

Takaaki Akaike

List of Publications by Year in descending order

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116
papers

7,578
citations

66315
42
h-index

54882
84
g-index

121
all docs

121
docs citations

121
times ranked

6508
citing authors

#	ARTICLE	IF	CITATIONS
1	Reactive cysteine persulfides and S-polythiolation regulate oxidative stress and redox signaling. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 7606-7611.	3.3	757
2	Cysteinyl-tRNA synthetase governs cysteine polysulfidation and mitochondrial bioenergetics. Nature Communications, 2017, 8, 1177.	5.8	373
3	Redox chemistry and chemical biology of H ₂ S, hydropersulfides, and derived species: Implications of their possible biological activity and utility. Free Radical Biology and Medicine, 2014, 77, 82-94.	1.3	340
4	AUTACs: Cargo-Specific Degradors Using Selective Autophagy. Molecular Cell, 2019, 76, 797-810.e10.	4.5	319
5	Dependence on O ₂ - generation by xanthine oxidase of pathogenesis of influenza virus infection in mice.. Journal of Clinical Investigation, 1990, 85, 739-745.	3.9	319
6	Nitric oxide and virus infection. Immunology, 2000, 101, 300-308.	2.0	307
7	Alkylperoxyl Radical-Scavenging Activity of Various Flavonoids and Other Phenolic Compounds:Â Implications for the Anti-Tumor-Promoter Effect of Vegetables. Journal of Agricultural and Food Chemistry, 1999, 47, 397-402.	2.4	293
8	Hydrogen sulfide anion regulates redox signaling via electrophile sulfhydration. Nature Chemical Biology, 2012, 8, 714-724.	3.9	274
9	Protein S-guanylation by the biological signal 8-nitroguanosine 3â€²,5â€²-cyclic monophosphate. Nature Chemical Biology, 2007, 3, 727-735.	3.9	249
10	SIRT7 Controls Hepatic Lipid Metabolism by Regulating the Ubiquitin-Proteasome Pathway. Cell Metabolism, 2014, 19, 712-721.	7.2	173
11	The Development of Fluorescent Probes for Visualizing Intracellular Hydrogen Polysulfides. Angewandte Chemie - International Edition, 2015, 54, 13961-13965.	7.2	165
12	Biological hydropersulfides and related polysulfides â€” a new concept and perspective in redox biology. FEBS Letters, 2018, 592, 2140-2152.	1.3	164
13	8-Nitroguanosine formation in viral pneumonia and its implication for pathogenesis. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 685-690.	3.3	161
14	Electron Spin Resonance Detection of Hydrogen Peroxide as an Endothelium-Derived Hyperpolarizing Factor in Porcine Coronary Microvessels. Arteriosclerosis, Thrombosis, and Vascular Biology, 2003, 23, 1224-1230.	1.1	153
15	The Critical Role of Nitric Oxide Signaling, via Protein S-Guanylation and Nitrated Cyclic GMP, in the Antioxidant Adaptive Response. Journal of Biological Chemistry, 2010, 285, 23970-23984.	1.6	135
16	Control of protein function through oxidation and reduction of persulfidated states. Science Advances, 2020, 6, eaax8358.	4.7	121
17	Speciation of reactive sulfur species and their reactions with alkylating agents: do we have any clue about what is present inside the cell?. British Journal of Pharmacology, 2019, 176, 646-670.	2.7	100
18	Reactive sulfur species regulate tRNA methylthiolation and contribute to insulin secretion. Nucleic Acids Research, 2017, 45, 435-445.	6.5	99

