Joris Messens

List of Publications by Year
in descending order

120 papers	6,395 citations	61984 43 h-index	74163 75 g-index
129 all docs	129 docs citations	129 times ranked	7489 citing authors

#	Article	IF	Citations
1	Hypocrates is a genetically encoded fluorescent biosensor for (pseudo)hypohalous acids and their derivatives. Nature Communications, 2022, 13, 171.	12.8	9
2	Sugar-based cysteine thiols recruited for oxidative stress defense and redox regulation. , 2022, , 533-554.		1
3	Inhibition of basal and glucagon-induced hepatic glucose production by 991 and other pharmacological AMPK activators. Biochemical Journal, 2022, 479, 1317-1336.	3.7	2
4	Discovery of a novel lactate dehydrogenase tetramerization domain using epitope mapping and peptides. Journal of Biological Chemistry, 2021, 296, 100422.	3.4	7
5	Arabidopsis APx-R Is a Plastidial Ascorbate-Independent Peroxidase Regulated by Photomorphogenesis. Antioxidants, 2021, 10, 65.	5.1	9
6	Charge Interactions in a Highly Charge-Depleted Protein. Journal of the American Chemical Society, 2021, 143, 2500-2508.	13.7	15
7	<i>Mycobacterium smegmatis</i> Resists the Bactericidal Activity of Hypochlorous Acid Produced in Neutrophil Phagosomes. Journal of Immunology, 2021, 206, 1901-1912.	0.8	8
8	Prdx1 Interacts with ASK1 upon Exposure to H2O2 and Independently of a Scaffolding Protein. Antioxidants, 2021, 10, 1060.	5.1	6
9	Peroxiredoxins wear many hats: Factors that fashion their peroxide sensing personalities. Redox Biology, 2021, 42, 101959.	9.0	40
10	Thiol-disulphide independent in-cell trapping for the identification of peroxiredoxin 2 interactors. Redox Biology, 2021, 46, 102066.	9.0	6
11	Dehydrin ERD14 activates glutathione transferase Phi9 in Arabidopsis thaliana under osmotic stress. Biochimica Et Biophysica Acta - General Subjects, 2020, 1864, 129506.	2.4	28
12	Efficiency of the four proteasome subtypes to degrade ubiquitinated or oxidized proteins. Scientific Reports, 2020, 10, 15765.	3.3	29
13	Oxidative Stress-Induced STIM2 Cysteine Modifications Suppress Store-Operated Calcium Entry. Cell Reports, 2020, 33, 108292.	6.4	19
14	Redox regulation of the mitochondrial calcium transport machinery. Current Opinion in Physiology, 2020, 17, 138-148.	1.8	1
15	A role for annexin A2 in scaffolding the peroxiredoxin 2â€“STAT3 redox relay complex. Nature Communications, 2020, 11, 4512.	12.8	29
16	Redox Modification of the Iron-Sulfur Glutaredoxin GRXS17 Activates Holdase Activity and Protects Plants from Heat Stress. Plant Physiology, 2020, 184, 676-692.	4.8	33
17	Identification of Sulfenylated Cysteines in Arabidopsis thaliana Proteins Using a Disulfide-Linked Peptide Reporter. Frontiers in Plant Science, 2020, 11, 777.	3.6	31
18	Interrogating the Lactate Dehydrogenase Tetramerization Site Using (Stapled) Peptides. Journal of Medicinal Chemistry, 2020, 63, 4628-4643.	6.4	15

