

# Rachel Nechushtai

## List of Publications by Year in descending order

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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	MitoNEET is a uniquely folded 2Fe-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
2	Glucose-Responsive Metal-Organic-Framework Nanoparticles Act as "Smart-Sense-and-Treat Carriers. ACS Nano, 2018, 12, 7538-7545.	7.3	203
3	Stimuli-Responsive Nucleic Acid-Based Polyacrylamide Hydrogel-Coated Metal-Organic Framework Nanoparticles for Controlled Drug Release. Advanced Functional Materials, 2018, 28, 1705137.	7.8	201
4	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
5	Stimuli-responsive nucleic acid-functionalized metal-organic framework nanoparticles using pH- and metal-ion-dependent DNAzymes as locks. Chemical Science, 2017, 8, 5769-5780.	3.7	176
6	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
7	ATP-Responsive Aptamer-Based Metal-Organic Framework Nanoparticles (NMOFs) for the Controlled Release of Loads and Drugs. Advanced Functional Materials, 2017, 27, 1702102.	7.8	169
8	The impact of multifactorial stress combination on plant growth and survival. New Phytologist, 2021, 230, 1034-1048.	3.5	149
9	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
10	pH- and ligand-induced release of loads from DNA-acrylamide hydrogel microcapsules. Chemical Science, 2017, 8, 3362-3373.	3.7	130
11	NEET Proteins: A New Link Between Iron Metabolism, Reactive Oxygen Species, and Cancer. Antioxidants and Redox Signaling, 2019, 30, 1083-1095.	2.5	129
12	Biocatalytic Release of an Anticancer Drug from Nucleic-Acids-Capped Mesoporous SiO <sub>2</sub> Using DNA or Molecular Biomarkers as Triggering Stimuli. ACS Nano, 2013, 7, 8455-8468.	7.3	128
13	Structure-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
14	Structure and biogenesis of Chlamydomonas reinhardtii photosystem I. FEBS Journal, 1988, 177, 411-416.	0.2	123
15	Function and organization of Photosystem I polypeptides. Photosynthesis Research, 1995, 44, 23-40.	1.6	120
16	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
17	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
18	Photosystem I (PSI)/Photosystem II (PSII)-Based Photo-Bioelectrochemical Cells Revealing Directional Generation of Photocurrents. Small, 2013, 9, 2970-2978.	5.2	95

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19	Photosynthetic reaction center-functionalized electrodes for photo-bioelectrochemical cells. <i>Photosynthesis Research</i> , 2014, 120, 71-85.	1.6	94
20	Isolation of cDNA clones for fourteen nuclear-encoded thylakoid membrane proteins. <i>Molecular Genetics and Genomics</i> , 1986, 204, 258-265.	2.4	90
21	DNA Tetrahedra Modules as Versatile Optical Sensing Platforms for Multiplexed Analysis of miRNAs, Endonucleases, and Aptamer-Ligand Complexes. <i>ACS Nano</i> , 2020, 14, 9021-9031.	7.3	90
22	Site of synthesis of subunits to photosystem I reaction center and the proton-ATPase in <i>Spirodela</i> . <i>FEBS Letters</i> , 1981, 125, 115-119.	1.3	89
23	Characterization of <i>Arabidopsis</i> NEET Reveals an Ancient Role for NEET Proteins in Iron Metabolism. <i>Plant Cell</i> , 2012, 24, 2139-2154.	3.1	88
24	Redox-dependent gating of VDAC by mitoNEET. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 19924-19929.	3.3	85
25	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. <i>Advanced Functional Materials</i> , 2016, 26, 4262-4273.	7.8	83
26	Insertion of the precursor of the light-harvesting chlorophylla/b-protein into the thylakoids requires the presence of a developmentally regulated stromal factor. <i>Plant Molecular Biology</i> , 1987, 10, 3-11.	2.0	80
27	pH- and miRNA-Responsive DNA-Tetrahedra/Metal-Organic Framework Conjugates: Functional Sense-and-Treat Carriers. <i>ACS Nano</i> , 2021, 15, 6645-6657.	7.3	73
28	Generation of Photocurrents by Bis-aniline-Cross-Linked Pt Nanoparticle/Photosystem I Composites on Electrodes. <i>Journal of Physical Chemistry B</i> , 2010, 114, 14383-14388.	1.2	70
29	Targeted VEGF-triggered release of an anti-cancer drug from aptamer-functionalized metal-organic framework nanoparticles. <i>Nanoscale</i> , 2018, 10, 4650-4657.	2.8	70
30	Assembly of photo-bioelectrochemical cells using photosystem I-functionalized electrodes. <i>Nature Energy</i> , 2016, 1, .	19.8	69
31	Cytochrome c-coupled photosystem I and photosystem II (PSI/PSII) photo-bioelectrochemical cells. <i>Energy and Environmental Science</i> , 2013, 6, 2950.	15.6	68
32	Binding of Histidine in the (Cys) <sub>3</sub> (His) <sub>1</sub> -Coordinated [2Fe <sup>2+</sup> 2S] Cluster of Human mitoNEET. <i>Journal of the American Chemical Society</i> , 2010, 132, 2037-2049.	6.6	67
33	Biogenesis of photosystem I reaction center during greening of oat, bean and spinach leaves. <i>Plant Molecular Biology</i> , 1985, 4, 377-384.	2.0	66
34	The Fe-S cluster-containing NEET proteins mitoNEET and NAF-1 as chemotherapeutic targets in breast cancer. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 3698-3703.	3.3	64
35	Breast cancer tumorigenicity is dependent on high expression levels of NAF-1 and the lability of its Fe-S clusters. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 10890-10895.	3.3	64
36	Cancer-Related NEET Proteins Transfer 2Fe-2S Clusters to Anamorsin, a Protein Required for Cytosolic Iron-Sulfur Cluster Biogenesis. <i>PLoS ONE</i> , 2015, 10, e0139699.	1.1	59

