Rachel Nechushtai

List of Publications by Year
in descending order

98 papers	5,637 citations	57719 44 h-index	82499 72 g-index
99 all docs	99 docs citations	99 times ranked	4996 citing authors

#	Article	IF	Citations
1	A VDAC1-mediated NEET protein chain transfers [2Fe-2S] clusters between the mitochondria and the cytosol and impacts mitochondrial dynamics. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	20
2	Peptide Permeation across a Phosphocholine Membrane: An Atomically Detailed Mechanism Determined through Simulations and Supported by Experimentation. Journal of Physical Chemistry B, 2022, 126, 2834-2849.	1.2	17
3	An anti-diabetic drug targets NEET (CISD) proteins through destabilization of their [2Fe-2S] clusters. Communications Biology, 2022, 5, 437.	2.0	8
4	A peptide-derived strategy for specifically targeting the mitochondria and ER of cancer cells: a new approach in fighting cancer. Chemical Science, 2022, 13, 6929-6941.	3.7	11
5	NEET proteins as novel drug targets for mitochondrial dysfunction. , 2021, , 477-488.		5
6	Triggered Dimerization and Trimerization of DNA Tetrahedra for Multiplexed miRNA Detection and Imaging of Cancer Cells. Small, 2021, 17, e2007355.	5.2	34
7	The impact of multifactorial stress combination on plant growth and survival. New Phytologist, 2021, 230, 1034-1048.	3.5	149
8	pH- and miRNA-Responsive DNA-Tetrahedra/Metalâ€"Organic Framework Conjugates: Functional Sense-and-Treat Carriers. ACS Nano, 2021, 15, 6645-6657.	7.3	73
9	A Combined Drug Treatment That Reduces Mitochondrial Iron and Reactive Oxygen Levels Recovers Insulin Secretion in NAF-1-Deficient Pancreatic Cells. Antioxidants, 2021, 10, 1160.	2.2	7
10	Gated Dissipative Dynamic Artificial Photosynthetic Model Systems. Journal of the American Chemical Society, 2021, 143, 12120-12128.	6.6	13
11	The two redox states of the human NEET proteinsâ€™ [2Feâ€"2S] clusters. Journal of Biological Inorganic Chemistry, 2021, 26, 763-774.	1.1	6
12	Cryo-EM photosystem I structure reveals adaptation mechanisms to extreme high light in Chlorella ohadii. Nature Plants, 2021, 7, 1314-1322.	4.7	18
13	Disrupting CISD2 function in cancer cells primarily impacts mitochondrial labile iron levels and triggers TXNIP expression. Free Radical Biology and Medicine, 2021, 176, 92-104.	1.3	22
14	Aptamer-modified DNA tetrahedra-gated metalâ€"organic framework nanoparticle carriers for enhanced chemotherapy or photodynamic therapy. Chemical Science, 2021, 12, 14473-14483.	3.7	34
15	Expression of a dominantâ€negative AtNEETâ€H89C protein disrupts ironâ€"sulfur metabolism and iron homeostasis in Arabidopsis. Plant Journal, 2020, 101, 1152-1169.	2.8	41
16	Photosynthesis Z-Scheme biomimicry: Photosystem I/BiVO4 photo-bioelectrochemical cell for donor-free bias-free electrical power generation. Biosensors and Bioelectronics, 2020, 168, 112517.	5.3	12
17	The balancing act of NEET proteins: Iron, ROS, calcium and metabolism. Biochimica Et Biophysica Acta - Molecular Cell Research, 2020, 1867, 118805.	1.9	39
18	DNA Tetrahedra Modules as Versatile Optical Sensing Platforms for Multiplexed Analysis of miRNAs, Endonucleases, and Aptamerâ€"Ligand Complexes. ACS Nano, 2020, 14, 9021-9031.	7.3	90

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19	Triggered Release of Loads from Microcapsule-in-Microcapsule Hydrogel Microcarriers: En-Route to an â€œArtificial Pancreasâ€• Journal of the American Chemical Society, 2020, 142, 4223-4234.	6.6	53