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19	Endogenous Nitrated Nucleotide Is a Key Mediator of Autophagy and Innate Defense against Bacteria. <i>Molecular Cell</i> , 2013, 52, 794-804.	4.5	96
20	Clinical and bacteriological characteristics of <i>Helicobacter cinaedi</i> infection. <i>Journal of Infection and Chemotherapy</i> , 2014, 20, 517-526.	0.8	96
21	The chemical biology of protein hydropersulfides: Studies of a possible protective function of biological hydropersulfide generation. <i>Free Radical Biology and Medicine</i> , 2016, 97, 136-147.	1.3	94
22	<i>Helicobacter cinaedi</i> Cellulitis and Bacteremia in Immunocompetent Hosts after Orthopedic Surgery. <i>Journal of Clinical Microbiology</i> , 2007, 45, 31-38.	1.8	93
23	Mesenchymal Stem Cells Correct Inappropriate Epithelial-mesenchyme Relation in Pulmonary Fibrosis Using Stanniocalcin-1. <i>Molecular Therapy</i> , 2015, 23, 549-560.	3.7	85
24	8-Mercapto-Cyclic GMP Mediates Hydrogen Sulfide-Induced Stomatal Closure in <i>Arabidopsis</i> . <i>Plant and Cell Physiology</i> , 2015, 56, 1481-1489.	1.5	84
25	Detoxification of Methylmercury by Hydrogen Sulfide-Producing Enzyme in Mammalian Cells. <i>Chemical Research in Toxicology</i> , 2011, 24, 1633-1635.	1.7	73
26	The reaction of hydrogen sulfide with disulfides: formation of a stable trisulfide and implications for biological systems. <i>British Journal of Pharmacology</i> , 2019, 176, 671-683.	2.7	73
27	Thiosulfate Mediates Cytoprotective Effects of Hydrogen Sulfide Against Neuronal Ischemia. <i>Journal of the American Heart Association</i> , 2015, 4, .	1.6	72
28	Redox Signaling Regulated by Cysteine Persulfide and Protein Polysulfidation. <i>Molecules</i> , 2016, 21, 1721.	1.7	71
29	Sulfide catabolism ameliorates hypoxic brain injury. <i>Nature Communications</i> , 2021, 12, 3108.	5.8	71
30	Involvement of Reactive Persulfides in Biological Bismethylmercury Sulfide Formation. <i>Chemical Research in Toxicology</i> , 2015, 28, 1301-1306.	1.7	67
31	The chemical biology of hydropersulfides (RSSH): Chemical stability, reactivity and redox roles. <i>Archives of Biochemistry and Biophysics</i> , 2015, 588, 15-24.	1.4	65
32	Enhanced Cellular Polysulfides Negatively Regulate TLR4 Signaling and Mitigate Lethal Endotoxin Shock. <i>Cell Chemical Biology</i> , 2019, 26, 686-698.e4.	2.5	64
33	Regulation by mitochondrial superoxide and NADPH oxidase of cellular formation of nitrated cyclic GMP: potential implications for ROS signalling. <i>Biochemical Journal</i> , 2012, 441, 719-730.	1.7	61
34	Cytoprotective Function of Heme Oxygenase 1 Induced by a Nitrated Cyclic Nucleotide Formed during Murine Salmonellosis. <i>Journal of Immunology</i> , 2009, 182, 3746-3756.	0.4	57
35	Cysteine perthiosulfenic acid (Cys-SSOH): A novel intermediate in thiol-based redox signaling?. <i>Redox Biology</i> , 2018, 14, 379-385.	3.9	56
36	Formation, signaling functions, and metabolisms of nitrated cyclic nucleotide. <i>Nitric Oxide - Biology and Chemistry</i> , 2013, 34, 10-18.	1.2	55

