Sarah O'Connor

List of Publications by Year
in descending order

118 papers	8,173 citations	44069 48 h-index	53230 85 g-index
142 all docs	142 docs citations	142 times ranked	6638 citing authors

#	Article	IF	Citations
1	Chemistry and biology of monoterpene indole alkaloid biosynthesis. Natural Product Reports, 2006, 23, 532.	10.3	861
2	De novo production of the plant-derived alkaloid strictosidine in yeast. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 3205-3210.	7.1	373
3	Effect of N-linked glycosylation on glycopeptide and glycoprotein structure. Current Opinion in Chemical Biology, 1999, 3, 643-649.	6.1	367
4	An alternative route to cyclic terpenes by reductive cyclization in iridoid biosynthesis. Nature, 2012, 492, 138-142.	27.8	298
5	Missing enzymes in the biosynthesis of the anticancer drug vinblastine in Madagascar periwinkle. Science, 2018, 360, 1235-1239.	12.6	279
6	Standards for plant synthetic biology: a common syntax for exchange of <scp>DNA</scp> parts. New Phytologist, 2015, 208, 13-19.	7.3	263
7	Integrating carbonâ€“halogen bond formation into medicinal plant metabolism. Nature, 2010, 468, 461-464.	27.8	204
8	Strictosidine Synthase:â€‰ Mechanism of a Pictetâˆ'Spengler Catalyzing Enzyme. Journal of the American Chemical Society, 2008, 130, 710-723.	13.7	190
9	Genomeâ€guided investigation of plant natural product biosynthesis. Plant Journal, 2015, 82, 680-692.	5.7	186
10	The bHLH transcription factor BIS1 controls the iridoid branch of the monoterpenoid indole alkaloid pathway in <i>Catharanthus roseus</i>. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 8130-8135.	7.1	176
11	Development of Transcriptomic Resources for Interrogating the Biosynthesis of Monoterpene Indole Alkaloids in Medicinal Plant Species. PLoS ONE, 2012, 7, e52506.	2.5	150
12	Engineering of Secondary Metabolism. Annual Review of Genetics, 2015, 49, 71-94.	7.6	125
13	A Stereoselective Hydroxylation Step of Alkaloid Biosynthesis by a Unique Cytochrome P450 in Catharanthus roseus. Journal of Biological Chemistry, 2011, 286, 16751-16757.	3.4	124
14	An NPF transporter exports a central monoterpene indole alkaloid intermediate from the vacuole. Nature Plants, 2017, 3, 16208.	9.3	123
15	Opportunities in metabolic engineering to facilitate scalable alkaloid production. Nature Chemical Biology, 2009, 5, 292-300.	8.0	122
16	A virus-induced gene silencing approach to understanding alkaloid metabolism in Catharanthus roseus. Phytochemistry, 2011, 72, 1969-1977.	2.9	121
17	A Pressure Test to Make 10 Molecules in 90 Days: External Evaluation of Methods to Engineer Biology. Journal of the American Chemical Society, 2018, 140, 4302-4316.	13.7	118
18	A three enzyme system to generate the Strychnos alkaloid scaffold from a central biosynthetic intermediate. Nature Communications, 2017, 8, 316.	12.8	117