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19	Ultrasensitive Genetically Encoded Indicator for Hydrogen Peroxide Identifies Roles for the Oxidant in Cell Migration and Mitochondrial Function. Cell Metabolism, 2020, 31, 642-653.e6.	16.2	202
20	Methionine sulfoxide reductase B from Corynebacterium diphtheriae catalyzes sulfoxide reduction via an intramolecular disulfide cascade. Journal of Biological Chemistry, 2020, 295, 3664-3677.	3.4	7
21	Redoxâ€regulated methionine oxidation of <i>Arabidopsis thaliana</i> glutathione transferase Phi9 induces Hâ€site flexibility. Protein Science, 2019, 28, 56-67.	7.6	16
22	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.	7.1	107
23	Bifunctional Chloroplastic DJ-1B from Arabidopsis thaliana is an Oxidation-Robust Holdase and a Glyoxalase Sensitive to H2O2. Antioxidants, 2019, 8, 8.	5.1	17
24	<i>In vivo</i> detection of protein cysteine sulfenylation in plastids. Plant Journal, 2019, 97, 765-778.	5.7	46
25	Protein Promiscuity in H₂O₂Signaling. Antioxidants and Redox Signaling, 2019, 30, 1285-1324.	5.4	26
26	An essential thioredoxin is involved in the control of the cell cycle in the bacterium Caulobacter crescentus. Journal of Biological Chemistry, 2018, 293, 3839-3848.	3.4	18
27	Pathways crossing mammalian and plant sulfenomic landscapes. Free Radical Biology and Medicine, 2018, 122, 193-201.	2.9	31
28	Self-protection of cytosolic malate dehydrogenase against oxidative stress in Arabidopsis. Journal of Experimental Botany, 2018, 69, 3491-3505.	4.8	48
29	Chemistry and Redox Biology of Mycothiol. Antioxidants and Redox Signaling, 2018, 28, 487-504.	5.4	45
30	Disulfide bond formation protects Arabidopsis thaliana glutathione transferase tau 23 from oxidative damage. Biochimica Et Biophysica Acta - General Subjects, 2018, 1862, 775-789.	2.4	20
31	Oxidative stressâ€triggered interactions between the succinylâ€and acetylâ€proteomes of rice leaves. Plant, Cell and Environment, 2018, 41, 1139-1153.	5.7	79
32	Structural snapshots of OxyR reveal the peroxidatic mechanism of H ₂ O ₂ sensing. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E11623-E11632.	7.1	42
33	Mycothiol, a Low-Molecular-Weight Thiol Drafted for Oxidative Stress Defense Duty. , 2018, , 331-356.		0
34	Arabidopsis thaliana dehydroascorbate reductase 2: Conformational flexibility during catalysis. Scientific Reports, 2017, 7, 42494.	3.3	13
35	Structural and biochemical analysis of Escherichia coli ObgE, a central regulator of bacterial persistence. Journal of Biological Chemistry, 2017, 292, 5871-5883.	3.4	20
36	European contribution to the study of ROS: A summary of the findings and prospects for the future from the COST action BM1203 (EU-ROS). Redox Biology, 2017, 13, 94-162.	9.0	242

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37	The antibacterial prodrug activator Rv2466c is a mycothiol-dependent reductase in the oxidative stress response of Mycobacterium tuberculosis. Journal of Biological Chemistry, 2017, 292, 13097-13110.	3.4	27
38	Identification of dimedone-trapped sulfenylated proteins in plants under stress. Biochemistry and Biophysics Reports, 2017, 9, 106-113.	1.3	21
39	The glyceraldehyde-3-phosphate dehydrogenase GapDH of Corynebacterium diphtheriae is redox-controlled by protein S-mycothiolation under oxidative stress. Scientific Reports, 2017, 7, 5020.	3.3	24
40	The Enzymatic Nature of Ascorbate Recycling. Free Radical Biology and Medicine, 2017, 108, S21.	2.9	0
41	Investigating the Molecular Mechanisms Behind Uncharacterized Cysteine Losses from Prediction of Their Oxidation State. Human Mutation, 2017, 38, 86-94.	2.5	4
42	The Arsenic Detoxification System in Corynebacteria. Advances in Applied Microbiology, 2017, 99, 103-137.	2.4	48
43	Thiol Redox and p<i>K</i>_a Properties of Mycothiol, the Predominant Lowâ€Molecularâ€Weight Thiol Cofactor in the Actinomycetes. ChemBioChem, 2016, 17, 1689-1692.	2.6	23
44	Sulfur Denitrosylation by an Engineered Trx-like DsbG Enzyme Identifies Nucleophilic Cysteine Hydrogen Bonds as Key Functional Determinant. Journal of Biological Chemistry, 2016, 291, 15020-15028.	3.4	3
45	Lack of GLYCOLATE OXIDASE1, but Not GLYCOLATE OXIDASE2, Attenuates the Photorespiratory Phenotype of CATALASE2-Deficient Arabidopsis. Plant Physiology, 2016, 171, 1704-1719.	4.8	84
46	Bioplastic hydroxyl radical trapping. Nature Chemical Biology, 2016, 12, 307-308.	8.0	8
47	Revisiting sulfur H-bonds in proteins: The example of peroxiredoxin AhpE. Scientific Reports, 2016, 6, 30369.	3.3	52
48	The active site architecture in peroxiredoxins: a case study on Mycobacterium tuberculosis AhpE. Chemical Communications, 2016, 52, 10293-10296.	4.1	16
49	SHORT-ROOT Deficiency Alleviates the Cell Death Phenotype of the <i>Arabidopsis catalase2</i> Mutant under Photorespiration-Promoting Conditions. Plant Cell, 2016, 28, 1844-1859.	6.6	42
50	Diagonal chromatography to study plant protein modifications. Biochimica Et Biophysica Acta - Proteins and Proteomics, 2016, 1864, 945-951.	2.3	0
51	The <scp><i>C</i></scp><i>orynebacterium glutamicum</i> mycothiol peroxidase is a reactive oxygen speciesâ€scavenging enzyme that shows promiscuity in thiol redox control. Molecular Microbiology, 2015, 96, 1176-1191.	2.5	45
52	Oxidative post-translational modifications of cysteine residues in plant signal transduction. Journal of Experimental Botany, 2015, 66, 2923-2934.	4.8	163
53	Redox Strategies for Crop Improvement. Antioxidants and Redox Signaling, 2015, 23, 1186-1205.	5.4	22
54	DYn-2 Based Identification of Arabidopsis Sulfenomes*. Molecular and Cellular Proteomics, 2015, 14, 1183-1200.	3.8	70

