

# Sarah O'Connor

## List of Publications by Year in descending order

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118  
papers

8,173  
citations

44042

48  
h-index

53190

85  
g-index

142  
all docs

142  
docs citations

142  
times ranked

6638  
citing authors

#	ARTICLE	IF	CITATIONS
1	Phylogeny-Aware Chemoinformatic Analysis of Chemical Diversity in Lamiaceae Enables Iridoid Pathway Assembly and Discovery of Aucubin Synthase. <i>Molecular Biology and Evolution</i> , 2022, 39, .	3.5	4
2	Mechanism and Evolution of [4+2] Cyclases in Monoterpene Indole Alkaloid Biosynthesis. <i>FASEB Journal</i> , 2022, 36, .	0.2	0
3	Two bifunctional cytochrome P450 CYP72 enzymes from olive ( <i>Olea europaea</i> ) catalyze the oxidative C-C bond cleavage in the biosynthesis of secoiridoids – flavor and quality determinants in olive oil. <i>New Phytologist</i> , 2021, 229, 2288-2301.	3.5	17
4	Symbionts, Peptides, and (No) Iron: How Ants Defend Their Fungal Crop. <i>ACS Central Science</i> , 2021, 7, 225-227.	5.3	0
5	Early and Late Steps of Quinine Biosynthesis. <i>Organic Letters</i> , 2021, 23, 1793-1797.	2.4	20
6	The <i>Mitragyna speciosa</i> (Kratom) Genome: a resource for data-mining potent pharmaceuticals that impact human health. <i>G3: Genes, Genomes, Genetics</i> , 2021, 11, .	0.8	19
7	Improved virus-induced gene silencing allows discovery of a serpentine synthase gene in <i>Catharanthus roseus</i> . <i>Plant Physiology</i> , 2021, 187, 846-857.	2.3	20
8	Cell-Free Total Biosynthesis of Plant Terpene Natural Products Using an Orthogonal Cofactor Regeneration System. <i>ACS Catalysis</i> , 2021, 11, 9898-9903.	5.5	16
9	Metabolic engineering for plant natural products biosynthesis: new procedures, concrete achievements and remaining limits. <i>Natural Product Reports</i> , 2021, 38, 2145-2153.	5.2	48
10	Alternative splicing creates a pseudo-strictosidine $\beta$ -glucosidase modulating alkaloid synthesis in <i>Catharanthus roseus</i> . <i>Plant Physiology</i> , 2021, 185, 836-856.	2.3	19
11	Tonoplast and Peroxisome Targeting of $\beta$ -tocopherol N-methyltransferase Homologs Involved in the Synthesis of Monoterpene Indole Alkaloids. <i>Plant and Cell Physiology</i> , 2021, . .	1.5	0
12	Biosynthesis of Vinblastine. , 2020, , 642-685.		1
13	Beyond the semi-synthetic artemisinin: metabolic engineering of plant-derived anti-cancer drugs. <i>Current Opinion in Biotechnology</i> , 2020, 65, 17-24.	3.3	42
14	Synthesis of ( $\beta$ )-Melodinine K: A Case Study of Efficiency in Natural Product Synthesis. <i>Journal of Natural Products</i> , 2020, 83, 2425-2433.	1.5	19
15	The evolutionary origins of the cat attractant nepetalactone in catnip. <i>Science Advances</i> , 2020, 6, eaba0721.	4.7	70
16	The Progesterone $5\beta$ -Reductase/Iridoid Synthase Family: A Catalytic Reservoir for Specialized Metabolism across Land Plants. <i>ACS Chemical Biology</i> , 2020, 15, 1780-1787.	1.6	15
17	Towards the Microbial Production of Plant-Derived Anticancer Drugs. <i>Trends in Cancer</i> , 2020, 6, 444-448.	3.8	38
18	Metabolomics Analysis Reveals Tissue-Specific Metabolite Compositions in Leaf Blade and Traps of Carnivorous <i>Nepenthes</i> Plants. <i>International Journal of Molecular Sciences</i> , 2020, 21, 4376.	1.8	13