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37	Polysulfide stabilization by tyrosine and hydroxyphenyl-containing derivatives that is important for a reactive sulfur metabolomics analysis. <i>Redox Biology</i> , 2019, 21, 101096.	3.9	55
38	Production of reactive persulfide species in chronic obstructive pulmonary disease. <i>Thorax</i> , 2017, 72, 1074-1083.	2.7	54
39	Chemical Biology of Hydropersulfides and Related Species: Possible Roles in Cellular Protection and Redox Signaling. <i>Antioxidants and Redox Signaling</i> , 2017, 27, 622-633.	2.5	51
40	Metabolomic profiling of reactive persulfides and polysulfides in the aqueous and vitreous humors. <i>Scientific Reports</i> , 2017, 7, 41984.	1.6	50
41	Cell signaling mediated by nitrated cyclic guanine nucleotide. <i>Nitric Oxide - Biology and Chemistry</i> , 2010, 23, 166-174.	1.2	48
42	Promotion of atherosclerosis by <i>Helicobacter cinaedi</i> infection that involves macrophage-driven proinflammatory responses. <i>Scientific Reports</i> , 2014, 4, 4680.	1.6	43
43	Data-Driven Identification of Hydrogen Sulfide Scavengers. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 10898-10902.	7.2	43
44	Hyperhomocysteinemia abrogates fasting-induced cardioprotection against ischemia/reperfusion by limiting bioavailability of hydrogen sulfide anions. <i>Journal of Molecular Medicine</i> , 2015, 93, 879-889.	1.7	42
45	Redox signaling regulated by electrophiles and reactive sulfur species. <i>Journal of Clinical Biochemistry and Nutrition</i> , 2016, 58, 91-98.	0.6	41
46	Rational Design of a Dual-Reactivity-Based Fluorescent Probe for Visualizing Intracellular HSNO. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 16067-16070.	7.2	41
47	Protein polysulfidation-dependent persulfide dioxygenase activity of ethylmalonic encephalopathy protein 1. <i>Biochemical and Biophysical Research Communications</i> , 2016, 480, 180-186.	1.0	39
48	Exposure to Electrophiles Impairs Reactive Persulfide-Dependent Redox Signaling in Neuronal Cells. <i>Chemical Research in Toxicology</i> , 2017, 30, 1673-1684.	1.7	39
49	Regulation of Redox Signaling Involving Chemical Conjugation of Protein Thiols by Nitric Oxide and Electrophiles. <i>Bioconjugate Chemistry</i> , 2010, 21, 1121-1129.	1.8	38
50	Persulfide synthases that are functionally coupled with translation mediate sulfur respiration in mammalian cells. <i>British Journal of Pharmacology</i> , 2019, 176, 607-615.	2.7	38
51	Enzymatic Regulation and Biological Functions of Reactive Cysteine Persulfides and Polysulfides. <i>Biomolecules</i> , 2020, 10, 1245.	1.8	38
52	Reprogrammed transsulfuration promotes basal-like breast tumor progression via realigning cellular cysteine persulfidation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	36
53	Quantitative determination of polysulfide in albumins, plasma proteins and biological fluid samples using a novel combined assays approach. <i>Analytica Chimica Acta</i> , 2017, 969, 18-25.	2.6	33
54	Long-lasting blood pressure lowering effects of nitrite are NO-independent and mediated by hydrogen peroxide, persulfides, and oxidation of protein kinase G1 α redox signalling. <i>Cardiovascular Research</i> , 2020, 116, 51-62.	1.8	31

