Shelley D Copley

List of Publications by Year
in descending order

43 papers	3,142 citations	201674 27 h-index	265206 42 g-index
65 all docs	65 docs citations	65 times ranked	3846 citing authors

#	Article	IF	Citations
1	How to Recruit a Promiscuous Enzyme to Serve a New Function. Biochemistry, 2023, 62, 300-308.	2.5	4
2	Setting the stage for evolution of a new enzyme. Current Opinion in Structural Biology, 2021, 69, 41-49.	5.7	18
3	Amplicon remodeling and genomic mutations drive population dynamics after segmental amplification. Molecular Biology and Evolution, 2021, , .	8.9	1
4	The physical basis and practical consequences of biological promiscuity. Physical Biology, 2020, 17, 051001.	1.8	21
5	Evolution of new enzymes by gene duplication and divergence. FEBS Journal, 2020, 287, 1262-1283.	4.7	85
6	Determinants for Efficient Editing with Cas9-Mediated Recombineering in <i>Escherichia coli</i>. ACS Synthetic Biology, 2020, 9, 1083-1099.	3.8	15
7	Hidden resources in the <i>Escherichia coli</i> genome restore PLP synthesis and robust growth after deletion of the essential gene <i>pdxB</i>. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 24164-24173.	7.1	23
8	Mutations that improve efficiency of a weak-link enzyme are rare compared to adaptive mutations elsewhere in the genome. ELife, 2019, 8, .	6.0	17
9	Successful aerobic bioremediation of groundwater contaminated with higher chlorinated phenols by indigenous degrader bacteria. Water Research, 2018, 138, 118-128.	11.3	30
10	Genome-Wide Analysis of Transcriptional Changes and Genes That Contribute to Fitness during Degradation of the Anthropogenic Pollutant Pentachlorophenol by Sphingobium chlorophenolicum. MSystems, 2018, 3, .	3.8	4
11	Synonymous mutations make dramatic contributions to fitness when growth is limited by a weak-link enzyme. PLoS Genetics, 2018, 14, e1007615.	3.5	77
12	Shining a light on enzyme promiscuity. Current Opinion in Structural Biology, 2017, 47, 167-175.	5.7	133
13	A Synonymous Mutation Upstream of the Gene Encoding a Weak-Link Enzyme Causes an Ultrasensitive Response in Growth Rate. Journal of Bacteriology, 2016, 198, 2853-2863.	2.2	23
14	Members of a Novel Kinase Family (DUF1537) Can Recycle Toxic Intermediates into an Essential Metabolite. ACS Chemical Biology, 2016, 11, 2304-2311.	3.4	12
15	An evolutionary biochemist's perspective on promiscuity. Trends in Biochemical Sciences, 2015, 40, 72-78.	7.5	132
16	Differential Effects of a Mutation on the Normal and Promiscuous Activities of Orthologs: Implications for Natural and Directed Evolution. Molecular Biology and Evolution, 2015, 32, 100-108.	8.9	64
17	A Radical Intermediate in the Conversion of Pentachlorophenol to Tetrachlorohydroquinone by <i>Sphingobium chlorophenolicum</i>. Biochemistry, 2014, 53, 6539-6549.	2.5	13
18	An evolutionary perspective on protein moonlighting. Biochemical Society Transactions, 2014, 42, 1684-1691.	3.4	62

