Laurence B Davin

List of Publications by Year
in descending order

115 papers	7,601 citations	44042 48 h-index	56687 83 g-index
117 all docs	117 docs citations	117 times ranked	5878 citing authors

#	Article	IF	Citations
1	Stereoselective Bimolecular Phenoxy Radical Coupling by an Auxiliary (Dirigent) Protein Without an Active Center. Science, 1997, 275, 362-367.	6.0	650
2	Dirigent Proteins and Dirigent Sites Explain the Mystery of Specificity of Radical Precursor Coupling in Lignan and Lignin Biosynthesis. Plant Physiology, 2000, 123, 453-462.	2.3	263
3	The Arabidopsis phenylalanine ammonia lyase gene family: kinetic characterization of the four PAL isoforms. Phytochemistry, 2004, 65, 1557-1564.	1.4	246
4	Lignin primary structures and dirigent sites. Current Opinion in Biotechnology, 2005, 16, 407-415.	3.3	230
5	Functional reclassification of the putative cinnamyl alcohol dehydrogenase multigene family in Arabidopsis. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 1455-1460.	3.3	210
6	Antisense Down-Regulation of 4CL Expression Alters Lignification, Tree Growth, and Saccharification Potential of Field-Grown Poplar Â Â. Plant Physiology, 2010, 154, 874-886.	2.3	195
7	(+)-Pinoresinol/(+)-Lariciresinol Reductase from Forsythia intermedia. Journal of Biological Chemistry, 1996, 271, 29473-29482.	1.6	176
8	Regiochemical control of monolignol radical coupling: A new paradigm for lignin and lignan biosynthesis. Chemistry and Biology, 1999, 6, 143-151.	6.2	175
9	Evolution of Plant Defense Mechanisms. Journal of Biological Chemistry, 1999, 274, 7516-7527.	1.6	173
10	Dissection of lignin macromolecular configuration and assembly: Comparison to related biochemical processes in allyl/propenyl phenol and lignan biosynthesis. Natural Product Reports, 2008, 25, 1015.	5.2	171
11	Dirigent proteins and dirigent sites in lignifying tissues. Phytochemistry, 2001, 57, 883-897.	1.4	164
12	The laccase multigene family in Arabidopsis thaliana: towards addressing the mystery of their gene function(s). Planta, 2011, 233, 439-470.	1.6	162
13	Biosynthetic Pathway to the Cancer Chemopreventive Secoisolariciresinol Diglucosideâ^'Hydroxymethyl Glutaryl Ester-Linked Lignan Oligomers in Flax (Linumusitatissimum)Seedâ€. Journal of Natural Products, 2001, 64, 1388-1397.	1.5	147
14	An historical perspective on lignan biosynthesis: Monolignol, allylphenol and hydroxycinnamic acid coupling and downstream metabolism. Phytochemistry Reviews, 2003, 2, 257-288.	3.1	144
15	On the stereoselective synthesis of (+)-pinoresinol in Forsythia suspensa from its achiral precursor, coniferyl alcohol. Phytochemistry, 1992, 31, 3869-3874.	1.4	132
16	An in silico assessment of gene function and organization of the phenylpropanoid pathway metabolic networks in Arabidopsis thaliana and limitations thereof. Phytochemistry, 2003, 64, 1097-1112.	1.4	128
17	Secoisolariciresinol Dehydrogenase Purification, Cloning, and Functional Expression. Journal of Biological Chemistry, 2001, 276, 12614-12623.	1.6	127
18	Characterization in vitro and in vivo of the putative multigene 4-coumarate:CoA ligase network in Arabidopsis: syringyl lignin and sinapate/sinapyl alcohol derivative formation. Phytochemistry, 2005, 66, 2072-2091.	1.4	127