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55	Protein Methionine Sulfoxide Dynamics in Arabidopsis thaliana under Oxidative Stress. Molecular and Cellular Proteomics, 2015, 14, 1217-1229.	3.8	88
56	Corynebacterium diphtheriae Methionine Sulfoxide Reductase A Exploits a Unique Mycothiol Redox Relay Mechanism. Journal of Biological Chemistry, 2015, 290, 11365-11375.	3.4	25
57	Cysteines under ROS attack in plants: a proteomics view. Journal of Experimental Botany, 2015, 66, 2935-2944.	4.8	103
58	The concerted action of a positive charge and hydrogen bonds dynamically regulates the p<i>K</i>_a of the nucleophilic cysteine in the NrdHâ€redoxin family. Protein Science, 2014, 23, 238-242.	7.6	15
59	Mycothiol/Mycoredoxin 1-dependent Reduction of the Peroxiredoxin AhpE from Mycobacterium tuberculosis. Journal of Biological Chemistry, 2014, 289, 5228-5239.	3.4	48
60	Protein <i>S-</i>Mycothiolation Functions as Redox-Switch and Thiol Protection Mechanism in <i>Corynebacterium glutamicum</i> Under Hypochlorite Stress. Antioxidants and Redox Signaling, 2014, 20, 589-605.	5.4	68
61	A New Role for Escherichia coli DsbC Protein in Protection against Oxidative Stress. Journal of Biological Chemistry, 2014, 289, 12356-12364.	3.4	28
62	Sulfenome mining in <i>Arabidopsis thaliana</i>. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 11545-11550.	7.1	163
63	Engineered coryneform bacteria as a bio-tool for arsenic remediation. Applied Microbiology and Biotechnology, 2014, 98, 10143-10152.	3.6	42
64	Wheat germ inÂvitro translation to produce one of the most toxic sodium channel specific toxins. Bioscience Reports, 2014, 34, .	2.4	2
65	Redox Homeostasis. , 2013, , 59-84.		3
66	Understanding the p<i>K</i>_aof Redox Cysteines: The Key Role of Hydrogen Bonding. Antioxidants and Redox Signaling, 2013, 18, 94-127.	5.4	203
67	Thiolâ€“Disulfide Exchange in Signaling: Disulfide Bonds As a Switch. Antioxidants and Redox Signaling, 2013, 18, 1594-1596.	5.4	37
68	Low-Molecular-Weight Thiols in Thiolâ€“Disulfide Exchange. Antioxidants and Redox Signaling, 2013, 18, 1642-1653.	5.4	133
69	Dissecting the Machinery That Introduces Disulfide Bonds in Pseudomonas aeruginosa. MBio, 2013, 4, e00912-13.	4.1	45
70	NrdH-redoxin of Mycobacterium tuberculosis and Corynebacterium glutamicum Dimerizes at High Protein Concentration and Exclusively Receives Electrons from Thioredoxin Reductase. Journal of Biological Chemistry, 2013, 288, 7942-7955.	3.4	14
71	The Quiescin Sulfhydryl Oxidase (hQSOX1b) Tunes the Expression of Resistin-Like Molecule Alpha (RELM-Î± or mFIZZ1) in a Wheat Germ Cell-Free Extract. PLoS ONE, 2013, 8, e55621.	2.5	7
72	Efflux Permease CgAcr3-1 of Corynebacterium glutamicum Is an Arsenite-specific Antiporter. Journal of Biological Chemistry, 2012, 287, 723-735.	3.4	35