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19	Structural basis of cycloaddition in biosynthesis of iboga and aspidosperma alkaloids. <i>Nature Chemical Biology</i> , 2020, 16, 383-386.	3.9	33
20	Identifying Missing Biosynthesis Enzymes of Plant Natural Products. <i>Trends in Pharmacological Sciences</i> , 2020, 41, 142-146.	4.0	37
21	Chlorinated Auxins—How Does <i>Arabidopsis Thaliana</i> Deal with Them?. <i>International Journal of Molecular Sciences</i> , 2020, 21, 2567.	1.8	7
22	Hairy root transformation of <i>Brassica rapa</i> with bacterial halogenase genes and regeneration to adult plants to modify production of indolic compounds. <i>Phytochemistry</i> , 2020, 175, 112371.	1.4	8
23	The complexity of intercellular localisation of alkaloids revealed by single-cell metabolomics. <i>New Phytologist</i> , 2019, 224, 848-859.	3.5	65
24	Biosynthesis of an Anti-Addiction Agent from the Iboga Plant. <i>Journal of the American Chemical Society</i> , 2019, 141, 12979-12983.	6.6	39
25	Biocatalytic Strategies towards [4+2] Cycloadditions. <i>Chemistry - A European Journal</i> , 2019, 25, 6864-6877.	1.7	38
26	Frontispiece: Biocatalytic Strategies towards [4+2] Cycloadditions. <i>Chemistry - A European Journal</i> , 2019, 25, .	1.7	0
27	Uncoupled activation and cyclization in catmint reductive terpenoid biosynthesis. <i>Nature Chemical Biology</i> , 2019, 15, 71-79.	3.9	56
28	Gene Discovery in <i>Gelsemium</i> Highlights Conserved Gene Clusters in Monoterpene Indole Alkaloid Biosynthesis. <i>ChemBioChem</i> , 2019, 20, 83-87.	1.3	66
29	A Pressure Test to Make 10 Molecules in 90 Days: External Evaluation of Methods to Engineer Biology. <i>Journal of the American Chemical Society</i> , 2018, 140, 4302-4316.	6.6	118
30	A <i>BAHD</i> acyltransferase catalyzing 19-O-acetylation of tabersonine derivatives in roots of <i>Catharanthus roseus</i> enables combinatorial synthesis of monoterpene indole alkaloids. <i>Plant Journal</i> , 2018, 94, 469-484.	2.8	46
31	Discovery of a Short-Chain Dehydrogenase from <i>Catharanthus roseus</i> that Produces a New Monoterpene Indole Alkaloid. <i>ChemBioChem</i> , 2018, 19, 940-948.	1.3	20
32	Missing enzymes in the biosynthesis of the anticancer drug vinblastine in Madagascar periwinkle. <i>Science</i> , 2018, 360, 1235-1239.	6.0	279
33	Identification of iridoid synthases from <i>Nepeta</i> species: Iridoid cyclization does not determine nepetalactone stereochemistry. <i>Phytochemistry</i> , 2018, 145, 48-56.	1.4	29
34	Phylogenomic Mining of the Mints Reveals Multiple Mechanisms Contributing to the Evolution of Chemical Diversity in Lamiaceae. <i>Molecular Plant</i> , 2018, 11, 1084-1096.	3.9	109
35	Sarpagan bridge enzyme has substrate-controlled cyclization and aromatization modes. <i>Nature Chemical Biology</i> , 2018, 14, 760-763.	3.9	50
36	Two Tabersonine 6,7-Epoxidases Initiate Lochnericine-Derived Alkaloid Biosynthesis in <i>Catharanthus roseus</i> . <i>Plant Physiology</i> , 2018, 177, 1473-1486.	2.3	34