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19	A versatile and highly efficient method for scarless genome editing in Escherichia coli and Salmonella enterica. BMC Biotechnology, 2014, 14, 84.	3.3	45
20	CodaChrome: a tool for the visualization of proteome conservation across all fully sequenced bacterial genomes. BMC Genomics, 2014, 15, 65.	2.8	3
21	Sequestration of a highly reactive intermediate in an evolving pathway for degradation of pentachlorophenol. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, E2182-90.	7.1	40
22	The Whole Genome Sequence of Sphingobium chlorophenolicum L-1: Insights into the Evolution of the Pentachlorophenol Degradation Pathway. Genome Biology and Evolution, 2012, 4, 184-198.	2.5	73
23	Pentachlorophenol Hydroxylase, a Poorly Functioning Enzyme Required for Degradation of Pentachlorophenol by <i>Sphingobium chlorophenolicum</i>. Biochemistry, 2012, 51, 3848-3860.	2.5	41
24	Moonlighting is mainstream: Paradigm adjustment required. BioEssays, 2012, 34, 578-588.	2.5	171
25	Toward a Systems Biology Perspective on Enzyme Evolution. Journal of Biological Chemistry, 2012, 287, 3-10.	3.4	62
26	Three serendipitous pathways in <i>E. coli</i> can bypass a block in pyridoxalâ€5â€²â€phosphate synthesis. Molecular Systems Biology, 2010, 6, 436.	7.2	102
27	Evolution of efficient pathways for degradation of anthropogenic chemicals. Nature Chemical Biology, 2009, 5, 559-566.	8.0	176
28	Prediction of function in protein superfamilies. F1000 Biology Reports, 2009, 1, 91.	4.0	4
29	A compromise required by gene sharing enables survival: Implications for evolution of new enzyme activities. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 13497-13502.	7.1	61
30	Mechanism of the Severe Inhibition of Tetrachlorohydroquinone Dehalogenase by Its Aromatic Substrates. Biochemistry, 2007, 46, 4438-4447.	2.5	16
31	Pre-Steady-State Kinetic Studies of the Reductive Dehalogenation Catalyzed by Tetrachlorohydroquinone Dehalogenase. Biochemistry, 2007, 46, 13211-13222.	2.5	37
32	The possibility of alternative microbial life on Earth. International Journal of Astrobiology, 2005, 4, 165-173.	1.6	82
33	A mechanism for the association of amino acids with their codons and the origin of the genetic code. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 4442-4447.	7.1	107
34	A Mechanistic Investigation of the Thiolâ^'Disulfide Exchange Step in the Reductive Dehalogenation Catalyzed by Tetrachlorohydroquinone Dehalogenase. Biochemistry, 2005, 44, 10360-10368.	2.5	25
35	Genome Shuffling Improves Degradation of the Anthropogenic Pesticide Pentachlorophenol by Sphingobium chlorophenolicum ATCC 39723. Applied and Environmental Microbiology, 2004, 70, 2391-2397.	3.1	151
36	Divergence of Function in the Thioredoxin Fold Suprafamily:Â Evidence for Evolution of Peroxiredoxins from a Thioredoxin-like Ancestorâ€. Biochemistry, 2004, 43, 13981-13995.	2.5	141

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37	Enzymes with extra talents: moonlighting functions and catalytic promiscuity. Current Opinion in Chemical Biology, 2003, 7, 265-272.	6.1	487
38	A Previously Unrecognized Step in Pentachlorophenol Degradation in Sphingobium chlorophenolicum Is Catalyzed by Tetrachlorobenzoquinone Reductase (PcpD). Journal of Bacteriology, 2003, 185, 302-310.	2.2	69
39	Characterization of the Initial Steps in the Reductive Dehalogenation Catalyzed by Tetrachlorohydroquinone Dehalogenase. Biochemistry, 2002, 41, 1315-1322.	2.5	31
40	Lateral gene transfer and parallel evolution in the history of glutathione biosynthesis genes. Genome Biology, 2002, 3, research0025.1.	9.6	128
41	Evolution of a metabolic pathway for degradation of a toxic xenobiotic: the patchwork approach. Trends in Biochemical Sciences, 2000, 25, 261-265.	7.5	173
42	Recruitment of a Double Bond Isomerase To Serve as a Reductive Dehalogenase during Biodegradation of Pentachlorophenolâ€. Biochemistry, 2000, 39, 5303-5311.	2.5	101
43	Evidence ThatpcpAEncodes 2,6-Dichlorohydroquinone Dioxygenase, the Ring Cleavage Enzyme Required for Pentachlorophenol Degradation inSphingomonas chlorophenolicaStrain ATCC 39723â€. Biochemistry, 1999, 38, 7659-7669.	2.5	81