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19	Transcriptional Control of Monolignol Biosynthesis in Pinus taeda. Journal of Biological Chemistry, 2002, 277, 18272-18280.	1.6	125
20	Phenylalanine Biosynthesis in Arabidopsis thaliana. Journal of Biological Chemistry, 2007, 282, 30827-30835.	1.6	110
21	Dirigent Protein-Mediated Lignan and Cyanogenic Glucoside Formation in Flax Seed: Integrated Omics and MALDI Mass Spectrometry Imaging. Journal of Natural Products, 2015, 78, 1231-1242.	1.5	110
22	Dirigent phenoxy radical coupling: advances and challenges. Current Opinion in Biotechnology, 2005, 16, 398-406.	3.3	108
23	Next Generation Sequencing in Predicting Gene Function in Podophyllotoxin Biosynthesis. Journal of Biological Chemistry, 2013, 288, 466-479.	1.6	102
24	Phenylcoumaran benzylic ether and isoflavonoid reductases are a new class of cross-reactive allergens in birch pollen, fruits and vegetables. FEBS Journal, 2001, 268, 5310-5320.	0.2	101
25	Crystal structures and catalytic mechanism of the Arabidopsis cinnamyl alcohol dehydrogenases AtCAD5 and AtCAD4. Organic and Biomolecular Chemistry, 2006, 4, 1687.	1.5	97
26	Biosynthesis of antioxidant lignans in Sesamum indicum seeds. Phytochemistry, 1998, 47, 583-591.	1.4	92
27	Dirigent-mediated podophyllotoxin biosynthesis in Linum flavum and Podophyllum peltatum. Phytochemistry, 2000, 55, 537-549.	1.4	88
28	Crystal Structures of Pinoresinol-Lariciresinol and Phenylcoumaran Benzylic Ether Reductases and Their Relationship to Isoflavone Reductases. Journal of Biological Chemistry, 2003, 278, 50714-50723.	1.6	85
29	Recombinant Pinoresinol-Lariciresinol Reductases from Western Red Cedar (Thuja plicata) Catalyze Opposite Enantiospecific Conversions. Journal of Biological Chemistry, 1999, 274, 618-627.	1.6	83
30	Opposite Stereoselectivities of Dirigent Proteins in Arabidopsis and Schizandra Species. Journal of Biological Chemistry, 2012, 287, 33957-33972.	1.6	82
31	Expression of cinnamyl alcohol dehydrogenases and their putative homologues during Arabidopsis thaliana growth and development: Lessons for database annotations?. Phytochemistry, 2007, 68, 1957-1974.	1.4	81
32	(+)-Larreatricin hydroxylase, an enantio-specific polyphenol oxidase from the creosote bush (Larrea) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5 100, 10641-10646.	3.3	80
33	An extraordinary accumulation of (â˜')-pinoresinol in cell-free extracts of Forsythia intermedia: evidence for enantiospecific reduction of (+)-pinoresinol. Phytochemistry, 1992, 31, 3875-3881.	1.4	79
34	Lignans: Biosynthesis and Function. , 1999, , 639-712.		76
35	Kinetic Study of Coniferyl Alcohol Radical Binding to the (+)-Pinoresinol Forming Dirigent Proteinâ€. Biochemistry, 2004, 43, 2587-2595.	1.2	75
36	Novel benzylic ether reductions in lignan biogenesis in Forsythia intermedia. Phytochemistry, 1993, 33, 581-591.	1.4	73

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37	The Nature and Function of Lignins. , 1999, , 617-745.		72
38	The western red cedar (Thuja plicata) 8-8' DIRIGENT family displays diverse expression patterns and conserved monolignol coupling specificity. Plant Molecular Biology, 2002, 49, 199-214.	2.0	71
39	Chavicol formation in sweet basil (Ocimum basilicum): cleavage of an esterified C9 hydroxyl group with NAD(P)H-dependent reduction. Organic and Biomolecular Chemistry, 2006, 4, 2733-2744.	1.5	70
40	Formation of the lignan, (â^') secoisolariciresinol, by cell free extracts of Forsythia intermedia. Biochemical and Biophysical Research Communications, 1990, 171, 1008-1014.	1.0	68
41	A genome-wide analysis of the flax (Linum usitatissimum L.) dirigent protein family: from gene identification and evolution to differential regulation. Plant Molecular Biology, 2018, 97, 73-101.	2.0	66
42	Phenylpropanoid Metabolism: Biosynthesis of Monolignols, Lignans and Neolignans, Lignins and Suberins. , 1992, , 325-375.		60
43	Composition and antimicrobial activity of the essential oils from invasive species of the Azores, Hedychium gardnerianum and Pittosporum undulatum. Phytochemistry, 2003, 64, 561-565.	1.4	60
44	Mechanistic and Structural Studies of Apoform, Binary, and Ternary Complexes of the Arabidopsis Alkenal Double Bond Reductase At5g16970. Journal of Biological Chemistry, 2006, 281, 40076-40088.	1.6	60
45	Non-host disease resistance response in pea (Pisum sativum) pods: Biochemical function of DRR206 and phytoalexin pathway localization. Phytochemistry, 2015, 113, 140-148.	1.4	58
46	Cell-wall architecture and lignin composition of wheat developed in a microgravity environment. Phytochemistry, 2001, 57, 835-846.	1.4	56
47	Reassessment of effects on lignification and vascular development in the irx4 Arabidopsis mutant. Phytochemistry, 2005, 66, 2092-2107.	1.4	56
48	Trimeric Structure of (+)-Pinoresinol-forming Dirigent Protein at 1.95 Ã... Resolution with Three Isolated Active Sites. Journal of Biological Chemistry, 2015, 290, 1308-1318.	1.6	56
49	In situ hybridization and immunolocalization of lignan reductases in woody tissues: implications for heartwood formation and other forms of vascular tissue preservation. Phytochemistry, 2001, 57, 899-914.	1.4	53
50	Crystal Structures of Apo-form and Binary/Ternary Complexes of Podophyllum Secoisolariciresinol Dehydrogenase, an Enzyme Involved in Formation of Health-protecting and Plant Defense Lignans. Journal of Biological Chemistry, 2005, 280, 12917-12926.	1.6	51
51	Arogenate Dehydratase Isoenzymes Profoundly and Differentially Modulate Carbon Flux into Lignins. Journal of Biological Chemistry, 2012, 287, 11446-11459.	1.6	51
52	Lignan biosynthesis in forsythia species. Journal of the Chemical Society Chemical Communications, 1990, , 1405.	2.0	50
53	Multi-Site Modulation of Flux during Monolignol Formation in Loblolly Pine (Pinus taeda). Biochemical and Biophysical Research Communications, 1999, 261, 652-657.	1.0	47
54	Pinus taeda phenylpropenal double-bond reductase: Purification, cDNA cloning, heterologous expression in Escherichia coli, and subcellular localization in P. taeda. Phytochemistry, 2006, 67, 1765-1780.	1.4	47