20	MicroRNA-Guided Selective Release of Loads from Micro-/Nanocarriers Using Auxiliary Constitutional Dynamic Networks. ACS Nano, 2020, 14, 1482-1491.	7.3	25
21	Chemical targeting of NEET proteins reveals their function in mitochondrial morphodynamics. EMBO Reports, 2020, 21, e49019.	2.0	15
22	Artificial Photosynthesis with Electron Acceptor/Photosensitizer-Aptamer Conjugates. Nano Letters, 2019, 19, 6621-6628.	4.5	12
23	The anti-apoptotic proteins NAF-1 and iASPP interact to drive apoptosis in cancer cells. Chemical Science, 2019, 10, 665-673.	3.7	11
24	Photosensitized H₂ Evolution and NADPH Formation by Photosensitizer/Carbon Nitride Hybrid Nanoparticles. Nano Letters, 2019, 19, 9121-9130.	4.5	13
25	Redox-dependent gating of VDAC by mitoNEET. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 19924-19929.	3.3	85
26	Enzymeâ€Driven Release of Loads from Nucleic Acidâ€“Capped Metalâ€“Organic Framework Nanoparticles. Advanced Functional Materials, 2019, 29, 1805341.	7.8	41
27	NEET Proteins: A New Link Between Iron Metabolism, Reactive Oxygen Species, and Cancer. Antioxidants and Redox Signaling, 2019, 30, 1083-1095.	2.5	129
28	The cisd gene family regulates physiological germline apoptosis through ced-13 and the canonical cell death pathway in Caenorhabditis elegans. Cell Death and Differentiation, 2019, 26, 162-178.	5.0	17
29	Drug Carriers: Stimuliâ€Responsive Nucleic Acidâ€Based Polyacrylamide Hydrogelâ€Coated Metalâ€“Organic Framework Nanoparticles for Controlled Drug Release (Adv. Funct. Mater. 8/2018). Advanced Functional Materials, 2018, 28, 1870053.	7.8	10
30	Targeted VEGF-triggered release of an anti-cancer drug from aptamer-functionalized metalâ€“organic framework nanoparticles. Nanoscale, 2018, 10, 4650-4657.	2.8	70
31	The unique fold and lability of the [2Fe-2S] clusters of NEET proteins mediate their key functions in health and disease. Journal of Biological Inorganic Chemistry, 2018, 23, 599-612.	1.1	52
32	Structure of the human monomeric NEET protein MiNT and its role in regulating iron and reactive oxygen species in cancer cells. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 272-277.	3.3	58
33	Stimuliâ€Responsive Nucleic Acidâ€Based Polyacrylamide Hydrogelâ€Coated Metalâ€“Organic Framework Nanoparticles for Controlled Drug Release. Advanced Functional Materials, 2018, 28, 1705137.	7.8	201
34	Glucose-Responsive Metalâ€“Organic-Framework Nanoparticles Act as â€œSmartâ€•Sense-and-Treat Carriers. ACS Nano, 2018, 12, 7538-7545.	7.3	203
35	pH- and ligand-induced release of loads from DNAâ€“acrylamide hydrogel microcapsules. Chemical Science, 2017, 8, 3362-3373.	3.7	130
36	Molecular Dynamics Simulations of the [2Feâ€“2S] Cluster-Binding Domain of NEET Proteins Reveal Key Molecular Determinants That Induce Their Cluster Transfer/Release. Journal of Physical Chemistry B, 2017, 121, 10648-10656.	1.2	18

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37	ATPâ€Responsive Aptamerâ€Based Metalâ€"Organic Framework Nanoparticles (NMOFs) for the Controlled Release of Loads and Drugs. Advanced Functional Materials, 2017, 27, 1702102.	7.8	169
38	Stimuli-responsive nucleic acid-functionalized metalâ€"organic framework nanoparticles using pH- and metal-ion-dependent DNAzymes as locks. Chemical Science, 2017, 8, 5769-5780.	3.7	176
39	Interactions between mitoNEET and NAF-1 in cells. PLoS ONE, 2017, 12, e0175796.	1.1	42