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55	Environmental Electrophile-Mediated Toxicity in Mice Lacking Nrf2, CSE, or Both. <i>Environmental Health Perspectives</i> , 2019, 127, 67002.	2.8	30
56	Chemical Biology of Reactive Sulfur Species: Hydrolysis-Driven Equilibrium of Polysulfides as a Determinant of Physiological Functions. <i>Antioxidants and Redox Signaling</i> , 2022, 36, 327-336.	2.5	30
57	Redox signal regulation via nNOS phosphorylation at Ser847 in PC12 cells and rat cerebellar granule neurons. <i>Biochemical Journal</i> , 2014, 459, 251-263.	1.7	29
58	Regulation of redox signalling by an electrophilic cyclic nucleotide. <i>Journal of Biochemistry</i> , 2013, 153, 131-138.	0.9	28
59	Reactive Persulfides from <i>Salmonella Typhimurium</i> Downregulate Autophagy-Mediated Innate Immunity in Macrophages by Inhibiting Electrophilic Signaling. <i>Cell Chemical Biology</i> , 2018, 25, 1403-1413.e4.	2.5	28
60	The Uptake and Release of Polysulfur Cysteine Species by Cells: Physiological and Toxicological Implications. <i>Chemical Research in Toxicology</i> , 2019, 32, 447-455.	1.7	28
61	S-Guanylation Proteomics for Redox-Based Mitochondrial Signaling. <i>Antioxidants and Redox Signaling</i> , 2014, 20, 295-307.	2.5	26
62	Redox regulation of electrophilic signaling by reactive persulfides in cardiac cells. <i>Free Radical Biology and Medicine</i> , 2017, 109, 132-140.	1.3	26
63	ATP exposure stimulates glutathione efflux as a necessary switch for NLRP3 inflammasome activation. <i>Redox Biology</i> , 2021, 41, 101930.	3.9	26
64	Complete Genome Sequence of <i>Helicobacter cinaedi</i> Strain PAGU611, Isolated in a Case of Human Bacteremia. <i>Journal of Bacteriology</i> , 2012, 194, 3744-3745.	1.0	25
65	Persistent Activation of cGMP-Dependent Protein Kinase by a Nitrated Cyclic Nucleotide via Site Specific Protein S-Guanylation. <i>Biochemistry</i> , 2016, 55, 751-761.	1.2	25
66	Reactive Cysteine Persulphides: Occurrence, Biosynthesis, Antioxidant Activity, Methodologies, and Bacterial Persulphide Signalling. <i>Advances in Microbial Physiology</i> , 2018, 72, 1-28.	1.0	25
67	Depolysulfidation of Drp1 induced by low-dose methylmercury exposure increases cardiac vulnerability to hemodynamic overload. <i>Science Signaling</i> , 2019, 12, .	1.6	25
68	Reactive Sulfur Species-Mediated Activation of the Keap1-Nrf2 Pathway by 1,2-Naphthoquinone through Sulfenic Acids Formation under Oxidative Stress. <i>Chemical Research in Toxicology</i> , 2015, 28, 838-847.	1.7	24
69	High-Precision Sulfur Metabolomics Innovated by a New Specific Probe for Trapping Reactive Sulfur Species. <i>Antioxidants and Redox Signaling</i> , 2021, 34, 1407-1419.	2.5	24
70	Formation of Sulfur Adducts of N-Acetyl-p-benzoquinoneimine, an Electrophilic Metabolite of Acetaminophen in Vivo: Participation of Reactive Persulfides. <i>Chemical Research in Toxicology</i> , 2015, 28, 1796-1802.	1.7	23
71	8-Nitro-cGMP Enhances SNARE Complex Formation through S-Guanylation of Cys90 in SNAP25. <i>ACS Chemical Neuroscience</i> , 2015, 6, 1715-1725.	1.7	22
72	Nitrosative stress in patients with asthma-chronic obstructive pulmonary disease overlap. <i>Journal of Allergy and Clinical Immunology</i> , 2019, 144, 972-983.e14.	1.5	22

