Kate S Carroll

List of Publications by Year
in descending order

100 papers	9,764 citations	50566 48 h-index	42259 96 g-index
117 all docs	117 docs citations	117 times ranked	11785 citing authors

#	Article	IF	Citations
1	Cysteine-Mediated Redox Signaling: Chemistry, Biology, and Tools for Discovery. Chemical Reviews, 2013, 113, 4633-4679.	23.0	941
2	Expanding the functional diversity of proteins through cysteine oxidation. Current Opinion in Chemical Biology, 2008, 12, 746-754.	2.8	576
3	Orchestrating Redox Signaling Networks through Regulatory Cysteine Switches. ACS Chemical Biology, 2010, 5, 47-62.	1.6	430
4	Peroxide-dependent sulfenylation of the EGFR catalytic site enhances kinase activity. Nature Chemical Biology, 2012, 8, 57-64.	3.9	390
5	Sulfenic acid chemistry, detection and cellular lifetime. Biochimica Et Biophysica Acta - General Subjects, 2014, 1840, 847-875.	1.1	335
6	Mining the Thiol Proteome for Sulfenic Acid Modifications Reveals New Targets for Oxidation in Cells. ACS Chemical Biology, 2009, 4, 783-799.	1.6	258
7	The Redox Biochemistry of Protein Sulfenylation and Sulfinylation. Journal of Biological Chemistry, 2013, 288, 26480-26488.	1.6	252
8	Challenges in Enzyme Mechanism and Energetics. Annual Review of Biochemistry, 2003, 72, 517-571.	5.0	239
9	Selective Persulfide Detection Reveals Evolutionarily Conserved Antiaging Effects of S-Sulfhydration. Cell Metabolism, 2019, 30, 1152-1170.e13.	7.2	236
10	Detection of Protein Sâ€Sulfhydration by a Tagâ€Switch Technique. Angewandte Chemie - International Edition, 2014, 53, 575-581.	7.2	231
11	Role of Rab9 GTPase in Facilitating Receptor Recruitment by TIP47. Science, 2001, 292, 1373-1376.	6.0	229
12	Profiling protein thiol oxidation in tumor cells using sulfenic acid-specific antibodies. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 16163-16168.	3.3	211
13	Site-specific mapping and quantification of protein S-sulphenylation in cells. Nature Communications, 2014, 5, 4776.	5.8	208
14	Muc5b overexpression causes mucociliary dysfunction and enhances lung fibrosis in mice. Nature Communications, 2018, 9, 5363.	5.8	175
15	The Expanding Landscape of the Thiol Redox Proteome. Molecular and Cellular Proteomics, 2016, 15, 1-11.	2.5	174
16	Chemical proteomics reveals new targets of cysteine sulfinic acid reductase. Nature Chemical Biology, 2018, 14, 995-1004.	3.9	173
17	Reengineering Redox Sensitive GFP to Measure Mycothiol Redox Potential of Mycobacterium tuberculosis during Infection. PLoS Pathogens, 2014, 10, e1003902.	2.1	168
18	Downregulation of Tumor Growth and Invasion by Redox-Active Nanoparticles. Antioxidants and Redox Signaling, 2013, 19, 765-778.	2.5	167

