

# John Shanklin

## List of Publications by Citations

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105  
papers

6,316  
citations

42  
h-index

79  
g-index

122  
ext. papers

7,350  
ext. citations

7.6  
avg, IF

5.84  
L-index

#	Paper	IF	Citations
105	DESATURATION AND RELATED MODIFICATIONS OF FATTY ACIDS <sup>1</sup> . <i>Annual Review of Plant Biology</i> , <b>1998</b> , 49, 611-641		695
104	Eight histidine residues are catalytically essential in a membrane-associated iron enzyme, stearoyl-CoA desaturase, and are conserved in alkane hydroxylase and xylene monooxygenase. <i>Biochemistry</i> , <b>1994</b> , 33, 12787-94	3.2	649
103	A fatty acid desaturase modulates the activation of defense signaling pathways in plants. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2001</b> , 98, 9448-53	11.5	321
102	Catalytic plasticity of fatty acid modification enzymes underlying chemical diversity of plant lipids. <i>Science</i> , <b>1998</b> , 282, 1315-7	33.3	202
101	Oil accumulation is controlled by carbon precursor supply for fatty acid synthesis in <i>Chlamydomonas reinhardtii</i> . <i>Plant and Cell Physiology</i> , <b>2012</b> , 53, 1380-90	4.9	186
100	Resonance Raman evidence for an Fe-O-Fe center in stearoyl-ACP desaturase. Primary sequence identity with other diiron-oxo proteins. <i>Biochemistry</i> , <b>1994</b> , 33, 12776-86	3.2	186
99	Defective pollen wall is required for anther and microspore development in rice and encodes a fatty acyl carrier protein reductase. <i>Plant Cell</i> , <b>2011</b> , 23, 2225-46	11.6	180
98	The Arabidopsis stearoyl-acyl carrier protein-desaturase family and the contribution of leaf isoforms to oleic acid synthesis. <i>Plant Molecular Biology</i> , <b>2007</b> , 63, 257-71	4.6	167
97	Male Sterile2 encodes a plastid-localized fatty acyl carrier protein reductase required for pollen exine development in Arabidopsis. <i>Plant Physiology</i> , <b>2011</b> , 157, 842-53	6.6	150
96	Redesign of soluble fatty acid desaturases from plants for altered substrate specificity and double bond position. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>1997</b> , 94, 4872-7	11.5	149
95	Desaturases: emerging models for understanding functional diversification of diiron-containing enzymes. <i>Journal of Biological Chemistry</i> , <b>2009</b> , 284, 18559-63	5.4	139
94	Desaturation and hydroxylation. Residues 148 and 324 of Arabidopsis FAD2, in addition to substrate chain length, exert a major influence in partitioning of catalytic specificity. <i>Journal of Biological Chemistry</i> , <b>2002</b> , 277, 15613-20	5.4	136
93	50 years of Arabidopsis research: highlights and future directions. <i>New Phytologist</i> , <b>2016</b> , 209, 921-44	9.8	128
92	Triacylglycerol Metabolism, Function, and Accumulation in Plant Vegetative Tissues. <i>Annual Review of Plant Biology</i> , <b>2016</b> , 67, 179-206	30.7	124
91	Feedback regulation of plastidic acetyl-CoA carboxylase by 18:1-acyl carrier protein in Brassica napus. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2012</b> , 109, 10107-12 <sup>5</sup>	11.5	108
90	Metabolic engineering of sugarcane to accumulate energy-dense triacylglycerols in vegetative biomass. <i>Plant Biotechnology Journal</i> , <b>2016</b> , 14, 661-9	11.6	104
89	Modulating seed beta-ketoacyl-acyl carrier protein synthase II level converts the composition of a temperate seed oil to that of a palm-like tropical oil. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2007</b> , 104, 4742-7	11.5	102