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73	Mycoredoxinâ€1 is one of the missing links in the oxidative stress defence mechanism of <scp>M</scp>ycobacteria. Molecular Microbiology, 2012, 86, 787-804.	2.5	86
74	A bacterial-two-hybrid selection system for one-step isolation of intracellularly functional Nanobodies. Archives of Biochemistry and Biophysics, 2012, 526, 114-123.	3.0	46
75	A novel expression system for production of soluble prion proteins in E. coli. Microbial Cell Factories, 2012, 11, 6.	4.0	22
76	The thermodynamics of thiol sulfenylation. Free Radical Biology and Medicine, 2012, 52, 1473-1485.	2.9	22
77	How Proteins Form Disulfide Bonds. Antioxidants and Redox Signaling, 2011, 15, 49-66.	5.4	160
78	Corynebacterium glutamicum survives arsenic stress with arsenate reductases coupled to two distinct redox mechanisms. Molecular Microbiology, 2011, 82, 998-1014.	2.5	40
79	Protein sulfenic acid formation: From cellular damage to redox regulation. Free Radical Biology and Medicine, 2011, 51, 314-326.	2.9	234
80	The conserved active site tryptophan of thioredoxin has no effect on its redox properties. Protein Science, 2010, 19, 190-194.	7.6	11
81	Structure, Function, and Mechanism of Thioredoxin Proteins. Antioxidants and Redox Signaling, 2010, 13, 1205-1216.	5.4	324
82	Arsenate Reductase, Mycothiol, and Mycoredoxin Concert Thiol/Disulfide Exchange. Journal of Biological Chemistry, 2009, 284, 15107-15116.	3.4	93
83	How Thioredoxin Dissociates Its Mixed Disulfide. PLoS Computational Biology, 2009, 5, e1000461.	3.2	67
84	A Periplasmic Reducing System Protects Single Cysteine Residues from Oxidation. Science, 2009, 326, 1109-1111.	12.6	158
85	Coupling of Domain Swapping to Kinetic Stability in a Thioredoxin Mutant. Journal of Molecular Biology, 2009, 385, 1590-1599.	4.2	23
86	The Zinc Center Influences the Redox and Thermodynamic Properties of Escherichia coli Thioredoxin 2. Journal of Molecular Biology, 2009, 386, 60-71.	4.2	29
87	Enzymatic Catalysis: The Emerging Role of Conceptual Density Functional Theory. Journal of Physical Chemistry B, 2009, 113, 13465-13475.	2.6	77
88	The disulphide isomerase DsbC cooperates with the oxidase DsbA in a DsbDâ€independent manner. Molecular Microbiology, 2008, 67, 336-349.	2.5	68
89	Nonspecific base recognition mediated by water bridges and hydrophobic stacking in ribonuclease I from <i>Escherichia coli</i>. Protein Science, 2008, 17, 681-690.	7.6	10
90	Heterologous expression, purification and characterisation of the extracellular domain of trypanosome invariant surface glycoprotein ISG75. Journal of Biotechnology, 2008, 135, 247-254.	3.8	27