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19	Chemical Approaches to Discovery and Study of Sources and Targets of Hydrogen Peroxide Redox Signaling Through NADPH Oxidase Proteins. Annual Review of Biochemistry, 2015, 84, 765-790.	5.0	166
20	Chemical â€˜omicsâ€™ approaches for understanding protein cysteine oxidation in biology. Current Opinion in Chemical Biology, 2011, 15, 88-102.	2.8	160
21	Persulfide Reactivity in the Detection of Protein <i>S</i>-Sulfhydration. ACS Chemical Biology, 2013, 8, 1110-1116.	1.6	159
22	A Periplasmic Reducing System Protects Single Cysteine Residues from Oxidation. Science, 2009, 326, 1109-1111.	6.0	158
23	Redox Regulation of Epidermal Growth Factor Receptor Signaling through Cysteine Oxidation. Biochemistry, 2012, 51, 9954-9965.	1.2	148
24	Rab9 GTPase Regulates Late Endosome Size and Requires Effector Interaction for Its Stability. Molecular Biology of the Cell, 2004, 15, 5420-5430.	0.9	143
25	Redox regulation of protein kinases. Critical Reviews in Biochemistry and Molecular Biology, 2013, 48, 332-356.	2.3	132
26	Mechanisms of Spectral Tuning in Blue Cone Visual Pigments. Journal of Biological Chemistry, 1998, 273, 24583-24591.	1.6	126
27	Global, in situ, site-specific analysis of protein S-sulfenylation. Nature Protocols, 2015, 10, 1022-1037.	5.5	121
28	A chemical approach for detecting sulfenic acid-modified proteins in living cells. Molecular BioSystems, 2008, 4, 521.	2.9	120
29	Regulation of A20 and other OTU deubiquitinases by reversible oxidation. Nature Communications, 2013, 4, 1569.	5.8	120
30	Site-Specific Proteomic Mapping Identifies Selectively Modified Regulatory Cysteine Residues in Functionally Distinct Protein Networks. Chemistry and Biology, 2015, 22, 965-975.	6.2	119
31	VirE1 protein mediates export of the single-stranded DNA-binding protein VirE2 from Agrobacterium tumefaciens into plant cells. Journal of Bacteriology, 1996, 178, 1207-1212.	1.0	111
32	Mining for protein S-sulfenylation in <i>Arabidopsis</i> uncovers redox-sensitive sites. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 21256-21261.	3.3	107
33	Diverse Redoxome Reactivity Profiles of Carbon Nucleophiles. Journal of the American Chemical Society, 2017, 139, 5588-5595.	6.6	104
34	Drug Targets in Mycobacterial Sulfur Metabolism. Infectious Disorders - Drug Targets, 2007, 7, 140-158.	0.4	101
35	Molecular Basis for Redox Activation of Epidermal Growth Factor Receptor Kinase. Cell Chemical Biology, 2016, 23, 837-848.	2.5	100
36	Quantification of Protein Sulfenic Acid Modifications Using Isotopeâ€Coded Dimedone and Iododimedone. Angewandte Chemie - International Edition, 2011, 50, 1342-1345.	7.2	99

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37	Profiling the reactivity of cyclic C-nucleophiles towards electrophilic sulfur in cysteine sulfenic acid. Chemical Science, 2016, 7, 400-415.	3.7	97
38	Activity-Based Sensing for Site-Specific Proteomic Analysis of Cysteine Oxidation. Accounts of Chemical Research, 2020, 53, 20-31.	7.6	89
39	Diurnal oscillations of endogenous H2O2 sustained by p66Shc regulate circadian clocks. Nature Cell Biology, 2019, 21, 1553-1564.	4.6	79
40	A Conserved Mechanism for Sulfonucleotide Reduction. PLoS Biology, 2005, 3, e250.	2.6	76
41	Redox-Sensitive Sulfenic Acid Modification Regulates Surface Expression of the Cardiovascular Voltage-Gated Potassium Channel Kv1.5. Circulation Research, 2012, 111, 842-853.	2.0	74
42	Chemical Dissection of an Essential Redox Switch in Yeast. Chemistry and Biology, 2009, 16, 217-225.	6.2	71
43	DYn-2 Based Identification of Arabidopsis Sulfenomes*. Molecular and Cellular Proteomics, 2015, 14, 1183-1200.	2.5	70
44	Global profiling of distinct cysteine redox forms reveals wide-ranging redox regulation in C. elegans. Nature Communications, 2021, 12, 1415.	5.8	62
45	Chemoselective Ligation of Sulfinic Acids with Arylâ€Nitroso Compounds. Angewandte Chemie - International Edition, 2012, 51, 6502-6505.	7.2	61
46	Substrate Recognition, Protein Dynamics, and Iron-Sulfur Cluster in Pseudomonas aeruginosa Adenosine 5â€²-Phosphosulfate Reductase. Journal of Molecular Biology, 2006, 364, 152-169.	2.0	58
47	A Chemical Approach for the Detection of Protein Sulfinylation. ACS Chemical Biology, 2015, 10, 1825-1830.	1.6	58
48	A universal entropy-driven mechanism for thioredoxinâ€“target recognition. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 7960-7965.	3.3	55
49	3â€˜-Phosphoadenosine-5â€˜-phosphosulfate Reductase in Complex with Thioredoxin:â€‰ A Structural Snapshot in the Catalytic Cycle,. Biochemistry, 2007, 46, 3942-3951.	1.2	51
50	Sulforaphane inhibits pancreatic cancer through disrupting Hsp90â€“p50Cdc37 complex and direct interactions with amino acids residues of Hsp90. Journal of Nutritional Biochemistry, 2012, 23, 1617-1626.	1.9	49
51	Redoxâ€Based Probes for Protein Tyrosine Phosphatases. Angewandte Chemie - International Edition, 2011, 50, 4423-4427.	7.2	48
52	Inactivation of thiol-dependent enzymes by hypothiocyanous acid: role of sulfenyl thiocyanate and sulfenic acid intermediates. Free Radical Biology and Medicine, 2012, 52, 1075-1085.	1.3	48
53	Reactivity, Selectivity, and Stability in Sulfenic Acid Detection: A Comparative Study of Nucleophilic and Electrophilic Probes. Bioconjugate Chemistry, 2016, 27, 1411-1418.	1.8	48
54	Isotope-coded chemical reporter and acid-cleavable affinity reagents for monitoring protein sulfenic acids. Bioorganic and Medicinal Chemistry Letters, 2011, 21, 5015-5020.	1.0	46