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55	(+)-Pinoresinol synthase: A stereoselective oxidase catalysing 8,8â€²-lignan formation in Forsythia intermedia. Tetrahedron Letters, 1994, 35, 4731-4734.	0.7	46
56	Plant cell walls are enfeebled when attempting to preserve native lignin configuration with poly-p-hydroxycinnamaldehydes: Evolutionary implications. Phytochemistry, 2007, 68, 1932-1956.	1.4	45
57	Insights into lignin primary structure and deconstruction from Arabidopsis thaliana COMT (caffeic) Tj ETQq1 1 0.784314 rgBT /Overlo	1.5	45
58	The Arabidopsis cinnamoyl CoA reductaseirx4mutant has a delayed but coherent (normal) program of lignification. Plant Journal, 2006, 48, 674-686.	2.8	44
59	Formation of (â^')-arctigenin in Forsythia intermedia. Phytochemistry, 1993, 32, 643-652.	1.4	43
60	Furanofuran lignan metabolism as a function of seed maturation in sesamum indicum: methylenedioxy bridge formation. Phytochemistry, 1998, 49, 387-394.	1.4	43
61	Accurate massâ€“time tag library for LC/MS-based metabolite profiling of medicinal plants. Phytochemistry, 2013, 91, 187-197.	1.4	43
62	A multi-omics strategy resolves the elusive nature of alkaloids in Podophyllum species. Molecular BioSystems, 2014, 10, 2838-2849.	2.9	43
63	Stereoselective Synthesis of 8,9-Licarinediols. Tetrahedron, 2000, 56, 9181-9193.	1.0	41
64	Induced compression wood formation in Douglas fir (Pseudotsuga menziesii) in microgravity. Phytochemistry, 2001, 57, 847-857.	1.4	41
65	Monolignol radicalâ€“radical coupling networks in western red cedar and Arabidopsis and their evolutionary implications. Phytochemistry, 2002, 61, 311-322.	1.4	40
66	Synthesis and chiral HPLC analysis of the dibenzyltetrahydrofuran lignans, larreatricins, 8â€²-epi-larreatricins, 3,3â€²-didemethoxyverrucosins and meso-3,3â€²-didemethoxynectandrin B in the creosote bush (Larrea tridentata): evidence for regiospecific control of coupling. Organic and Biomolecular Chemistry, 2003, 1, 2307-2313.	1.5	39
67	Lignin and Lignan Biosynthesis: Distinctions and Reconciliations. ACS Symposium Series, 1998, , 1-27.	0.5	38
68	A pinoresinolâ€“lariciresinol reductase homologue from the creosote bush (Larrea tridentata) catalyzes the efficient in vitro conversion of p-coumaryl/coniferyl alcohol esters into the allylphenols chavicol/eugenol, but not the propenylphenols p-anol/isoeugenol. Archives of Biochemistry and Biophysics, 2007, 465, 209-218.	1.4	36
69	Phenylbutanoid and taxane-like metabolites from needles of Taxus brevifolia. Phytochemistry, 1994, 36, 975-985.	1.4	34
70	Reaction tissue formation and stem tensile modulus properties in wildâ€type and pâ€coumarateâ€3â€hydroxylase downregulated lines of alfalfa, Medicago sativa (Fabaceae). American Journal of Botany, 2007, 94, 912-925.	0.8	34
71	Secoisolariciresinol dehydrogenase: mode of catalysis and stereospecificity of hydride transfer in Podophyllum peltatum. Organic and Biomolecular Chemistry, 2006, 4, 808.	1.5	32
72	Intramolecular acyl migrations in taxanes from Taxus brevifolia. Phytochemistry, 1993, 34, 473-476.	1.4	28