88	Arabidopsis lipins, PDAT1 acyltransferase, and SDP1 triacylglycerol lipase synergistically direct fatty acids toward oxidation, thereby maintaining membrane lipid homeostasis. <i>Plant Cell</i> , <b>2014</b> , 26, 4119-34	11.6	101
87	Identification of amino acid residues involved in substrate specificity of plant acyl-ACP thioesterases using a bioinformatics-guided approach. <i>BMC Plant Biology</i> , <b>2007</b> , 7, 1	5.3	97
86	Fusing catalase to an alkane-producing enzyme maintains enzymatic activity by converting the inhibitory byproduct H <sub>2</sub> O <sub>2</sub> to the cosubstrate O <sub>2</sub> . <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2013</b> , 110, 3191-6	11.5	96
85	The Stroma of Higher Plant Plastids Contain ClpP and ClpC, Functional Homologs of Escherichia coli ClpP and ClpA: An Archetypal Two-Component ATP-Dependent Protease. <i>Plant Cell</i> , <b>1995</b> , 7, 1713	11.6	89
84	A determinant of substrate specificity predicted from the acyl-acyl carrier protein desaturase of developing castor seed. <i>Plant Physiology</i> , <b>1998</b> , 117, 593-8	6.6	83
83	Switching desaturase enzyme specificity by alternate subcellular targeting. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2004</b> , 101, 10266-71	11.5	79
82	Trehalose 6-Phosphate Positively Regulates Fatty Acid Synthesis by Stabilizing WRINKLED1. <i>Plant Cell</i> , <b>2018</b> , 30, 2616-2627	11.6	77
81	Identification of the Arabidopsis palmitoyl-monogalactosyldiacylglycerol delta7-desaturase gene FAD5, and effects of plastidial retargeting of Arabidopsis desaturases on the fad5 mutant phenotype. <i>Plant Physiology</i> , <b>2004</b> , 136, 4237-45	6.6	75
80	Stearoyl-acyl carrier protein desaturases are associated with floral isolation in sexually deceptive orchids. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2011</b> , 108, 5696-701	11.5	72
79	Engineering delta 9-16:0-acyl carrier protein (ACP) desaturase specificity based on combinatorial saturation mutagenesis and logical redesign of the castor delta 9-18:0-ACP desaturase. <i>Journal of Biological Chemistry</i> , <b>2001</b> , 276, 21500-5	5.4	72
78	Redirection of metabolic flux for high levels of omega-7 monounsaturated fatty acid accumulation in camelina seeds. <i>Plant Biotechnology Journal</i> , <b>2015</b> , 13, 38-50	11.6	70
77	Substrate-dependent mutant complementation to select fatty acid desaturase variants for metabolic engineering of plant seed oils. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2000</b> , 97, 12350-5	11.5	70
76	Phosphorylation of WRINKLED1 by KIN10 Results in Its Proteasomal Degradation, Providing a Link between Energy Homeostasis and Lipid Biosynthesis. <i>Plant Cell</i> , <b>2017</b> , 29, 871-889	11.6	69
75	Mutations in a Stearoyl-ACP-Desaturase Gene Are Associated with Enhanced Stearic Acid Levels in Soybean Seeds. <i>Crop Science</i> , <b>2008</b> , 48, 2305-2313	2.4	59
74	Metabolic engineering of seeds can achieve levels of omega-7 fatty acids comparable with the highest levels found in natural plant sources. <i>Plant Physiology</i> , <b>2010</b> , 154, 1897-904	6.6	56
73	FAD2 and FAD3 desaturases form heterodimers that facilitate metabolic channeling in vivo. <i>Journal of Biological Chemistry</i> , <b>2014</b> , 289, 17996-8007	5.4	55
72	Azide and acetate complexes plus two iron-depleted crystal structures of the di-iron enzyme delta9 stearoyl-acyl carrier protein desaturase. Implications for oxygen activation and catalytic intermediates. <i>Journal of Biological Chemistry</i> , <b>2003</b> , 278, 25072-80	5.4	53
71	Remote control of regioselectivity in acyl-acyl carrier protein-desaturases. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2011</b> , 108, 16594-9	11.5	51