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55	Investigation of the Ironâ˜Sulfur Cluster inMycobacterium tuberculosisAPS Reductase:Â Implications for Substrate Binding and Catalysisâ€. Biochemistry, 2005, 44, 14647-14657.	1.2	45
56	Facile synthesis and biological evaluation of a cell-permeable probe to detect redox-regulated proteins. Bioorganic and Medicinal Chemistry Letters, 2009, 19, 356-359.	1.0	45
57	Proteomeâ€Wide Analysis of Cysteine Sâ€Sulfenylation Using a Benzothiazineâ€Based Probe. Current Protocols in Protein Science, 2019, 95, e76.	2.8	44
58	RegB Kinase Activity Is Repressed by Oxidative Formation of Cysteine Sulfenic Acid. Journal of Biological Chemistry, 2013, 288, 4755-4762.	1.6	43
59	Probing the Tetrahymena Group I Ribozyme Reaction in Both Directions. Biochemistry, 2002, 41, 11171-11183.	1.2	41
60	New Targets and Inhibitors of Mycobacterial Sulfur Metabolism. Infectious Disorders - Drug Targets, 2013, 13, 85-115.	0.4	40
61	Wittig reagents for chemoselective sulfenic acid ligation enables global site stoichiometry analysis and redox-controlled mitochondrial targeting. Nature Chemistry, 2021, 13, 1140-1150.	6.6	37
62	Empirical entropic contributions in computational docking: Evaluation in APS reductase complexes. Journal of Computational Chemistry, 2008, 29, 1753-1761.	1.5	34
63	Chemical biology approaches to study protein cysteine sulfenylation. Biopolymers, 2014, 101, 165-172.	1.2	33
64	Identification of residues in TIP47 essential for Rab9 binding. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 7450-7454.	3.3	32
65	Structure-Based Virtual Screening and Biological Evaluation of <i>Mycobacterium tuberculosis</i> Adenosine 5â€²-Phosphosulfate Reductase Inhibitors. Journal of Medicinal Chemistry, 2008, 51, 6627-6630.	2.9	32
66	First-in-Class Inhibitors of Sulfur Metabolism with Bactericidal Activity against Non-Replicating <i>M. tuberculosis</i>. ACS Chemical Biology, 2016, 11, 172-184.	1.6	32
67	Activity of the tetrapyrrole regulator CrtJ is controlled by oxidation of a redox active cysteine located in the DNA binding domain. Molecular Microbiology, 2012, 85, 734-746.	1.2	31
68	Rational design of reversible and irreversible cysteine sulfenic acid-targeted linear C-nucleophiles. Chemical Communications, 2016, 52, 3414-3417.	2.2	31
69	Geometric and Electrostatic Study of the [4Fe-4S] Cluster of Adenosine-5â€²-Phosphosulfate Reductase from Broken Symmetry Density Functional Calculations and Extended X-ray Absorption Fine Structure Spectroscopy. Inorganic Chemistry, 2011, 50, 6610-6625.	1.9	30
70	Proteomic analysis of peptides tagged with dimedone and related probes. Journal of Mass Spectrometry, 2014, 49, 257-265.	0.7	28
71	Thiol-based chemical probes exhibit antiviral activity against SARS-CoV-2 via allosteric disulfide disruption in the spike glycoprotein. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	28
72	Identification of Critical Ligand Binding Determinants in <i>Mycobacterium tuberculosis</i> Adenosine-5â€²-phosphosulfate Reductase. Journal of Medicinal Chemistry, 2009, 52, 5485-5495.	2.9	27