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37	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
38	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
39	Triggered Release of Loads from Microcapsule-in-Microcapsule Hydrogel Microcarriers: En-Route to an "Artificial Pancreas". Journal of the American Chemical Society, 2020, 142, 4223-4234.	6.6	53
40	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
41	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
42	Electrochemical Switching of Photoelectrochemical Processes at CdS QDs and Photosystem I-Modified Electrodes. ACS Nano, 2012, 6, 9258-9266.	7.3	50
43	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
44	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
45	Activation of apoptosis in NAF-1-deficient human epithelial breast cancer cells. Journal of Cell Science, 2016, 129, 155-65.	1.2	44
46	Interactions between mitoNEET and NAF-1 in cells. PLoS ONE, 2017, 12, e0175796.	1.1	42
47	Enzyme-Driven Release of Loads from Nucleic Acid-Capped Metal-Organic Framework Nanoparticles. Advanced Functional Materials, 2019, 29, 1805341.	7.8	41
48	Expression of a dominant-negative AtNEET-H89C protein disrupts iron-sulfur metabolism and iron homeostasis in Arabidopsis. Plant Journal, 2020, 101, 1152-1169.	2.8	41
49	GLP-1-RA Corrects Mitochondrial Labile Iron Accumulation and Improves $\beta$ -Cell Function in Type 2 Wolfram Syndrome. Journal of Clinical Endocrinology and Metabolism, 2016, 101, 3592-3599.	1.8	40
50	The balancing act of NEET proteins: Iron, ROS, calcium and metabolism. Biochimica Et Biophysica Acta - Molecular Cell Research, 2020, 1867, 118805.	1.9	39
51	Structural Basis for the Thermostability of Ferredoxin from the Cyanobacterium Mastigocladus laminosus. Journal of Molecular Biology, 2005, 350, 599-608.	2.0	38
52	Gated Mesoporous SiO <sub>2</sub> Nanoparticles Using K <sup>+</sup> -Stabilized G-C <sub>4</sub> Quadruplexes. Advanced Functional Materials, 2014, 24, 5662-5670.	7.8	37
53	Photosystem I reaction centers from Chlamydomonas and higher plant chloroplasts. Journal of Bioenergetics and Biomembranes, 1981, 13, 295-306.	1.0	36
54	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