70	Evidence linking the <i>Pseudomonas oleovorans</i> alkane omega-hydroxylase, an integral membrane diiron enzyme, and the fatty acid desaturase family. <i>FEBS Letters</i> , <b>2003</b> , 545, 188-92	3.8	51
69	Scanning transmission electron microscopy and small-angle scattering provide evidence that native <i>Escherichia coli</i> ClpP is a tetradecamer with an axial pore. <i>Biochemistry</i> , <b>1995</b> , 34, 10910-7	3.2	51
68	Exploring the hydroxylation-dehydrogenation connection: novel catalytic activity of castor stearyl-ACP Delta(9) desaturase. <i>Journal of the American Chemical Society</i> , <b>2002</b> , 124, 3277-83	16.4	48
67	A structural model of the plant acyl-acyl carrier protein thioesterase FatB comprises two helix/4-stranded sheet domains, the N-terminal domain containing residues that affect specificity and the C-terminal domain containing catalytic residues. <i>Journal of Biological Chemistry</i> , <b>2005</b> , 280, 3621-7	5.4	45
66	Parallel and competitive pathways for substrate desaturation, hydroxylation, and radical rearrangement by the non-heme diiron hydroxylase AlkB. <i>Journal of the American Chemical Society</i> , <b>2012</b> , 134, 20365-75	16.4	43
65	The crystal structure of the ivy Delta4-16:0-ACP desaturase reveals structural details of the oxidized active site and potential determinants of regioselectivity. <i>Journal of Biological Chemistry</i> , <b>2007</b> , 282, 19863-71	5.4	43
64	Characterization and analysis of the cotton cyclopropane fatty acid synthase family and their contribution to cyclopropane fatty acid synthesis. <i>BMC Plant Biology</i> , <b>2011</b> , 11, 97	5.3	42
63	Half-of-the-Sites Reactivity of the Castor $\Delta$ -18:0-Acyl Carrier Protein Desaturase. <i>Plant Physiology</i> , <b>2015</b> , 169, 432-41	6.6	40
62	Characterization of a structurally and functionally diverged acyl-acyl carrier protein desaturase from milkweed seed. <i>Plant Molecular Biology</i> , <b>1997</b> , 33, 1105-10	4.6	37
61	Red light-induced accumulation of ubiquitin-phytochrome conjugates in both monocots and dicots. <i>Plant Physiology</i> , <b>1989</b> , 90, 380-4	6.6	37
60	A multifunctional acyl-acyl carrier protein desaturase from <i>Hedera helix</i> L. (English ivy) can synthesize 16- and 18-carbon monoene and diene products. <i>Journal of Biological Chemistry</i> , <b>2005</b> , 280, 28169-76	5.4	36
59	Overexpression and purification of the <i>Escherichia coli</i> inner membrane enzyme acyl-acyl carrier protein synthase in an active form. <i>Protein Expression and Purification</i> , <b>2000</b> , 18, 355-60	2	35
58	Partial purification and peptide mapping of ubiquitin-phytochrome conjugates from oat. <i>Biochemistry</i> , <b>1989</b> , 28, 6028-6034	3.2	34
57	Coexpressing <i>Escherichia coli</i> cyclopropane synthase with <i>Sterculia foetida</i> Lysophosphatidic acid acyltransferase enhances cyclopropane fatty acid accumulation. <i>Plant Physiology</i> , <b>2014</b> , 164, 455-65	6.6	31
56	Revealing the catalytic potential of an acyl-ACP desaturase: tandem selective oxidation of saturated fatty acids. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2008</b> , 105, 14738-43	11.5	31
55	Expression of mRNA and steady-state levels of protein isoforms of enoyl-ACP reductase from <i>Brassica napus</i> . <i>Plant Molecular Biology</i> , <b>1994</b> , 26, 155-63	4.6	31
54	Towards oilcane: Engineering hyperaccumulation of triacylglycerol into sugarcane stems. <i>GCB Bioenergy</i> , <b>2020</b> , 12, 476-490	5.6	30
53	Biotin Attachment Domain-Containing Proteins Irreversibly Inhibit Acetyl CoA Carboxylase. <i>Plant Physiology</i> , <b>2018</b> , 177, 208-215	6.6	27