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73	Measuring Reactive Sulfur Species and Thiol Oxidation States: Challenges and Cautions in Relation to Alkylation-Based Protocols. <i>Antioxidants and Redox Signaling</i> , 2020, 33, 1174-1189.	2.5	22
74	Methods in sulfide and persulfide research. <i>Nitric Oxide - Biology and Chemistry</i> , 2021, 116, 47-64.	1.2	22
75	1,4-Naphthoquinone activates the HSP90/HSF1 pathway through the S-arylation of HSP90 in A431 cells: Negative regulation of the redox signal transduction pathway by persulfides/polysulfides. <i>Free Radical Biology and Medicine</i> , 2017, 104, 118-128.	1.3	21
76	Proposal of <i>Helicobacter canicola</i> sp. nov., previously identified as <i>Helicobacter cinaedi</i> , isolated from canines. <i>Systematic and Applied Microbiology</i> , 2016, 39, 307-312.	1.2	20
77	Important Role of Endothelial Caveolin-1 in the Protective Role of Endothelium-dependent Hyperpolarization Against Nitric Oxide-Mediated Nitritative Stress in Microcirculation in Mice. <i>Journal of Cardiovascular Pharmacology</i> , 2018, 71, 113-126.	0.8	20
78	On-tissue polysulfide visualization by surface-enhanced Raman spectroscopy benefits patients with ovarian cancer to predict post-operative chemosensitivity. <i>Redox Biology</i> , 2021, 41, 101926.	3.9	20
79	Antioxidative and anti-inflammatory actions of reactive cysteine persulfides. <i>Journal of Clinical Biochemistry and Nutrition</i> , 2021, 68, 5-8.	0.6	20
80	Direct Evidence of in Vivo Nitric Oxide Production and Inducible Nitric Oxide Synthase mRNA Expression in the Brain of Living Rat during Experimental Meningitis. <i>Journal of Cerebral Blood Flow and Metabolism</i> , 1999, 19, 1175-1178.	2.4	19
81	Modification of Tau by 8-Nitroguanosine 3',5'-Cyclic Monophosphate (8-Nitro-cGMP). <i>Journal of Biological Chemistry</i> , 2016, 291, 22714-22720.	1.6	19
82	Redox Signaling by 8-Nitro-cyclic Guanosine Monophosphate: Nitric Oxide- and Reactive Oxygen Species-Derived Electrophilic Messenger. <i>Antioxidants and Redox Signaling</i> , 2013, 19, 1236-1246.	2.5	18
83	Redox signaling regulated by an electrophilic cyclic nucleotide and reactive cysteine persulfides. <i>Archives of Biochemistry and Biophysics</i> , 2016, 595, 140-146.	1.4	18
84	Synthesis of L-cysteine derivatives containing stable sulfur isotopes and application of this synthesis to reactive sulfur metabolome. <i>Free Radical Biology and Medicine</i> , 2017, 106, 69-79.	1.3	18
85	Superoxide generation from nNOS splice variants and its potential involvement in redox signal regulation. <i>Biochemical Journal</i> , 2017, 474, 1149-1162.	1.7	16
86	Mitochondrial cysteinyl-tRNA synthetase is expressed via alternative transcriptional initiation regulated by energy metabolism in yeast cells. <i>Journal of Biological Chemistry</i> , 2019, 294, 13781-13788.	1.6	16
87	Cysteine Hydropersulfide Inactivates β -Lactam Antibiotics with Formation of Ring-Opened Carbothioic S-Acids in Bacteria. <i>ACS Chemical Biology</i> , 2021, 16, 731-739.	1.6	16
88	8-Nitro-cGMP promotes bone growth through expansion of growth plate cartilage. <i>Free Radical Biology and Medicine</i> , 2017, 110, 63-71.	1.3	15
89	Distribution of Polysulfide in Human Biological Fluids and Their Association with Amylase and Sperm Activities. <i>Molecules</i> , 2019, 24, 1689.	1.7	15
90	Reactive sulfur species inactivate Ca ²⁺ /calmodulin-dependent protein kinase IV via S-polysulfidation of its active-site cysteine residue. <i>Biochemical Journal</i> , 2017, 474, 2547-2562.	1.7	14