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19	Metabolic reprogramming of periwinkle plant culture. Nature Chemical Biology, 2009, 5, 151-153.	8.0	109
20	Phylogenomic Mining of the Mints Reveals Multiple Mechanisms Contributing to the Evolution of Chemical Diversity in Lamiaceae. Molecular Plant, 2018, 11, 1084-1096.	8.3	109
21	Reengineering a Tryptophan Halogenase To Preferentially Chlorinate a Direct Alkaloid Precursor. Journal of the American Chemical Society, 2011, 133, 19346-19349.	13.7	104
22	A molecular basis for glycosylation-induced conformational switching. Chemistry and Biology, 1998, 5, 427-437.	6.0	103
23	Unlocking the Diversity of Alkaloids in Catharanthus roseus: Nuclear Localization Suggests Metabolic Channeling in Secondary Metabolism. Chemistry and Biology, 2015, 22, 336-341.	6.0	103
24	Silencing of tryptamine biosynthesis for production of nonnatural alkaloids in plant culture. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 13673-13678.	7.1	100
25	A Pair of Tabersonine 16-Hydroxylases Initiates the Synthesis of Vindoline in an Organ-Dependent Manner in<i>Catharanthus roseus</i>Â Â Â. Plant Physiology, 2013, 163, 1792-1803.	4.8	97
26	Biocatalytic production of tetrahydroisoquinolines. Tetrahedron Letters, 2012, 53, 1071-1074.	1.4	95
27	Homolog of tocopherol <i>C</i> methyltransferases catalyzes <i>N</i> methylation in anticancer alkaloid biosynthesis. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 18793-18798.	7.1	94
28	Recent progress in the metabolic engineering of alkaloids in plant systems. Current Opinion in Biotechnology, 2013, 24, 354-365.	6.6	86
29	Structural investigation of heteroyohimbine alkaloid synthesis reveals active site elements that control stereoselectivity. Nature Communications, 2016, 7, 12116.	12.8	85
30	Directed Biosynthesis of Alkaloid Analogs in the Medicinal PlantCatharanthus roseus. Journal of the American Chemical Society, 2006, 128, 14276-14277.	13.7	84
31	Substrate specificity of strictosidine synthase. Bioorganic and Medicinal Chemistry Letters, 2006, 16, 2475-2478.	2.2	83
32	New developments in engineering plant metabolic pathways. Current Opinion in Biotechnology, 2016, 42, 126-132.	6.6	83
33	Rapid Identification of Enzyme Variants for Reengineered Alkaloid Biosynthesis in Periwinkle. Chemistry and Biology, 2007, 14, 888-897.	6.0	81
34	Biosynthesis of the ergot alkaloids. Natural Product Reports, 2014, 31, 1328-1338.	10.3	81
35	Identification and Characterization of the Iridoid Synthase Involved in Oleuropein Biosynthesis in Olive (Olea europaea) Fruits. Journal of Biological Chemistry, 2016, 291, 5542-5554.	3.4	74
36	The evolutionary origins of the cat attractant nepetalactone in catnip. Science Advances, 2020, 6, eaba0721.	10.3	70

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37	Diversification of Monoterpene Indole Alkaloid Analogs through Cross-Coupling. Organic Letters, 2013, 15, 2850-2853.	4.6	69
38	Redesign of a Central Enzyme in Alkaloid Biosynthesis. Chemistry and Biology, 2006, 13, 1137-1141.	6.0	68
39	An Old Yellow Enzyme Gene Controls the Branch Point between <i>Aspergillus fumigatus</i> and <i>Claviceps purpurea</i> Ergot Alkaloid Pathways. Applied and Environmental Microbiology, 2010, 76, 3898-3903.	3.1	67
40	Gene Discovery in <i>Gelsemium</i> Highlights Conserved Gene Clusters in Monoterpene Indole Alkaloid Biosynthesis. ChemBioChem, 2019, 20, 83-87.	2.6	66
41	The complexity of intercellular localisation of alkaloids revealed by singleâ€cell metabolomics. New Phytologist, 2019, 224, 848-859.	7.3	65
42	Probing the Effect of the Outer Saccharide Residues ofN-Linked Glycans on Peptide Conformation. Journal of the American Chemical Society, 2001, 123, 6187-6188.	13.7	62
43	Discovery and Reconstitution of the Cycloclavine Biosynthetic Pathwayâ€"Enzymatic Formation of a Cyclopropyl Group. Angewandte Chemie - International Edition, 2015, 54, 5117-5121.	13.8	61
44	Structural determinants of reductive terpene cyclization in iridoid biosynthesis. Nature Chemical Biology, 2016, 12, 6-8.	8.0	58
45	Iridoid Synthase Activity Is Common among the Plant Progesterone 5Î²-Reductase Family. Molecular Plant, 2015, 8, 136-152.	8.3	57
46	Controlling a Structural Branch Point in Ergot Alkaloid Biosynthesis. Journal of the American Chemical Society, 2010, 132, 12835-12837.	13.7	56
47	Uncoupled activation and cyclization in catmint reductive terpenoid biosynthesis. Nature Chemical Biology, 2019, 15, 71-79.	8.0	56
48	A Role for Old Yellow Enzyme in Ergot Alkaloid Biosynthesis. Journal of the American Chemical Society, 2010, 132, 1776-1777.	13.7	54
49	Characterization of a second secologanin synthase isoform producing both secologanin and secoxyloganin allows enhanced de novo assembly of a Catharanthus roseus transcriptome. BMC Genomics, 2015, 16, 619.	2.8	54
50	Discovery of a P450-catalyzed step in vindoline biosynthesis: a link between the aspidosperma and eburnamine alkaloids. Chemical Communications, 2015, 51, 7626-7628.	4.1	50
51	Sarpagan bridge enzyme has substrate-controlled cyclization and aromatization modes. Nature Chemical Biology, 2018, 14, 760-763.	8.0	50
52	Ergot cluster-encoded catalase is required for synthesis of chanoclavine-I in Aspergillus fumigatus. Current Genetics, 2011, 57, 201-211.	1.7	48
53	Metabolic engineering for plant natural products biosynthesis: new procedures, concrete achievements and remaining limits. Natural Product Reports, 2021, 38, 2145-2153.	10.3	48
54	A <scp>BAHD</scp> acyltransferase catalyzing 19â€<i>O</i>â€acetylation of tabersonine derivatives in roots of <i>Catharanthus roseus</i> enables combinatorial synthesis of monoterpene indole alkaloids. Plant Journal, 2018, 94, 469-484.	5.7	46