40	Activation of apoptosis in NAF-1-deficient human epithelial breast cancer cells. Journal of Cell Science, 2016, 129, 155-65.	1.2	44
41	The Application of Stimuliâ€Responsive VEGFâ€•and ATPâ€Aptamerâ€Based Microcapsules for the Controlled Release of an Anticancer Drug, and the Selective Targeted Cytotoxicity toward Cancer Cells. Advanced Functional Materials, 2016, 26, 4262-4273.	7.8	83
42	Gossypol-Capped Mitoxantrone-Loaded Mesoporous SiO₂ NPs for the Cooperative Controlled Release of Two Anti-Cancer Drugs. ACS Applied Materials & Interfaces, 2016, 8, 14414-14422.	4.0	18
43	GLP-1-RA Corrects Mitochondrial Labile Iron Accumulation and Improves Î²-Cell Function in Type 2 Wolfram Syndrome. Journal of Clinical Endocrinology and Metabolism, 2016, 101, 3592-3599.	1.8	40
44	Discovering Novel and Diverse Iron-Chelators in Silico. Journal of Chemical Information and Modeling, 2016, 56, 2476-2485.	2.5	9
45	Breast cancer tumorigenicity is dependent on high expression levels of NAF-1 and the lability of its Fe-S clusters. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 10890-10895.	3.3	64
46	Assembly of photo-bioelectrochemical cells using photosystem I-functionalized electrodes. Nature Energy, 2016, 1, .	19.8	69
47	Light-Responsive and pH-Responsive DNA Microcapsules for Controlled Release of Loads. Journal of the American Chemical Society, 2016, 138, 8936-8945.	6.6	194
48	Drug Delivery: The Application of Stimuli-Responsive VEGF- and ATP-Aptamer-Based Microcapsules for the Controlled Release of an Anticancer Drug, and the Selective Targeted Cytotoxicity toward Cancer Cells (Adv. Funct. Mater. 24/2016). Advanced Functional Materials, 2016, 26, 4423-4423.	7.8	1
49	Structureâ€"function analysis of NEET proteins uncovers their role as key regulators of iron and ROS homeostasis in health and disease. Biochimica Et Biophysica Acta - Molecular Cell Research, 2015, 1853, 1294-1315.	1.9	128
50	The Fe-S cluster-containing NEET proteins mitoNEET and NAF-1 as chemotherapeutic targets in breast cancer. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 3698-3703.	3.3	64
51	Cancer-Related NEET Proteins Transfer 2Fe-2S Clusters to Anamorsin, a Protein Required for Cytosolic Iron-Sulfur Cluster Biogenesis. PLoS ONE, 2015, 10, e0139699.	1.1	59
52	Gated Mesoporous SiO₂ Nanoparticles Using K⁺â€Stabilized Gâ€Quadruplexes. Advanced Functional Materials, 2014, 24, 5662-5670.	7.8	37
53	A point mutation in the [2Feâ€"2S] cluster binding region of the NAF-1 protein (H114C) dramatically hinders the cluster donor properties. Acta Crystallographica Section D: Biological Crystallography, 2014, 70, 1572-1578.	2.5	30
54	Integrated strategy reveals the protein interface between cancer targets Bcl-2 and NAF-1. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 5177-5182.	3.3	55

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55	Photosynthetic reaction center-functionalized electrodes for photo-bioelectrochemical cells. Photosynthesis Research, 2014, 120, 71-85.	1.6	94
56	Cytochrome c-coupled photosystem I and photosystem II (PSI/PSII) photo-bioelectrochemical cells. Energy and Environmental Science, 2013, 6, 2950.	15.6	68
57	NAF-1 and mitoNEET are central to human breast cancer proliferation by maintaining mitochondrial homeostasis and promoting tumor growth. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 14676-14681.	3.3	171