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73	Evolution of Lignan and Neolignan Biochemical Pathways. ACS Symposium Series, 1994, , 202-246.	0.5	28
74	Î²-Glucuronidase as Reporter Gene: Advantages and Limitations. , 2006, 323, 263-274.		28
75	Formation of cis-Coniferin in Cell-Free Extracts of Fagus grandifolia Ehrh Bark. Plant Physiology, 1990, 94, 209-213.	2.3	25
76	Transgenic Hybrid Poplar for Sustainable and Scalable Production of the Commodity/Specialty Chemical, 2-Phenylethanol. PLoS ONE, 2013, 8, e83169.	1.1	25
77	Probing native lignin macromolecular configuration in Arabidopsis thaliana in specific cell wall types: Further insights into limited substrate degeneracy and assembly of the lignins of ref8, fah 1â€“2 and C4H::F5H lines. Molecular BioSystems, 2010, 6, 499-515.	2.9	24
78	Mixed acetoxy-benzoxy taxane esters from Taxus brevifolia. Phytochemistry, 1992, 31, 4249-4252.	1.4	23
79	The 'Abnormal Lignins': Mapping Heartwood Formation Through the Lignan Biosynthetic Pathway. ACS Symposium Series, 1998, , 389-421.	0.5	23
80	The Biochemical Control of Monolignol Coupling and Structure During Lignan and Lignin Biosynthesis. ACS Symposium Series, 1998, , 334-361.	0.5	22
81	Lignans (Neolignans) and Allyl/Propenyl Phenols: Biogenesis, Structural Biology, and Biological/Human Health Considerations. , 2010, , 815-928.		21
82	The arogenate dehydratase gene family: Towards understanding differential regulation of carbon flux through phenylalanine into primary versus secondary metabolic pathways. Phytochemistry, 2012, 82, 22-37.	1.4	21
83	Allyl/propenyl phenol synthases from the creosote bush and engineering production of specialty/commodity chemicals, eugenol/isoeugenol, in Escherichia coli. Archives of Biochemistry and Biophysics, 2014, 541, 37-46.	1.4	21
84	NASA GeneLab RNA-seq consensus pipeline: Standardized processing of short-read RNA-seq data. IScience, 2021, 24, 102361.	1.9	20
85	Specimen block counter-staining for localization of GUS expression in transgenic arabidopsis and tobacco. Plant Cell Reports, 2002, 21, 35-39.	2.8	18
86	Reduced Arogenate Dehydratase Expression: Ramifications for Photosynthesis and Metabolism. Plant Physiology, 2018, 177, 115-131.	2.3	18
87	Phylogenetic Links in Plant Defense Systems: Lignans, Isoflavonoids, and Their Reductases. ACS Symposium Series, 1997, , 58-89.	0.5	17
88	Lignins: A Twenty-First Century Challenge. , 0, , 213-305.		17
89	Eugenol specialty chemical production in transgenic poplar (Populus tremulaÂÃ—ÂP. alba) field trials. Plant Biotechnology Journal, 2017, 15, 970-981.	4.1	17
90	Trees: A Remarkable Biochemical Bounty. , 2010, , 1173-1296.		16