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55	Triggered Dimerization and Trimerization of DNA Tetrahedra for Multiplexed miRNA Detection and Imaging of Cancer Cells. <i>Small</i> , 2021, 17, e2007355.	5.2	34
56	Aptamer-modified DNA tetrahedra-gated metal-organic framework nanoparticle carriers for enhanced chemotherapy or photodynamic therapy. <i>Chemical Science</i> , 2021, 12, 14473-14483.	3.7	34
57	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. <i>Plant Molecular Biology</i> , 1990, 14, 753-764.	2.0	31
58	Allosteric control in a metalloprotein dramatically alters function. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 948-953.	3.3	31
59	NADPH Inhibits [2Fe-2S] Cluster Protein Transfer from Diabetes Drug Target MitoNEET to an Apo-acceptor Protein. <i>Journal of Biological Chemistry</i> , 2012, 287, 11649-11655.	1.6	30
60	A point mutation in the [2Fe-2S] cluster binding region of the NAF-1 protein (H114C) dramatically hinders the cluster donor properties. <i>Acta Crystallographica Section D: Biological Crystallography</i> , 2014, 70, 1572-1578.	2.5	30
61	Purification and composition of photosystem I reaction center of <i>Prochloron</i> sp., an oxygen-evolving prokaryote containing chlorophyll b. <i>FEBS Letters</i> , 1985, 191, 29-33.	1.3	27
62	Allostery in the ferredoxin protein motif does not involve a conformational switch. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 2240-2245.	3.3	27
63	Light-induced and redox-triggered uptake and release of substrates to and from mesoporous SiO <sub>2</sub> nanoparticles. <i>Journal of Materials Chemistry B</i> , 2013, 1, 3159.	2.9	27
64	Stable assembly of PsaE into cyanobacterial photosynthetic membranes is dependent on the presence of other accessory subunits of photosystem I. <i>Plant Molecular Biology</i> , 1993, 23, 895-900.	2.0	25
65	MicroRNA-Guided Selective Release of Loads from Micro-/Nanocarriers Using Auxiliary Constitutional Dynamic Networks. <i>ACS Nano</i> , 2020, 14, 1482-1491.	7.3	25
66	Biochemical composition and structure of photosynthetic pigmentproteins from higher plants. <i>Physiologia Plantarum</i> , 1987, 71, 236-240.	2.6	24
67	Mutation of the His ligand in mitoNEET stabilizes the 2Fe-2S cluster despite conformational heterogeneity in the ligand environment. <i>Acta Crystallographica Section D: Biological Crystallography</i> , 2011, 67, 516-523.	2.5	23
68	Disrupting CISD2 function in cancer cells primarily impacts mitochondrial labile iron levels and triggers TXNIP expression. <i>Free Radical Biology and Medicine</i> , 2021, 176, 92-104.	1.3	22
69	Photosystem I reaction centers from maize bundle-sheath and mesophyll chloroplasts lack subunit III. <i>FEBS Journal</i> , 1986, 159, 157-161.	0.2	21
70	The novel 2Fe-2S outer mitochondrial protein mitoNEET displays conformational flexibility in its N-terminal cytoplasmic tethering domain. <i>Acta Crystallographica Section F: Structural Biology Communications</i> , 2009, 65, 654-659.	0.7	20
71	A VDAC1-mediated NEET protein chain transfers [2Fe-2S] clusters between the mitochondria and the cytosol and impacts mitochondrial dynamics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2022, 119, .	3.3	20
72	Gossypol-Capped Mitoxantrone-Loaded Mesoporous SiO <sub>2</sub> NPs for the Cooperative Controlled Release of Two Anti-Cancer Drugs. <i>ACS Applied Materials &amp; Interfaces</i> , 2016, 8, 14414-14422.	4.0	18