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73	The Chemistry of Thiol Oxidation and Detection. , 2013, , 1-42.		26
74	Redox-based probes as tools to monitor oxidized protein tyrosine phosphatases in living cells. European Journal of Medicinal Chemistry, 2014, 88, 28-33.	2.6	23
75	Endogenous SO2-dependent Smad3 redox modification controls vascular remodeling. Redox Biology, 2021, 41, 101898.	3.9	22
76	Cysteine sulfenylation by CD36 signaling promotes arterial thrombosis in dyslipidemia. Blood Advances, 2020, 4, 4494-4507.	2.5	20
77	Noncovalent complexes of APS reductase from M. tuberculosis: Delineating a mechanistic model using ESI-FTICR MS. Journal of the American Society for Mass Spectrometry, 2007, 18, 167-178.	1.2	19
78	Spectroscopic Studies on the [4Fe-4S] Cluster in Adenosine 5â€²-Phosphosulfate Reductase from Mycobacterium tuberculosis. Journal of Biological Chemistry, 2011, 286, 1216-1226.	1.6	18
79	A continuous spectrophotometric assay for adenosine 5â€²-phosphosulfate reductase activity with sulfite-selective probes. Analytical Biochemistry, 2013, 440, 32-39.	1.1	17
80	Light-Mediated Sulfenic Acid Generation from Photocaged Cysteine Sulfoxide. Organic Letters, 2015, 17, 6014-6017.	2.4	17
81	Mass spectrometric analysis of mycothiol levels in wild-type and mycothiol disulfide reductase mutant Mycobacterium smegmatis. International Journal of Mass Spectrometry, 2011, 305, 151-156.	0.7	16
82	Bioorthogonal Chemical Reporters for Analyzing Protein Sulfenylation in Cells. Current Protocols in Chemical Biology, 2012, 4, 101-122.	1.7	16
83	Efficient microwave-assisted solid phase coupling of nucleosides, small library generation, and mild conditions for release of nucleoside derivatives. Tetrahedron Letters, 2013, 54, 1869-1872.	0.7	15
84	Parallel evaluation of nucleophilic and electrophilic chemical probes for sulfenic acid: Reactivity, selectivity and biocompatibility. Redox Biology, 2021, 46, 102072.	3.9	12
85	Ironâ€"Sulfur Cluster Engineering Provides Insight into the Evolution of Substrate Specificity among Sulfonucleotide Reductases. ACS Chemical Biology, 2012, 7, 306-315.	1.6	11
86	â€˜Omicsâ€™ of natural products and redox biology. Current Opinion in Chemical Biology, 2011, 15, 3-4.	2.8	8
87	An immunochemical approach to detect oxidized protein tyrosine phosphatases using a selective C-nucleophile tag. Molecular BioSystems, 2016, 12, 1790-1798.	2.9	7
88	Knock, Noxâ€"ROS there?. Nature Chemical Biology, 2011, 7, 71-72.	3.9	6
89	Deciphering the Role of Histidine 252 in Mycobacterial Adenosine 5â€²-Phosphosulfate (APS) Reductase Catalysis. Journal of Biological Chemistry, 2011, 286, 28567-28573.	1.6	6
90	Design, Synthesis and Evaluation of Fe-S Targeted Adenosine 5â€²-Phosphosulfate Reductase Inhibitors. Nucleosides, Nucleotides and Nucleic Acids, 2015, 34, 199-220.	0.4	4

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91	Comments on â€˜A critical evaluation of probes for cysteine sulfenic acidâ€™. Current Opinion in Chemical Biology, 2021, 60, 131-133.	2.8	4
92	Crystal Structure of the [4Feâ€“4S] Cluster-Containing Adenosine-5â€²-phosphosulfate Reductase from <i>Mycobacterium tuberculosis</i>. ACS Omega, 2021, 6, 13756-13765.	1.6	1
93	Sulfenic Acid Modification of Kv1.5: A Redoxâ€Sensitive Fate Switch for Channel Surface Expression. FASEB Journal, 2010, 24, 770.2.	0.2	1
94	Functional Site Discovery in a Sulfur Metabolism Enzyme by Using Directed Evolution. ChemBioChem, 2016, 17, 1873-1878.	1.3	0
95	Redox Pathways in Chemical Toxicology. Chemical Research in Toxicology, 2019, 32, 341-341.	1.7	0
96	Call for Papers for the Special Issue on Natural Products in Redox Toxicology. Chemical Research in Toxicology, 2020, 33, 2687-2687.	1.7	0
97	Sulfenic Acid Modification: a Novel Link Between the Cardiovascular K+ Channel, Kv1.5, and Oxidative Stress. FASEB Journal, 2009, 23, 579.5.	0.2	0
98	Painting the Cysteine Chapel: New Tools to Probe Oxidation Biology. FASEB Journal, 2010, 24, 672.1.	0.2	0
99	Protein Cysteine Sulfenylation By CD36-Dependent Reactive Oxygen Species Signaling Promotes Platelet Activation. Blood, 2019, 134, 2338-2338.	0.6	0
100	Detection of the oxidation products of thiols: Disulfides, and sulfenic, sulfinic, and sulfonic acids. , 2022, , 133-152.		0