58	Biocatalytic Release of an Anticancer Drug from Nucleic-Acids-Capped Mesoporous SiO₂ Using DNA or Molecular Biomarkers as Triggering Stimuli. ACS Nano, 2013, 7, 8455-8468.	7.3	128
59	Photosystem I (PSI)/Photosystem II (PSII)â€Based Photoâ€Bioelectrochemical Cells Revealing Directional Generation of Photocurrents. Small, 2013, 9, 2970-2978.	5.2	95
60	Light-induced and redox-triggered uptake and release of substrates to and from mesoporous SiO2 nanoparticles. Journal of Materials Chemistry B, 2013, 1, 3159.	2.9	27
61	Allosteric control in a metalloprotein dramatically alters function. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 948-953.	3.3	31
62	Nutrient-Deprivation Autophagy Factor-1 (NAF-1): Biochemical Properties of a Novel Cellular Target for Anti-Diabetic Drugs. PLoS ONE, 2013, 8, e61202.	1.1	45
63	NADPH Inhibits [2Fe-2S] Cluster Protein Transfer from Diabetes Drug Target MitoNEET to an Apo-acceptor Protein. Journal of Biological Chemistry, 2012, 287, 11649-11655.	1.6	30
64	Electrochemical Switching of Photoelectrochemical Processes at CdS QDs and Photosystem I-Modified Electrodes. ACS Nano, 2012, 6, 9258-9266.	7.3	50
65	Characterization of <i>Arabidopsis</i> NEET Reveals an Ancient Role for NEET Proteins in Iron Metabolism. Plant Cell, 2012, 24, 2139-2154.	3.1	88
66	Mutation of the His ligand in mitoNEET stabilizes the 2Feâ€"2S cluster despite conformational heterogeneity in the ligand environment. Acta Crystallographica Section D: Biological Crystallography, 2011, 67, 516-523.	2.5	23
67	Allostery in the ferredoxin protein motif does not involve a conformational switch. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 2240-2245.	3.3	27
68	Facile transfer of [2Fe-2S] clusters from the diabetes drug target mitoNEET to an apo-acceptor protein. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 13047-13052.	3.3	110
69	Generation of Photocurrents by Bis-aniline-Cross-Linked Pt Nanoparticle/Photosystem I Composites on Electrodes. Journal of Physical Chemistry B, 2010, 114, 14383-14388.	1.2	70
70	Binding of Histidine in the (Cys)₃(His)₁-Coordinated [2Feâˆ'2S] Cluster of Human mitoNEET. Journal of the American Chemical Society, 2010, 132, 2037-2049.	6.6	67
71	Bioactive apo-ferredoxinâ€"polycationâ€"clay composites for iron binding. Journal of Materials Chemistry, 2010, 20, 4361.	6.7	9
72	Engineering the Redox Potential over a Wide Range within a New Class of FeS Proteins. Journal of the American Chemical Society, 2010, 132, 13120-13122.	6.6	50

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73	The novel 2Feâ€"2S outer mitochondrial protein mitoNEET displays conformational flexibility in its N-terminal cytoplasmic tethering domain. Acta Crystallographica Section F: Structural Biology Communications, 2009, 65, 654-659.	0.7	20
74	Crystal Structure of Miner1: The Redox-active 2Fe-2S Protein Causative in Wolfram Syndrome 2. Journal of Molecular Biology, 2009, 392, 143-153.	2.0	110
75	MitoNEET is a uniquely folded 2Feâ€"2S outer mitochondrial membrane protein stabilized by pioglitazone. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 14342-14347.	3.3	242
76	The Outer Mitochondrial Membrane Protein mitoNEET Contains a Novel Redox-active 2Fe-2S Cluster*. Journal of Biological Chemistry, 2007, 282, 23745-23749.	1.6	145
77	Structural Basis for the Thermostability of Ferredoxin from the Cyanobacterium Mastigocladus laminosus. Journal of Molecular Biology, 2005, 350, 599-608.	2.0	38