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37	Cytochrome P450 and O-methyltransferase catalyze the final steps in the biosynthesis of the anti-addictive alkaloid ibogaine from <i>Tabernanthe iboga</i> . <i>Journal of Biological Chemistry</i> , 2018, 293, 13821-13833.	1.6	43
38	An NPF transporter exports a central monoterpene indole alkaloid intermediate from the vacuole. <i>Nature Plants</i> , 2017, 3, 16208.	4.7	123
39	Folivory elicits a strong defense reaction in <i>Catharanthus roseus</i> : metabolomic and transcriptomic analyses reveal distinct local and systemic responses. <i>Scientific Reports</i> , 2017, 7, 40453.	1.6	39
40	A three enzyme system to generate the <i>Strychnos</i> alkaloid scaffold from a central biosynthetic intermediate. <i>Nature Communications</i> , 2017, 8, 316.	5.8	117
41	Identification of Iridoid Glucoside Transporters in <i>Catharanthus roseus</i> . <i>Plant and Cell Physiology</i> , 2017, 58, 1507-1518.	1.5	39
42	Inverted stereocontrol of iridoid synthase in snapdragon. <i>Journal of Biological Chemistry</i> , 2017, 292, 14659-14667.	1.6	25
43	Strategies to Produce Chlorinated Indole-3-Acetic Acid and Indole-3-Acetic Acid Intermediates. <i>ChemistrySelect</i> , 2017, 2, 11148-11153.	0.7	4
44	Raising the BAR of specificity. <i>Nature Plants</i> , 2017, 3, 924-925.	4.7	1
45	Dual Catalytic Activity of a Cytochrome P450 Controls Bifurcation at a Metabolic Branch Point of Alkaloid Biosynthesis in <i>Rauwolfia serpentina</i> . <i>Angewandte Chemie</i> , 2017, 129, 9568-9572.	1.6	7
46	Dual Catalytic Activity of a Cytochrome P450 Controls Bifurcation at a Metabolic Branch Point of Alkaloid Biosynthesis in <i>Rauwolfia serpentina</i> . <i>Angewandte Chemie - International Edition</i> , 2017, 56, 9440-9444.	7.2	33
47	Differential iridoid production as revealed by a diversity panel of 84 cultivated and wild blueberry species. <i>PLoS ONE</i> , 2017, 12, e0179417.	1.1	21
48	New developments in engineering plant metabolic pathways. <i>Current Opinion in Biotechnology</i> , 2016, 42, 126-132.	3.3	83
49	Class II Cytochrome P450 Reductase Governs the Biosynthesis of Alkaloids. <i>Plant Physiology</i> , 2016, 172, 1563-1577.	2.3	44
50	Structural characterization of EasH ( <i>Aspergillus japonicus</i> ) – an oxidase involved in cycloclavine biosynthesis. <i>Chemical Communications</i> , 2016, 52, 14306-14309.	2.2	28
51	Structural investigation of heteroyohimbine alkaloid synthesis reveals active site elements that control stereoselectivity. <i>Nature Communications</i> , 2016, 7, 12116.	5.8	85
52	Biocatalysts from alkaloid producing plants. <i>Current Opinion in Chemical Biology</i> , 2016, 31, 22-30.	2.8	38
53	Identification and Characterization of the Iridoid Synthase Involved in Oleuropein Biosynthesis in Olive ( <i>Olea europaea</i> ) Fruits. <i>Journal of Biological Chemistry</i> , 2016, 291, 5542-5554.	1.6	74
54	Structural determinants of reductive terpene cyclization in iridoid biosynthesis. <i>Nature Chemical Biology</i> , 2016, 12, 6-8.	3.9	58

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55	Standards for plant synthetic biology: a common syntax for exchange of <scp>DNA</scp> parts. <i>New Phytologist</i> , 2015, 208, 13-19.	3.5	263
56	Halogenase Engineering for the Generation of New Natural Product Analogues. <i>ChemBioChem</i> , 2015, 16, 2129-2135.	1.3	36
57	Genome-guided investigation of plant natural product biosynthesis. <i>Plant Journal</i> , 2015, 82, 680-692.	2.8	186
58	Iridoid Synthase Activity Is Common among the Plant Progesterone 5 <sup>β</sup> -Reductase Family. <i>Molecular Plant</i> , 2015, 8, 136-152.	3.9	57
59	De novo production of the plant-derived alkaloid strictosidine in yeast. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 3205-3210.	3.3	373
60	Discovery and Reconstitution of the Cycloclavine Biosynthetic Pathway—Enzymatic Formation of a Cyclopropyl Group. <i>Angewandte Chemie</i> , 2015, 127, 5206-5210.	1.6	19
61	Discovery and Reconstitution of the Cycloclavine Biosynthetic Pathway—Enzymatic Formation of a Cyclopropyl Group. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 5117-5121.	7.2	61
62	The bHLH transcription factor BIS1 controls the iridoid branch of the monoterpenoid indole alkaloid pathway in <i>Catharanthus roseus</i> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, 8130-8135.	3.3	176
63	Discovery of a P450-catalyzed step in vindoline biosynthesis: a link between the aspidosperma and eburnamine alkaloids. <i>Chemical Communications</i> , 2015, 51, 7626-7628.	2.2	50
64	Unlocking the Diversity of Alkaloids in <i>Catharanthus roseus</i> : Nuclear Localization Suggests Metabolic Channeling in Secondary Metabolism. <i>Chemistry and Biology</i> , 2015, 22, 336-341.	6.2	103
65	Engineering of Secondary Metabolism. <i>Annual Review of Genetics</i> , 2015, 49, 71-94.	3.2	125
66	Fighting cancer while saving the mayapple. <i>Science</i> , 2015, 349, 1167-1168.	6.0	6
67	Characterization of a second secologanin synthase isoform producing both secologanin and secoxyloganin allows enhanced de novo assembly of a <i>Catharanthus roseus</i> transcriptome. <i>BMC Genomics</i> , 2015, 16, 619.	1.2	54
68	Conversion of Substrate Analogs Suggests a Michael Cyclization in Iridoid Biosynthesis. <i>Chemistry and Biology</i> , 2014, 21, 1452-1456.	6.2	34
69	Iridoid Synthase Activity Is Common among the Plant Progesterone 5 <sup>β</sup> -Reductase Family. <i>Molecular Plant</i> , 2014, , .	3.9	1
70	The important ergot alkaloid intermediate chanoclavine-I produced in the yeast <i>Saccharomyces cerevisiae</i> by the combined action of EasC and EasE from <i>Aspergillus japonicus</i> . <i>Microbial Cell Factories</i> , 2014, 13, 95.	1.9	34
71	Biosynthesis of the ergot alkaloids. <i>Natural Product Reports</i> , 2014, 31, 1328-1338.	5.2	81
72	Editorial overview: Growing the future: synthetic biology in plants. <i>Current Opinion in Plant Biology</i> , 2014, 19, iv-v.	3.5	3