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55	Biocatalytic asymmetric formation of tetrahydro-Î²-carbolines. Tetrahedron Letters, 2010, 51, 4400-4402.	1.4	44
56	Class II Cytochrome P450 Reductase Governs the Biosynthesis of Alkaloids. Plant Physiology, 2016, 172, 1563-1577.	4.8	44
57	The evolution of function in strictosidine synthaseâ€like proteins. Proteins: Structure, Function and Bioinformatics, 2011, 79, 3082-3098.	2.6	43
58	Cytochrome P450 and O-methyltransferase catalyze the final steps in the biosynthesis of the anti-addictive alkaloid ibogaine from Tabernanthe iboga. Journal of Biological Chemistry, 2018, 293, 13821-13833.	3.4	43
59	Beyond the semi-synthetic artemisinin: metabolic engineering of plant-derived anti-cancer drugs. Current Opinion in Biotechnology, 2020, 65, 17-24.	6.6	42
60	Folivory elicits a strong defense reaction in Catharanthus roseus: metabolomic and transcriptomic analyses reveal distinct local and systemic responses. Scientific Reports, 2017, 7, 40453.	3.3	39
61	Identification of Iridoid Glucoside Transporters in Catharanthus roseus. Plant and Cell Physiology, 2017, 58, 1507-1518.	3.1	39
62	Biosynthesis of an Anti-Addiction Agent from the Iboga Plant. Journal of the American Chemical Society, 2019, 141, 12979-12983.	13.7	39
63	Biocatalysts from alkaloid producing plants. Current Opinion in Chemical Biology, 2016, 31, 22-30.	6.1	38
64	Biocatalytic Strategies towards [4+2] Cycloadditions. Chemistry - A European Journal, 2019, 25, 6864-6877.	3.3	38
65	Towards the Microbial Production of Plant-Derived Anticancer Drugs. Trends in Cancer, 2020, 6, 444-448.	7.4	38
66	Identifying Missing Biosynthesis Enzymes of Plant Natural Products. Trends in Pharmacological Sciences, 2020, 41, 142-146.	8.7	37
67	Halogenase Engineering for the Generation of New Natural Product Analogues. ChemBioChem, 2015, 16, 2129-2135.	2.6	36
68	Conversion of Substrate Analogs Suggests a Michael Cyclization in Iridoid Biosynthesis. Chemistry and Biology, 2014, 21, 1452-1456.	6.0	34
69	The important ergot alkaloid intermediate chanoclavine-I produced in the yeast Saccharomyces cerevisiae by the combined action of EasC and EasE from Aspergillus japonicus. Microbial Cell Factories, 2014, 13, 95.	4.0	34
70	Two Tabersonine 6,7-Epoxidases Initiate Lochnericine-Derived Alkaloid Biosynthesis in Catharanthus roseus. Plant Physiology, 2018, 177, 1473-1486.	4.8	34
71	Dual Catalytic Activity of a Cytochrome P450 Controls Bifurcation at a Metabolic Branch Point of Alkaloid Biosynthesis in <i>Rauwolfia serpentina</i>. Angewandte Chemie - International Edition, 2017, 56, 9440-9444.	13.8	33
72	Structural basis of cycloaddition in biosynthesis of iboga and aspidosperma alkaloids. Nature Chemical Biology, 2020, 16, 383-386.	8.0	33