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91	The Oxidase DsbA Folds a Protein with a Nonconsecutive Disulfide. Journal of Biological Chemistry, 2007, 282, 31302-31307.	3.4	71
92	The Conserved Active Site Proline Determines the Reducing Power of Staphylococcus aureus Thioredoxin. Journal of Molecular Biology, 2007, 368, 800-811.	4.2	73
93	Pathways of disulfide bond formation in Escherichia coli. International Journal of Biochemistry and Cell Biology, 2006, 38, 1050-1062.	2.8	138
94	Interplay Between Ion Binding and Catalysis in the Thioredoxin-coupled Arsenate Reductase Family. Journal of Molecular Biology, 2006, 360, 826-838.	4.2	15
95	Arsenate Reduction: Thiol Cascade Chemistry with Convergent Evolution. Journal of Molecular Biology, 2006, 362, 1-17.	4.2	137
96	Combining site-specific mutagenesis and seeding as a strategy to crystallize `difficult' proteins: the case ofStaphylococcus aureusthioredoxin. Acta Crystallographica Section F: Structural Biology Communications, 2006, 62, 1255-1258.	0.7	6
97	The Activation of Electrophile, Nucleophile and Leaving Group during the Reaction Catalysed by pI258 Arsenate Reductase. ChemBioChem, 2006, 7, 981-989.	2.6	36
98	The structure of a triple mutant of pI258 arsenate reductase fromStaphylococcus aureusand its 5-thio-2-nitrobenzoic acid adduct. Acta Crystallographica Section D: Biological Crystallography, 2004, 60, 1180-1184.	2.5	10
99	A Computational and Conceptual DFT Study on the Michaelis Complex of pI258 Arsenate Reductase. Structural Aspects and Activation of the Electrophile and Nucleophile. Journal of Physical Chemistry B, 2004, 108, 17216-17225.	2.6	28
100	How Thioredoxin can Reduce a Buried Disulphide Bond. Journal of Molecular Biology, 2004, 339, 527-537.	4.2	41
101	Solving the phase problem for carbohydrate-binding proteins using selenium derivatives of their ligands: a case study involving the bacterial F17-G adhesin. Acta Crystallographica Section D: Biological Crystallography, 2003, 59, 1012-1015.	2.5	21
102	Purification of an oxidation-sensitive enzyme, pI258 arsenate reductase from Staphylococcus aureus. Journal of Chromatography B: Analytical Technologies in the Biomedical and Life Sciences, 2003, 790, 217-227.	2.3	7
103	Specific Potassium Binding Stabilizes pI258 Arsenate Reductase from Staphylococcus aureus. Journal of Biological Chemistry, 2003, 278, 24673-24679.	3.4	21
104	The fimbrial adhesin F17â€G of enterotoxigenic <i>Escherichia coli</i> has an immunoglobulinâ€like lectin domain that binds <i>N</i>â€acetylglucosamine. Molecular Microbiology, 2003, 49, 705-715.	2.5	89
105	All intermediates of the arsenate reductase mechanism, including an intramolecular dynamic disulfide cascade. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 8506-8511.	7.1	75
106	Intricate Interactions within the ccd Plasmid Addiction System. Journal of Biological Chemistry, 2002, 277, 3733-3742.	3.4	69
107	Kinetics and active site dynamics of Staphylococcus aureus arsenate reductase. Journal of Biological Inorganic Chemistry, 2002, 7, 146-156.	2.6	48
108	1H, 13C and 15N backbone resonance assignment of the arsenate reductase from Staphylococcus aureus in its reduced state. Journal of Biomolecular NMR, 2001, 20, 95-96.	2.8	8

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109	Arsenate reductase from S. aureus plasmid pI258 is a phosphatase drafted for redox duty. Nature Structural Biology, 2001, 8, 843-847.	9.7	93
110	Development of a downstream process for the isolation of Staphylococcus aureus arsenate reductase overproduced in Escherichia coli. Biomedical Applications, 2000, 737, 167-178.	1.7	4
111	The thermodynamic stability of the proteins of the ccd plasmid addiction system. Journal of Molecular Biology, 2000, 299, 1373-1386.	4.2	32
112	New structural insights into the molecular deciphering of mycobacterial lipoglycan binding to C-type lectins: lipoarabinomannan glycoform characterization and quantification by capillary electrophoresis at the subnanomole level. Journal of Molecular Biology, 2000, 299, 1353-1362.	4.2	55
113	Structural basis of carbohydrate recognition by lectin II from Ulex europaeus , a protein with a promiscuous carbohydrate-binding site 1 1Edited by R. Huber. Journal of Molecular Biology, 2000, 301, 987-1002.	4.2	59
114	Interactions of CcdB with DNA Gyrase. Journal of Biological Chemistry, 1999, 274, 10936-10944.	3.4	103
115	The Essential Catalytic Redox Couple in Arsenate Reductase from Staphylococcus aureus. Biochemistry, 1999, 38, 16857-16865.	2.5	63
116	Synthesis of l-xylo-hexos-2-ulose (l-sorbosone) and its characterisation by chromatographic and spectroscopic techniques. Journal of Chromatography A, 1998, 811, 261-268.	3.7	3
117	Anticoagulant repertoire of the hookworm Ancylostoma caninum.. Proceedings of the National Academy of Sciences of the United States of America, 1996, 93, 2149-2154.	7.1	251
118	Surface Expression and Ligand-Based Selection of cDNAs Fused to Filamentous Phage Gene VI. Nature Biotechnology, 1995, 13, 378-382.	17.5	141
119	Highâ€"Level Secretion and Very Efficient Isotopic Labeling of Tick Anticoagulant Peptide (TAP) Expressed in the Methylotrophic Yeast, Pichia pastoris. Bio/technology, 1994, 12, 1119-1124.	1.5	161
120	Synthesis of Glial Fibrillary Acidic Protein in Rat C6Glioma in Chemically Defined Medium: Cyclic AMP-Dependent Transcriptional and Translational Regulation. Journal of Neurochemistry, 1992, 58, 2071-2080.	3.9	42