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73	Recent progress in the metabolic engineering of alkaloids in plant systems. <i>Current Opinion in Biotechnology</i> , 2013, 24, 354-365.	3.3	86
74	Diversification of Monoterpene Indole Alkaloid Analogs through Cross-Coupling. <i>Organic Letters</i> , 2013, 15, 2850-2853.	2.4	69
75	A Pair of Tabersonine 16-Hydroxylases Initiates the Synthesis of Vindoline in an Organ-Dependent Manner in <i>Catharanthus roseus</i> . <i>Plant Physiology</i> , 2013, 163, 1792-1803.	2.3	97
76	An alternative route to cyclic terpenes by reductive cyclization in iridoid biosynthesis. <i>Nature</i> , 2012, 492, 138-142.	13.7	298
77	Plant Gene Clusters and Opiates. <i>Science</i> , 2012, 336, 1648-1649.	6.0	20
78	Redesign of a Dioxygenase in Morphine Biosynthesis. <i>Chemistry and Biology</i> , 2012, 19, 674-678.	6.2	23
79	Strategies for Engineering Plant Natural Products. <i>Methods in Enzymology</i> , 2012, 515, 189-206.	0.4	22
80	The impact of structural biology on alkaloid biosynthesis research. <i>Natural Product Reports</i> , 2012, 29, 1176.	5.2	21
81	Development of Transcriptomic Resources for Interrogating the Biosynthesis of Monoterpene Indole Alkaloids in Medicinal Plant Species. <i>PLoS ONE</i> , 2012, 7, e52506.	1.1	150
82	Biocatalytic production of tetrahydroisoquinolines. <i>Tetrahedron Letters</i> , 2012, 53, 1071-1074.	0.7	95
83	Reengineering a Tryptophan Halogenase To Preferentially Chlorinate a Direct Alkaloid Precursor. <i>Journal of the American Chemical Society</i> , 2011, 133, 19346-19349.	6.6	104
84	A virus-induced gene silencing approach to understanding alkaloid metabolism in <i>Catharanthus roseus</i> . <i>Phytochemistry</i> , 2011, 72, 1969-1977.	1.4	121
85	Ergot cluster-encoded catalase is required for synthesis of chanoclavine-I in <i>Aspergillus fumigatus</i> . <i>Current Genetics</i> , 2011, 57, 201-211.	0.8	48
86	The evolution of function in strictosidine synthase-like proteins. <i>Proteins: Structure, Function and Bioinformatics</i> , 2011, 79, 3082-3098.	1.5	43
87	A Stereoselective Hydroxylation Step of Alkaloid Biosynthesis by a Unique Cytochrome P450 in <i>Catharanthus roseus</i> . <i>Journal of Biological Chemistry</i> , 2011, 286, 16751-16757.	1.6	124
88	Biocatalytic asymmetric formation of tetrahydro- $\beta$ -carbolines. <i>Tetrahedron Letters</i> , 2010, 51, 4400-4402.	0.7	44
89	Integrating carbon-halogen bond formation into medicinal plant metabolism. <i>Nature</i> , 2010, 468, 461-464.	13.7	204
90	Homolog of tocopherol C methyltransferases catalyzes N-methylation in anticancer alkaloid biosynthesis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 18793-18798.	3.3	94