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73	Identification of iridoid synthases from Nepeta species: Iridoid cyclization does not determine nepetalactone stereochemistry. Phytochemistry, 2018, 145, 48-56.	2.9	29
74	Opportunities for enzyme engineering in natural product biosynthesis. Current Opinion in Chemical Biology, 2009, 13, 35-42.	6.1	28
75	Structural characterization of EasH (Aspergillus japonicus) â€“ an oxidase involved in cycloclavine biosynthesis. Chemical Communications, 2016, 52, 14306-14309.	4.1	28
76	Inverted stereocontrol of iridoid synthase in snapdragon. Journal of Biological Chemistry, 2017, 292, 14659-14667.	3.4	25
77	Aza-Tryptamine Substrates in Monoterpene Indole Alkaloid Biosynthesis. Chemistry and Biology, 2009, 16, 1225-1229.	6.0	24
78	Redesign of a Dioxygenase in Morphine Biosynthesis. Chemistry and Biology, 2012, 19, 674-678.	6.0	23
79	Strategies for Engineering Plant Natural Products. Methods in Enzymology, 2012, 515, 189-206.	1.0	22
80	The impact of structural biology on alkaloid biosynthesis research. Natural Product Reports, 2012, 29, 1176.	10.3	21
81	Differential iridoid production as revealed by a diversity panel of 84 cultivated and wild blueberry species. PLoS ONE, 2017, 12, e0179417.	2.5	21
82	Plant Gene Clusters and Opiates. Science, 2012, 336, 1648-1649.	12.6	20
83	Discovery of a Shortâ€Chain Dehydrogenase from <i>Catharanthus roseus</i> that Produces a New Monoterpene Indole Alkaloid. ChemBioChem, 2018, 19, 940-948.	2.6	20
84	Early and Late Steps of Quinine Biosynthesis. Organic Letters, 2021, 23, 1793-1797.	4.6	20
85	Improved virus-induced gene silencing allows discovery of a serpentine synthase gene in <i>Catharanthus roseus</i>. Plant Physiology, 2021, 187, 846-857.	4.8	20
86	Chemoselective derivatization of alkaloids in periwinkle. Chemical Communications, 2007, , 3249.	4.1	19
87	Substrate specificity and diastereoselectivity of strictosidine glucosidase, a key enzyme in monoterpene indole alkaloid biosynthesis. Bioorganic and Medicinal Chemistry Letters, 2008, 18, 3095-3098.	2.2	19
88	Discovery and Reconstitution of the Cycloclavine Biosynthetic Pathwayâ€"Enzymatic Formation of a Cyclopropyl Group. Angewandte Chemie, 2015, 127, 5206-5210.	2.0	19
89	Synthesis of (âˆ')-Melodinine K: A Case Study of Efficiency in Natural Product Synthesis. Journal of Natural Products, 2020, 83, 2425-2433.	3.0	19
90	The <i>Mitragyna speciosa</i> (Kratom) Genome: a resource for data-mining potent pharmaceuticals that impact human health. G3: Genes, Genomes, Genetics, 2021, 11, .	1.8	19

