biological Chemistry, 2011, 286, 34627-34634.	3.4	16
69	Spin labeling of the Escherichia coli NADH ubiquinone oxidoreductase (complex I). Biochimica Et Biophysica Acta - Bioenergetics, 2010, 1797, 1894-1900.	1.0	15
70	Methanoferrodoxin represents a new class of superoxide reductase containing an ironâ€“sulfur cluster. FEBS Journal, 2011, 278, 442-451.	4.7	15
71	Characterization of Two Quinone Radicals in the NADH:Ubiquinone Oxidoreductase from <i>Escherichia coli</i> by a Combined Fluorescence Spectroscopic and Electrochemical Approach. Biochemistry, 2013, 52, 8993-9000.	2.5	14
72	Reactive Oxygen Species Production by <i>Escherichia coli</i> Respiratory Complex I. Biochemistry, 2015, 54, 2799-2801.	2.5	14

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73	Photolysis of Caged Inositol Pyrophosphate InsP8 Directly Modulates Intracellular Ca2+ Oscillations and Controls C2AB Domain Localization. Journal of the American Chemical Society, 2020, 142, 10606-10611.	13.7	13
74	Structure of the peripheral arm of a minimalistic respiratory complex I. Structure, 2022, 30, 80-94.e4.	3.3	13
75	Creation of a gold nanoparticle based electrochemical assay for the detection of inhibitors of bacterial cytochrome bd oxidases. Bioelectrochemistry, 2016, 111, 109-114.	4.6	12
76	A Quinol Anion as Catalytic Intermediate Coupling Proton Translocation With Electron Transfer in E. coli Respiratory Complex I. Frontiers in Chemistry, 2021, 9, 672969.	3.6	12
77	The Rnf complex from the acetogenic bacterium Acetobacterium woodii: Purification and characterization of RnfC and RnfB. Biochimica Et Biophysica Acta - Bioenergetics, 2020, 1861, 148263.	1.0	10
78	CyaC, a redoxâ€regulated adenylate cyclase of <i>Sinorhizobium meliloti</i> with a quinone responsive dihemeâ€B membrane anchor domain. Molecular Microbiology, 2019, 112, 16-28.	2.5	8
79	Structural Basis for Inhibition of ROSâ€Producing Respiratory Complex I by NADHâ€OH. Angewandte Chemie - International Edition, 2021, 60, 27277-27281.	13.8	8
80	A Cobalaminâ€Dependent Radical SAM Enzyme Catalyzes the Unique C_{Î±}â€Methylation of Glutamine in Methylâ€Coenzymeâ€…M Reductase. Angewandte Chemie - International Edition, 2022, 61, .	13.8	8
81	Significance of [2Fe-2S] Cluster N1a for Electron Transfer and Assembly of <i>Escherichia coli</i> Respiratory Complex I. Biochemistry, 2017, 56, 2770-2778.	2.5	7
82	Charge transfer through a fragment of the respiratory complex I and its regulation: an atomistic simulation approach. Physical Chemistry Chemical Physics, 2018, 20, 20023-20032.	2.8	7
83	Visualizing the movement of the amphipathic helix in the respiratory complex I using a nitrile infrared probe and SEIRAS. FEBS Letters, 2020, 594, 491-496.	2.8	7
84	Wide Distribution of Foxicin Biosynthetic Gene Clusters in Streptomyces Strains â€“ An Unusual Secondary Metabolite with Various Properties. Frontiers in Microbiology, 2017, 8, 221.	3.5	6
85	Low cost, microcontroller based heating device for multi-wavelength differential scanning fluorimetry. Scientific Reports, 2018, 8, 1457.	3.3	6
86	Stabilization of the Highly Hydrophobic Membrane Protein, Cytochrome bd Oxidase, on Metallic Surfaces for Direct Electrochemical Studies. Molecules, 2020, 25, 3240.	3.8	6
87	Biochemical consequences of two clinically relevant ND-gene mutations in Escherichia coli respiratory complexÂI. Scientific Reports, 2021, 11, 12641.	3.3	6
88	Identification and optimization of quinolone-based inhibitors against cytochrome bd oxidase using an electrochemical assay. Electrochimica Acta, 2021, 381, 138293.	5.2	6
89	Electrocatalytic evidence of the diversity of the oxygen reaction in the bacterial bd oxidase from different organisms. Biochimica Et Biophysica Acta - Bioenergetics, 2021, 1862, 148436.	1.0	6
90	Respiratory complex I with charge symmetry in the membrane arm pumps protons. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.1	6