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91	An Old Yellow Enzyme Gene Controls the Branch Point between <i>Aspergillus fumigatus</i> and <i>Claviceps purpurea</i> Ergot Alkaloid Pathways. <i>Applied and Environmental Microbiology</i> , 2010, 76, 3898-3903.	1.4	67
92	Controlling a Structural Branch Point in Ergot Alkaloid Biosynthesis. <i>Journal of the American Chemical Society</i> , 2010, 132, 12835-12837.	6.6	56
93	A Role for Old Yellow Enzyme in Ergot Alkaloid Biosynthesis. <i>Journal of the American Chemical Society</i> , 2010, 132, 1776-1777.	6.6	54
94	Silencing of tryptamine biosynthesis for production of nonnatural alkaloids in plant culture. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 13673-13678.	3.3	100
95	Synthesis and biochemical evaluation of des-vinyl secologanin aglycones with alternate stereochemistry. <i>Tetrahedron Letters</i> , 2009, 50, 7118-7120.	0.7	10
96	Metabolic reprogramming of periwinkle plant culture. <i>Nature Chemical Biology</i> , 2009, 5, 151-153.	3.9	109
97	Opportunities in metabolic engineering to facilitate scalable alkaloid production. <i>Nature Chemical Biology</i> , 2009, 5, 292-300.	3.9	122
98	Synthesis of 4-, 5-, 6-, and 7-azidotryptamines. <i>Tetrahedron Letters</i> , 2009, 50, 75-76.	0.7	18
99	Opportunities for enzyme engineering in natural product biosynthesis. <i>Current Opinion in Chemical Biology</i> , 2009, 13, 35-42.	2.8	28
100	Mechanistic advances in plant natural product enzymes. <i>Current Opinion in Chemical Biology</i> , 2009, 13, 492-498.	2.8	11
101	Aza-Tryptamine Substrates in Monoterpene Indole Alkaloid Biosynthesis. <i>Chemistry and Biology</i> , 2009, 16, 1225-1229.	6.2	24
102	Bypassing stereoselectivity in the early steps of alkaloid biosynthesis. <i>Organic and Biomolecular Chemistry</i> , 2009, 7, 4166.	1.5	7
103	Substrate specificity and diastereoselectivity of strictosidine glucosidase, a key enzyme in monoterpene indole alkaloid biosynthesis. <i>Bioorganic and Medicinal Chemistry Letters</i> , 2008, 18, 3095-3098.	1.0	19
104	Strictosidine Synthase: Mechanism of a Pictet-Spengler Catalyzing Enzyme. <i>Journal of the American Chemical Society</i> , 2008, 130, 710-723.	6.6	190
105	Chemoselective derivatization of alkaloids in periwinkle. <i>Chemical Communications</i> , 2007, , 3249.	2.2	19
106	Rapid Identification of Enzyme Variants for Reengineered Alkaloid Biosynthesis in Periwinkle. <i>Chemistry and Biology</i> , 2007, 14, 888-897.	6.2	81
107	Directed Biosynthesis of Alkaloid Analogs in the Medicinal Plant <i>Catharanthus roseus</i> . <i>Journal of the American Chemical Society</i> , 2006, 128, 14276-14277.	6.6	84
108	Chemistry and biology of monoterpene indole alkaloid biosynthesis. <i>Natural Product Reports</i> , 2006, 23, 532.	5.2	861

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109	Cyclization of natural products. , 2006, 2, 511-512.		1
110	Substrate specificity of strictosidine synthase. Bioorganic and Medicinal Chemistry Letters, 2006, 16, 2475-2478.	1.0	83
111	Redesign of a Central Enzyme in Alkaloid Biosynthesis. Chemistry and Biology, 2006, 13, 1137-1141.	6.2	68
112	Semi-synthesis of secologanin analogues. Tetrahedron Letters, 2006, 47, 1563-1565.	0.7	12
113	Aureolic Acids. Chemistry and Biology, 2004, 11, 8-10.	6.2	1
114	Probing the Effect of the Outer Saccharide Residues of N-Linked Glycans on Peptide Conformation. Journal of the American Chemical Society, 2001, 123, 6187-6188.	6.6	62
115	Effect of N-linked glycosylation on glycopeptide and glycoprotein structure. Current Opinion in Chemical Biology, 1999, 3, 643-649.	2.8	367
116	A molecular basis for glycosylation-induced conformational switching. Chemistry and Biology, 1998, 5, 427-437.	6.2	103
117	The conformational basis of asparagine-linked glycosylation. Pure and Applied Chemistry, 1998, 70, 33-40.	0.9	7
118	Directed Biosynthesis of New to Nature Alkaloids in a Heterologous Nicotiana benthamiana Expression Host. Frontiers in Plant Science, 0, 13, .	1.7	5