52	A single mutation in the castor Delta9-18:0-desaturase changes reaction partitioning from desaturation to oxidase chemistry. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2006</b> , 103, 17220-4	11.5	27
51	A family of metal-dependent phosphatases implicated in metabolite damage-control. <i>Nature Chemical Biology</i> , <b>2016</b> , 12, 621-7	11.7	26
50	Survey of the total fatty acid and triacylglycerol composition and content of 30 duckweed species and cloning of a $\beta$ -desaturase responsible for the production of linolenic and stearidonic acids in <i>Lemna gibba</i> . <i>BMC Plant Biology</i> , <b>2013</b> , 13, 201	5.3	26
49	Structural basis for SARS-CoV-2 envelope protein recognition of human cell junction protein PALS1. <i>Nature Communications</i> , <b>2021</b> , 12, 3433	17.4	26
48	Production of long chain alcohols and alkanes upon coexpression of an acyl-ACP reductase and aldehyde-deformylating oxygenase with a bacterial type-I fatty acid synthase in <i>E. coli</i> . <i>Molecular BioSystems</i> , <b>2015</b> , 11, 2464-72		25
47	Linking enzyme sequence to function using Conserved Property Difference Locator to identify and annotate positions likely to control specific functionality. <i>BMC Bioinformatics</i> , <b>2005</b> , 6, 284	3.6	25
46	Identification of bottlenecks in the accumulation of cyclic fatty acids in camelina seed oil. <i>Plant Biotechnology Journal</i> , <b>2018</b> , 16, 926-938	11.6	23
45	Sugar Potentiation of Fatty Acid and Triacylglycerol Accumulation. <i>Plant Physiology</i> , <b>2017</b> , 175, 696-707	6.6	23
44	Application of KIE and thia approaches in the mechanistic study of a plant stearoyl-ACP $\beta$ desaturase. <i>Chemical Communications</i> , <b>2001</b> , 401-402	5.8	23
43	Amino Acid Change in an Orchid Desaturase Enables Mimicry of the Pollinator's Sex Pheromone. <i>Current Biology</i> , <b>2016</b> , 26, 1505-11	6.3	22
42	Effect of substrate on the diiron(III) site in stearoyl acyl carrier protein delta 9-desaturase as disclosed by cryoreduction electron paramagnetic resonance/electron nuclear double resonance spectroscopy. <i>Biochemistry</i> , <b>2005</b> , 44, 1309-15	3.2	21
41	Preliminary crystallographic data for stearoyl-acyl carrier protein desaturase from castor seed. <i>Journal of Molecular Biology</i> , <b>1992</b> , 225, 561-4	6.5	21
40	Sequence of a cDNA from <i>Chlamydomonas reinhardtii</i> encoding a ubiquitin 52 amino acid extension protein. <i>Nucleic Acids Research</i> , <b>1989</b> , 17, 8377	20.1	21
39	Conjugated fatty acid synthesis: residues 111 and 115 influence product partitioning of <i>Momordica charantia</i> conjugase. <i>Journal of Biological Chemistry</i> , <b>2012</b> , 287, 16230-7	5.4	20
38	Sequence of a Complementary DNA from <i>Cucumis sativus</i> L. Encoding the Stearoyl-Acyl-Carrier Protein Desaturase. <i>Plant Physiology</i> , <b>1991</b> , 97, 467-8	6.6	18
37	Structural basis for Ca-dependent activation of a plant metacaspase. <i>Nature Communications</i> , <b>2020</b> , 11, 2249	17.4	17
36	Evidence that the yeast desaturase Ole1p exists as a dimer in vivo. <i>Journal of Biological Chemistry</i> , <b>2010</b> , 285, 19384-90	5.4	15
35	WRINKLED1 Regulates BIOTIN ATTACHMENT DOMAIN-CONTAINING Proteins that Inhibit Fatty Acid Synthesis. <i>Plant Physiology</i> , <b>2019</b> , 181, 55-62	6.6	14