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91	Redox cofactors insertion in prokaryotic molybdoenzymes occurs via a conserved folding mechanism. Scientific Reports, 2016, 6, 37743.	3.3	4
92	Infrared spectroscopic studies on reaction induced conformational changes in the NADH ubiquinone oxidoreductase (complex I). Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, 922-927.	1.0	4
93	Die Elektronentunnelraten im Atmungskettenkomplex I sind auf eine effiziente Energiewandlung abgestimmt. Angewandte Chemie, 2015, 127, 2886-2890.	2.0	3
94	On the Mechanism of the Respiratory Complex I. , 2012, , 23-59.		2
95	ErpA is important but not essential for the Fe/S cluster biogenesis of Escherichia coli NADH:ubiquinone oxidoreductase (complex I). Biochimica Et Biophysica Acta - Bioenergetics, 2020, 1861, 148286.	1.0	2
96	The Nâ€terminal domains of the paralogous HycE and NuoCDgovern assembly of the respective formate hydrogenlyase andNADHdehydrogenase complexes. FEBS Open Bio, 2020, 10, 371-385.	2.3	2
97	Detection of ubiquinone radicals in Escherichia coli respiratory complex I. Biochimica Et Biophysica Acta - Bioenergetics, 2012, 1817, S55-S56.	1.0	1
98	Involvement of Acidic Amino Acid Residues in Zn²⁺ Binding to Respiratory Complexâ€…I. ChemBioChem, 2015, 16, 2080-2085.	2.6	1
99	Characterisation of the redox centers of ethylbenzene dehydrogenase. Journal of Biological Inorganic Chemistry, 2021, , 1.	2.6	1
100	The clinically relevant triple mutation in the mtND1 gene inactivates <i>Escherichia coli</i> complex I. FEBS Letters, 2022, 596, 1124-1132.	2.8	1
101	Localization and dynamics of the OXPHOS complexes in Escherichia coli by in-vivo fluorescence microscopy. Biochimica Et Biophysica Acta - Bioenergetics, 2010, 1797, 14.	1.0	0
102	Infrared spectroscopic analysis on the substrate induced conformational flexibility of the NADH:ubiquinone oxidoreductase. Biochimica Et Biophysica Acta - Bioenergetics, 2010, 1797, 16.	1.0	0
103	Structure of a soluble subcomplex of NADH:ubiquinone oxidoreductase from Aquifex aeolicus. Biochimica Et Biophysica Acta - Bioenergetics, 2010, 1797, 18.	1.0	0
104	Surface enhanced infrared absorption spectroscopy (SEIRAS) of complex I and QFR from Escherichia coli. Biochimica Et Biophysica Acta - Bioenergetics, 2010, 1797, 19-20.	1.0	0
105	Affinity of Escherichia coli complex I variants to NADH and NADPH. Biochimica Et Biophysica Acta - Bioenergetics, 2010, 1797, 20-21.	1.0	0
106	Inhibition of the NADH:ubiquinone oxidoreductase (complex I) by Zn2+. Biochimica Et Biophysica Acta - Bioenergetics, 2010, 1797, 23.	1.0	0
107	Site-directed mutagenesis of the NADH binding site of prokaryotic Complex I (NADH:ubiquinone) Tj ETQq1 1 0.784314 rgBT /Overlock Bioenergetics, 2012, 1817, S49-S50.	1.0	0
108	ROS-production by E. coli respiratory complex I. Biochimica Et Biophysica Acta - Bioenergetics, 2012, 1817, S59.	1.0	0

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109	Initial electron transfer steps in complex I. Biochimica Et Biophysica Acta - Bioenergetics, 2012, 1817, S49.	1.0	0
110	An assembly intermediate of E. coli complex I interacts with the inducible lysine decarboxylase. Biochimica Et Biophysica Acta - Bioenergetics, 2012, 1817, S54-S55.	1.0	0
111	EBEC 2012: Combining the multiple facets of bioenergetics. Biochimica Et Biophysica Acta - Bioenergetics, 2012, 1817, 1709-1710.	1.0	0
112	Identification of the ubiquinone-binding site of respiratory complex I. Biochimica Et Biophysica Acta - Bioenergetics, 2012, 1817, S60-S61.	1.0	0
113	In vivo imaging of the supramolecular organization of Escherichia coli OxPhos complexes. Biochimica Et Biophysica Acta - Bioenergetics, 2014, 1837, e83.	1.0	0
114	CydX is a subunit of Escherichia coli cytochrome bd terminal oxidase and essential for assembly and stability of the di-heme active site. Biochimica Et Biophysica Acta - Bioenergetics, 2014, 1837, e98-e99.	1.0	0
115	Structure of the NADH binding site of respiratory complex I. Biochimica Et Biophysica Acta - Bioenergetics, 2014, 1837, e44.	1.0	0
116	Creation of a biomimetic environment for the study of Complex I from Escherichia coli through Surface Enhanced IR Absorption Spectroscopy (SEIRAS). Biochimica Et Biophysica Acta - Bioenergetics, 2014, 1837, e40.	1.0	0
117	Delocalised electron transport and chemiosmosis in Escherichia coli. Biochimica Et Biophysica Acta - Bioenergetics, 2014, 1837, e88.	1.0	0
118	Redox-gated NADH oxidation by complex I. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, e1-e2.	1.0	0
119	Cytochrome bd oxidase protects E . coli against oxidative stress: On the trails of hydrogen peroxide decomposition. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, e87.	1.0	0
120	A bacterial model to study Leigh syndrome. Biochimica Et Biophysica Acta - Bioenergetics, 2016, 1857, e103.	1.0	0
121	Assembly of the Iron-Sulfur Clusters of Complex I in Escherichia coli. Biochimica Et Biophysica Acta - Bioenergetics, 2018, 1859, e42.	1.0	0
122	Structural Basis for Inhibition of ROSâ€Producing Respiratory Complex I by NADHâ€OH. Angewandte Chemie, 0, , .	2.0	0
123	A Cobalaminâ€Dependent Radical SAM Enzyme Catalyzes the Unique CÎ±â€Methylation of Glutamine in Methylâ€Coenzyme M Reductase. Angewandte Chemie, 0, , .	2.0	0
124	The gene order in the nuo-operon is not essential for the assembly of E. coli complex I. Biochimica Et Biophysica Acta - Bioenergetics, 2022, , 148592.	1.0	0