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73	Molecular Dynamics Simulations of the [2Fe-2S] Cluster-Binding Domain of NEET Proteins Reveal Key Molecular Determinants That Induce Their Cluster Transfer/Release. <i>Journal of Physical Chemistry B</i> , 2017, 121, 10648-10656.	1.2	18
74	Cryo-EM photosystem I structure reveals adaptation mechanisms to extreme high light in <i>Chlorella ohadii</i> . <i>Nature Plants</i> , 2021, 7, 1314-1322.	4.7	18
75	Assembly and processing of subunit II (PsaD) precursor in the isolated photosystem-I complex. <i>FEBS Letters</i> , 1992, 302, 15-17.	1.3	17
76	The <i>cisd</i> gene family regulates physiological germline apoptosis through <i>ced-13</i> and the canonical cell death pathway in <i>Caenorhabditis elegans</i> . <i>Cell Death and Differentiation</i> , 2019, 26, 162-178.	5.0	17
77	Peptide Permeation across a Phosphocholine Membrane: An Atomically Detailed Mechanism Determined through Simulations and Supported by Experimentation. <i>Journal of Physical Chemistry B</i> , 2022, 126, 2834-2849.	1.2	17
78	Chemical targeting of NEET proteins reveals their function in mitochondrial morphodynamics. <i>EMBO Reports</i> , 2020, 21, e49019.	2.0	15
79	The Composition and Organization of Photosystem I. <i>Journal of Basic and Clinical Physiology and Pharmacology</i> , 1991, 2, 123-140.	0.7	14
80	Photosensitized H <sub>2</sub> Evolution and NADPH Formation by Photosensitizer/Carbon Nitride Hybrid Nanoparticles. <i>Nano Letters</i> , 2019, 19, 9121-9130.	4.5	13
81	Gated Dissipative Dynamic Artificial Photosynthetic Model Systems. <i>Journal of the American Chemical Society</i> , 2021, 143, 12120-12128.	6.6	13
82	Artificial Photosynthesis with Electron Acceptor/Photosensitizer-Aptamer Conjugates. <i>Nano Letters</i> , 2019, 19, 6621-6628.	4.5	12
83	Photosynthesis Z-Scheme biomimicry: Photosystem I/BiVO <sub>4</sub> photo-bioelectrochemical cell for donor-free bias-free electrical power generation. <i>Biosensors and Bioelectronics</i> , 2020, 168, 112517.	5.3	12
84	The anti-apoptotic proteins NAF-1 and iASPP interact to drive apoptosis in cancer cells. <i>Chemical Science</i> , 2019, 10, 665-673.	3.7	11
85	A peptide-derived strategy for specifically targeting the mitochondria and ER of cancer cells: a new approach in fighting cancer. <i>Chemical Science</i> , 2022, 13, 6929-6941.	3.7	11
86	Assembly of the chlorophyll-protein complexes. <i>Photosynthesis Research</i> , 1995, 44, 165-181.	1.6	10
87	Drug Carriers: Stimuli-Responsive Nucleic Acid-Based Polyacrylamide Hydrogel-Coated Metal-Organic Framework Nanoparticles for Controlled Drug Release ( <i>Adv. Funct. Mater.</i> 8/2018). <i>Advanced Functional Materials</i> , 2018, 28, 1870053.	7.8	10
88	Bioactive apo-ferredoxin-polycation-clay composites for iron binding. <i>Journal of Materials Chemistry</i> , 2010, 20, 4361.	6.7	9
89	Discovering Novel and Diverse Iron-Chelators in Silico. <i>Journal of Chemical Information and Modeling</i> , 2016, 56, 2476-2485.	2.5	9
90	An anti-diabetic drug targets NEET (CISD) proteins through destabilization of their [2Fe-2S] clusters. <i>Communications Biology</i> , 2022, 5, 437.	2.0	8

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91	Subunit III (Psa-F) of photosystem I reaction center of the C4 dicotyledon <i>Flaveria trinervia</i> . <i>Plant Molecular Biology</i> , 1993, 21, 573-577.	2.0	7
92	Purification, crystallization and preliminary X-ray analysis of ferredoxin isolated from thermophilic cyanobacterium <i>Mastigocladus laminosus</i> . <i>Acta Crystallographica Section D: Biological Crystallography</i> , 2003, 59, 734-736.	2.5	7
93	A Combined Drug Treatment That Reduces Mitochondrial Iron and Reactive Oxygen Levels Recovers Insulin Secretion in NAF-1-Deficient Pancreatic Cells. <i>Antioxidants</i> , 2021, 10, 1160.	2.2	7
94	The two redox states of the human NEET proteinsâ€™ [2Feâ€™2S] clusters. <i>Journal of Biological Inorganic Chemistry</i> , 2021, 26, 763-774.	1.1	6
95	The carboxyl-terminal region of the spinach PsaD subunit contains information for its specific assembly into plant thylakoids. <i>Photosynthesis Research</i> , 1995, 44, 157-164.	1.6	5
96	NEET proteins as novel drug targets for mitochondrial dysfunction. , 2021, , 477-488.		5
97	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 ( <i>Adv. Funct. Mater.</i> 24/2016). <i>Advanced Functional Materials</i> , 2016, 26, 4423-4423.	7.8	1
98	On Some of the In-Organello Processes Involved in the Biogenesis of Chlorophyll-Protein Complexes. <i>Journal of Basic and Clinical Physiology and Pharmacology</i> , 1991, 2, 183-196.	0.7	0