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91	Alternative splicing creates a pseudo-strictosidine Î²-<scp>d</scp>-glucosidase modulating alkaloid synthesis in <i>Catharanthus roseus</i>. Plant Physiology, 2021, 185, 836-856.	4.8	19
92	Synthesis of 4-, 5-, 6-, and 7-azidotryptamines. Tetrahedron Letters, 2009, 50, 75-76.	1.4	18
93	Two biâ€functional cytochrome P450 CYP72 enzymes from olive (<i>Olea europaea</i>) catalyze the oxidative Câ€C bond cleavage in the biosynthesis of secoxyâ€iridoids â€“ flavor and quality determinants in olive oil. New Phytologist, 2021, 229, 2288-2301.	7.3	17
94	Cell-Free Total Biosynthesis of Plant Terpene Natural Products Using an Orthogonal Cofactor Regeneration System. ACS Catalysis, 2021, 11, 9898-9903.	11.2	16
95	The Progesterone 5Î²-Reductase/Iridoid Synthase Family: A Catalytic Reservoir for Specialized Metabolism across Land Plants. ACS Chemical Biology, 2020, 15, 1780-1787.	3.4	15
96	Metabolomics Analysis Reveals Tissue-Specific Metabolite Compositions in Leaf Blade and Traps of Carnivorous Nepenthes Plants. International Journal of Molecular Sciences, 2020, 21, 4376.	4.1	13
97	Semi-synthesis of secologanin analogues. Tetrahedron Letters, 2006, 47, 1563-1565.	1.4	12
98	Mechanistic advances in plant natural product enzymes. Current Opinion in Chemical Biology, 2009, 13, 492-498.	6.1	11
99	Synthesis and biochemical evaluation of des-vinyl secologanin aglycones with alternate stereochemistry. Tetrahedron Letters, 2009, 50, 7118-7120.	1.4	10
100	Hairy root transformation of Brassica rapa with bacterial halogenase genes and regeneration to adult plants to modify production of indolic compounds. Phytochemistry, 2020, 175, 112371.	2.9	8
101	The conformational basis of asparagine-linked glycosylation. Pure and Applied Chemistry, 1998, 70, 33-40.	1.9	7
102	Bypassing stereoselectivity in the early steps of alkaloid biosynthesis. Organic and Biomolecular Chemistry, 2009, 7, 4166.	2.8	7
103	Dual Catalytic Activity of a Cytochrome P450 Controls Bifurcation at a Metabolic Branch Point of Alkaloid Biosynthesis in <i>Rauwolfia serpentina</i>. Angewandte Chemie, 2017, 129, 9568-9572.	2.0	7
104	Chlorinated Auxinsâ€"How Does Arabidopsis Thaliana Deal with Them?. International Journal of Molecular Sciences, 2020, 21, 2567.	4.1	7
105	Fighting cancer while saving the mayapple. Science, 2015, 349, 1167-1168.	12.6	6
106	Directed Biosynthesis of New to Nature Alkaloids in a Heterologous Nicotiana benthamiana Expression Host. Frontiers in Plant Science, 0, 13, .	3.6	5
107	Strategies to Produce Chlorinated Indoleâ€3â€Acetic Acid and Indoleâ€3â€Acetic Acid Intermediates. ChemistrySelect, 2017, 2, 11148-11153.	1.5	4
108	Phylogeny-Aware Chemoinformatic Analysis of Chemical Diversity in Lamiaceae Enables Iridoid Pathway Assembly and Discovery of Aucubin Synthase. Molecular Biology and Evolution, 2022, 39, .	8.9	4

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109	Editorial overview: Growing the future: synthetic biology in plants. Current Opinion in Plant Biology, 2014, 19, iv-v.	7.1	3
110	Aureolic Acids. Chemistry and Biology, 2004, 11, 8-10.	6.0	1
111	Cyclization of natural products. , 2006, 2, 511-512.		1
112	Iridoid Synthase Activity Is Common among the Plant Progesterone 5Â-Reductase Family. Molecular Plant, 2014, , .	8.3	1
113	Raising the BAR of specificity. Nature Plants, 2017, 3, 924-925.	9.3	1
114	Biosynthesis of Vinblastine. , 2020, , 642-685.		1
115	Frontispiece: Biocatalytic Strategies towards [4+2] Cycloadditions. Chemistry - A European Journal, 2019, 25, .	3.3	0
116	Symbionts, Peptides, and (No) Iron: How Ants Defend Their Fungal Crop. ACS Central Science, 2021, 7, 225-227.	11.3	0
117	Tonoplast and Peroxisome Targeting of Î³-tocopherol N-methyltransferase Homologs Involved in the Synthesis of Monoterpene Indole Alkaloids. Plant and Cell Physiology, 2021, , .	3.1	0
118	Mechanism and Evolution of [4+2] Cyclases in Monoterpene Indole Alkaloid Biosynthesis. FASEB Journal, 2022, 36, .	0.5	0