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91	The active-site cysteine residue of Ca ²⁺ /calmodulin-dependent protein kinase I is protected from irreversible modification via generation of polysulfidation. Nitric Oxide - Biology and Chemistry, 2019, 86, 68-75.	1.2	13
92	Oxidation of PKGI β mediates an endogenous adaptation to pulmonary hypertension. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 13016-13025.	3.3	12
93	Redox-dependent internalization of the purinergic P2Y ₆ receptor limits colitis progression. Science Signaling, 2022, 15, eabj0644.	1.6	12
94	Involvement of nitric oxide/reactive oxygen species signaling via 8-nitro-cGMP formation in 1-methyl-4-phenylpyridinium ion-induced neurotoxicity in PC12 cells and rat cerebellar granule neurons. Biochemical and Biophysical Research Communications, 2018, 495, 2165-2170.	1.0	10
95	8-Nitro-cGMP is a promoter of osteoclast differentiation induced by RANKL. Nitric Oxide - Biology and Chemistry, 2018, 72, 46-51.	1.2	10
96	Rational Design of a Dual-Responsiveness-Based Fluorescent Probe for Visualizing Intracellular HSNO. Angewandte Chemie, 2019, 131, 16213-16216.	1.6	10
97	Synthesis and Characterization of 8-Nitroguanosine 3',5'-Cyclic Monophosphorothioate Rp-Isomer as a Potent Inhibitor of Protein Kinase G β . Biological and Pharmaceutical Bulletin, 2017, 40, 365-374.	0.6	8
98	8-Nitro-cGMP Attenuates the Interaction between SNARE Complex and Complexin through S-Guanylation of SNAP-25. ACS Chemical Neuroscience, 2018, 9, 217-223.	1.7	8
99	Sulfur-utilizing cytoprotection and energy metabolism. Current Opinion in Physiology, 2019, 9, 1-8.	0.9	8
100	Glutathione Trisulfide Prevents Lipopolysaccharide-induced Inflammatory Gene Expression in Retinal Pigment Epithelial Cells. Ocular Immunology and Inflammation, 2020, , 1-12.	1.0	8
101	Endogenous occurrence of protein S-guanylation in Escherichia coli: Target identification and genetic regulation. Biochemical and Biophysical Research Communications, 2016, 478, 7-11.	1.0	7
102	Production of 8-nitro-cGMP in osteocytic cells and its upregulation by parathyroid hormone and prostaglandin E2. In Vitro Cellular and Developmental Biology - Animal, 2019, 55, 45-51.	0.7	6
103	8-Nitro-cGMP attenuates context-dependent fear memory in mice. Biochemical and Biophysical Research Communications, 2019, 511, 141-147.	1.0	5
104	Loss of cell wall integrity genes <i>cpxA</i> and <i>mrcB</i> causes flocculation in <i>Escherichia coli</i> . Biochemical Journal, 2021, 478, 41-59.	1.7	5
105	Virucidal effect of monogalactosyl diacylglyceride from a green microalga, Coccomyxa sp. KJ, against clinical isolates of SARS-CoV-2 as assessed by a plaque assay. Journal of Clinical Laboratory Analysis, 2021, , e24146.	0.9	5
106	What triggers inflammation in COVID-19?. ELife, 2022, 11, .	2.8	5
107	Subtilase cytotoxin from Shiga-toxigenic Escherichia coli impairs the inflammasome and exacerbates enteropathogenic bacterial infection. IScience, 2022, 25, 104050.	1.9	5
108	Data-Driven Identification of Hydrogen Sulfide Scavengers. Angewandte Chemie, 2019, 131, 11014-11018.	1.6	4

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109	Nitrative stress in respiratory inflammation caused by influenza virus infection. Clinical and Experimental Allergy Reviews, 2007, 7, 19-26.	0.3	3
110	Comment on “Evidence that the ProPerDP method is inadequate for protein persulfidation detection due to lack of specificity” Science Advances, 2021, 7, .	4.7	3
111	8-Nitro-cGMP modulates exocytosis in adrenal chromaffin cells. Biochemical and Biophysical Research Communications, 2020, 526, 225-230.	1.0	3
112	Regulation of nitric oxide/reactive oxygen species redox signaling by nNOS splicing variants. Nitric Oxide - Biology and Chemistry, 2022, 120, 44-52.	1.2	2
113	Regulation of Redox Signaling by a Nitrated Nucleotide and Reactive Cysteine Persulfides. , 2017, , 231-235.		1
114	SNAP-25 S-Guanylation and SNARE Complex Formation. Methods in Molecular Biology, 2019, 1860, 163-173.	0.4	1
115	Generation of Lipid Peroxyl Radicals from Oxidized Edible Oils and Heme-Iron: Suppression of DNA Damage by Unrefined Oils and Vegetable Extracts. ACS Symposium Series, 2002, , 282-300.	0.5	0
116	Titelbild: Data-Driven Identification of Hydrogen Sulfide Scavengers (Angew. Chem. 32/2019). Angewandte Chemie, 2019, 131, 10877-10877.	1.6	0