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91	Pterocarpan synthase (PTS) structures suggest a common quinone methideâ€“stabilizing function in dirigent proteins and proteins with dirigent-like domains. Journal of Biological Chemistry, 2020, 295, 11584-11601.	1.6	16
92	Editorial: Lignans: Insights Into Their Biosynthesis, Metabolic Engineering, Analytical Methods and Health Benefits. Frontiers in Plant Science, 2020, 11, 630327.	1.7	16
93	Composition of the Bioactive Essential Oils from the Leaves ofEugenia stipitataMcVaugh ssp.sororiafrom the Azores. Journal of Essential Oil Research, 2003, 15, 293-295.	1.3	15
94	Plant Lignans and Health: Cancer Chemoprevention and Biotechnological Opportunities. , 1999, 66, 675-694.		14
95	Stereoselective phenolic coupling in Blechnum spicant: formation of 8â€“2â€² linked (â˜)-cis-blechnic, (â˜)-trans-blechnic and (â˜)-brainic acids. Chemical Communications, 2001, , 113-114.	2.2	13
96	Toward Engineering the Metabolic Pathways of Cancer-Preventing Lignans in Cereal Grains and Other Crops. , 1999, , 67-87.		13
97	[13C]-Specific labeling of 8â€“2â€² linked (â˜)-cis-blechnic, (â˜)-trans-blechnic and (â˜)-brainic acids in the fern Blechnum spicant. Phytochemistry, 2003, 62, 501-511.	1.4	12
98	Relationship of dirigent protein and 18s RNA transcript localization to heartwood formation in western red cedar. Phytochemistry, 2008, 69, 3032-3037.	1.4	12
99	Lignans: Diversity, Biosynthesis, and Function. ACS Symposium Series, 1995, , 135-167.	0.5	11
100	Metabolic Engineering of Plant Allyl/Propenyl Phenol and Lignin Pathways: Future Potential for Biofuels/Bioenergy, Polymer Intermediates, and Specialty Chemicals?. Advances in Plant Biochemistry and Molecular Biology, 2008, , 385-428.	0.5	11
101	Active site cleft mutants of Os9BGlu31 transglucosidase modify acceptor substrate specificity and allow production of multiple kaempferol glycosides. Biochimica Et Biophysica Acta - General Subjects, 2015, 1850, 1405-1414.	1.1	11
102	Assessment of a putative proton relay in Arabidopsis cinnamyl alcohol dehydrogenase catalysis. Organic and Biomolecular Chemistry, 2013, 11, 1127.	1.5	10
103	RNAiModulation of Chlorogenic Acid and Lignin Deposition inNicotiana tabacumand Insufficient Compensatory Metabolic Cross-Talk. Journal of Natural Products, 2021, 84, 694-706.	1.5	6
104	Monolignol Compositional Determinants in Loblolly Pine: Aromatic Amino Acid Metabolism and Associated Rate-Limiting Steps. ACS Symposium Series, 1999, , 118-144.	0.5	5
105	Pinoresinolâ€lariciresinol reductase: Substrate versatility, enantiospecificity, and kinetic properties. Chirality, 2020, 32, 770-789.	1.3	5
106	Localization of Dirigent Protein Involved in Lignan Biosynthesis: Implications for Lignification at the Tissue and Subcellular Level. , 1999, , 393-411.		5
107	Stereo Selectivity in Polyphenol Biosynthesis. , 1992, , 73-95.		3
108	Vascular Plant Lignification: Biochemical/Structural Biology Considerations of Upstream Aromatic Amino Acid and Monolignol Pathways. , 2010, , 541-604.		2

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109	Laser Microdissection and Genetic Manipulation Technologies to Probe Lignin Heterogeneity and Configuration in Plant Cell Walls. , 2012, 908, 229-250.		1
110	New Insights Into Lignification via Network and Multi-Omics Analyses of Arogenate Dehydratase Knock-Out Mutants in Arabidopsis thaliana. Frontiers in Plant Science, 2021, 12, 664250.	1.7	1
111	Linum Lignan and Associated Biochemical Pathways in Human Health and Plant Defense. Plant Genetics and Genomics: Crops and Models, 2019, , 167-193.	0.3	1
112	Delineating the Metabolic Pathway(s) to Secoisolariciresinol Diglucoside Hydroxymethyl Glutarate Oligomers in Flaxseed (Linum usitatissimum). , 2003, , .		0
113	Draft Genome Sequence of a Gordonia sp. Isolated from the Soil of a Red Alder Plant. Genome Announcements, 2017, 5, .	0.8	0
114	Enantioselective Separations in Phytochemistry. , 1991, , 75-112.		0
115	De novosequencing and native mass spectrometry revealed hetero-association of dirigent protein homologs and potential interacting proteins inForsythiaÃ—intermedia. Analyst, The, 2021, 146, 7670-7681.	1.7	0