78	Purification, crystallization and preliminary X-ray analysis of ferredoxin isolated from thermophilic cyanobacteriumMastigocladus laminosus. Acta Crystallographica Section D: Biological Crystallography, 2003, 59, 734-736.	2.5	7
79	Function and organization of Photosystem I polypeptides. Photosynthesis Research, 1995, 44, 23-40.	1.6	120
80	The carboxyl-terminal region of the spinach PsaD subunit contains information for its specific assembly into plant thylakoids. Photosynthesis Research, 1995, 44, 157-164.	1.6	5
81	Assembly of the chlorophyll-protein complexes. Photosynthesis Research, 1995, 44, 165-181.	1.6	10
82	Stable assembly of PsaE into cyanobacterial photosynthetic membranes is dependent on the presence of other accessory subunits of photosystem I. Plant Molecular Biology, 1993, 23, 895-900.	2.0	25
83	Subunit III (Psa-F) of photosystem I reaction center of the C4 dicotyledon Flaveria trinervia. Plant Molecular Biology, 1993, 21, 573-577.	2.0	7
84	Assembly and processing of subunit II (PsaD) precursor in the isolated photosystem-I complex. FEBS Letters, 1992, 302, 15-17.	1.3	17
85	On Some of the In-Organello Processes Involved in the Biogenesis of Chlorophyll-Protein Complexes. Journal of Basic and Clinical Physiology and Pharmacology, 1991, 2, 183-196.	0.7	0
86	The Composition and Organization of Photosystem I. Journal of Basic and Clinical Physiology and Pharmacology, 1991, 2, 123-140.	0.7	14
87	The apoprotein precursor of the major light-harvesting complex of photosystem II (LHCIIb) is inserted primarily into stromal lamellae and subsequently migrates to the grana. Plant Molecular Biology, 1990, 14, 753-764.	2.0	31
88	Structure and biogenesis of Chlamydomonas reinhardtii photosystem I. FEBS Journal, 1988, 177, 411-416.	0.2	123
89	Assembly of the barley light-harvesting chlorophyll a/b proteins in barley etiochloroplasts involves processing of the precursor on thylakoids. Plant Molecular Biology, 1988, 11, 95-107.	2.0	48
90	Insertion of the precursor of the light-harvesting chlorophylla/b-protein into the thylakoids requires the presence of a developmentally regulated stromal factor. Plant Molecular Biology, 1987, 10, 3-11.	2.0	80

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91	Biochemical composition and structure of photosynthetic pigmentproteins from higher plants. Physiologia Plantarum, 1987, 71, 236-240.	2.6	24
92	Purification and characterization of a light-harvesting chlorophyll-a/b-protein of photosystem I of Lemna gibba. FEBS Journal, 1987, 164, 345-350.	0.2	35
93	Isolation of cDNA clones for fourteen nuclear-encoded thylakoid membrane proteins. Molecular Genetics and Genomics, 1986, 204, 258-265.	2.4	90
94	Photosystem I reaction centers from maize bundle-sheath and mesophyll chloroplasts lack subunit III. FEBS Journal, 1986, 159, 157-161.	0.2	21
95	Biogenesis of photosystem I reaction center during greening of oat, bean and spinach leaves. Plant Molecular Biology, 1985, 4, 377-384.	2.0	66
96	Purification and composition of photosystem I reaction center of Prochloron sp., an oxygen-evolving prokaryote containing chlorophyll b. FEBS Letters, 1985, 191, 29-33.	1.3	27
97	Site of synthesis of subunits to photosystem I reaction center and the proton-ATPase in Spirodela. FEBS Letters, 1981, 125, 115-119.	1.3	89
98	Photosystem I reaction centers fromChlamydomonas and higher plant chloroplasts. Journal of Bioenergetics and Biomembranes, 1981, 13, 295-306.	1.0	36