34	Metabolic and functional connections between cytoplasmic and chloroplast triacylglycerol storage. <i>Progress in Lipid Research</i> , <b>2020</b> , 80, 101069	14.3	13
33	Tissue-specific differences in metabolites and transcripts contribute to the heterogeneity of ricinoleic acid accumulation in <i>Ricinus communis</i> L. (castor) seeds. <i>Metabolomics</i> , <b>2019</b> , 15, 6	4.7	13
32	Stereochemistry of Delta4 dehydrogenation catalyzed by an ivy ( <i>Hedera helix</i> ) Delta9 desaturase homolog. <i>Organic and Biomolecular Chemistry</i> , <b>2007</b> , 5, 1270-5	3.9	11
31	Oxidation of chiral 9-fluorinated substrates by castor stearyl-ACP $\Delta$ desaturase yields novel products. <i>Chemical Communications</i> , <b>2001</b> , 765-766	5.8	9
30	Mechanisms and functions of membrane lipid remodeling in plants. <i>Plant Journal</i> , <b>2021</b> , 107, 37-53	6.9	9
29	Expression of a Lychee with an Enhances Cyclopropane Fatty Acid Accumulation in Camelina Seeds. <i>Plant Physiology</i> , <b>2019</b> , 180, 1351-1361	6.6	8
28	Diversion of Carbon Flux from Sugars to Lipids Improves the Growth of an Arabidopsis Starchless Mutant. <i>Plants</i> , <b>2019</b> , 8,	4.5	8
27	Altering Arabidopsis Oilseed Composition by a Combined Antisense-Hairpin RNAi Gene Suppression Approach. <i>JAOCS, Journal of the American Oil Chemists Society</i> , <b>2009</b> , 86, 41-49	1.8	8
26	Use of $^{19}\text{F}$ NMR spectroscopy to probe enzymatic oxidation of fluorine-tagged sulfides. <i>Magnetic Resonance in Chemistry</i> , <b>2002</b> , 40, 524-528	2.1	8
25	Changes in fatty-acid composition and stearyl-acyl carrier protein desaturase expression in developing <i>Theobroma cacao</i> L. embryos. <i>Planta</i> , <b>1994</b> , 193, 83	4.7	8
24	Cellular Organization of Triacylglycerol Biosynthesis in Microalgae. <i>Sub-Cellular Biochemistry</i> , <b>2016</b> , 86, 207-21	5.5	8
23	Two clusters of residues contribute to the activity and substrate specificity of Fm1, a bifunctional oleate and linoleate desaturase of fungal origin. <i>Journal of Biological Chemistry</i> , <b>2018</b> , 293, 19844-19853 <sup>5-4</sup>		8
22	Membrane Bound Desaturases and Hydroxylases: Structure Function Studies <b>1995</b> , 18-20		7
21	Structure-Function Studies on Desaturases and Related Hydrocarbon Hydroxylases <b>1997</b> , 6-10		7
20	In vitro enzymatic oxidation of a fluorine-tagged sulfido substrate analogue: a $^{19}\text{F}$ NMR investigation. <i>Magnetic Resonance in Chemistry</i> , <b>2006</b> , 44, 629-32	2.1	6
19	Rhodoxanthin synthase from honeysuckle; a membrane diiron enzyme catalyzes the multistep conversion of $\beta$ -carotene to rhodoxanthin. <i>Science Advances</i> , <b>2020</b> , 6, eaay9226	14.3	5
18	Stereochemistry of 10-sulfoxidation catalyzed by a soluble Delta9 desaturase. <i>Organic and Biomolecular Chemistry</i> , <b>2010</b> , 8, 1322-8	3.9	5
17	Arabidopsis SnRK1 negatively regulates phenylpropanoid metabolism via Kelch domain-containing F-box proteins. <i>New Phytologist</i> , <b>2021</b> , 229, 3345-3359	9.8	5

16	Biotin attachment domain-containing proteins mediate hydroxy fatty acid-dependent inhibition of acetyl CoA carboxylase. <i>Plant Physiology</i> , <b>2021</b> , 185, 892-901	6.6	5
15	Castor Stearoyl-ACP Desaturase Can Synthesize a Vicinal Diol by Dioxygenase Chemistry. <i>Plant Physiology</i> , <b>2020</b> , 182, 730-738	6.6	4
14	Hydrothermal pretreatment for valorization of genetically engineered bioenergy crop for lipid and cellulosic sugar recovery. <i>Bioresource Technology</i> , <b>2021</b> , 341, 125817	11	4
13	Expression of a Bacterial Trehalose-6-phosphate Synthase otsA Increases Oil Accumulation in Plant Seeds and Vegetative Tissues. <i>Frontiers in Plant Science</i> , <b>2021</b> , 12, 656962	6.2	3
12	A conserved evolutionary mechanism permits $\Delta$ desaturation of very-long-chain fatty acyl lipids. <i>Journal of Biological Chemistry</i> , <b>2020</b> , 295, 11337-11345	5.4	2
11	Approaches to the Design of Acyl-ACP Desaturases with Altered Fatty Acid Chain-Length and Double Bond Positional Specificities <b>1997</b> , 374-376		2
10	An Expanded Role for WRINKLED1 Metabolic Control Based on Combined Phylogenetic and Biochemical Analyses		2
9	Solving a furan fatty acid biosynthesis puzzle. <i>Journal of Biological Chemistry</i> , <b>2020</b> , 295, 9802-9803	5.4	2
8	The Role of Sugar Signaling in Regulating Plant Fatty Acid Synthesis. <i>Frontiers in Plant Science</i> , <b>2021</b> , 12, 643843	6.2	2
7	Mobilizing Vacuolar Sugar Increases Vegetative Triacylglycerol Accumulation. <i>Frontiers in Plant Science</i> , <b>2021</b> , 12, 708902	6.2	2
6	Enzyme Engineering. <i>Advances in Plant Biochemistry and Molecular Biology</i> , <b>2008</b> , 29-47		1
5	BIOTIN ATTACHMENT DOMAIN-CONTAINING proteins, inhibitors of ACCase, are regulated by WRINKLED1		1
4	AlphaFold Protein Structure Database for Sequence-Independent Molecular Replacement. <i>Crystals</i> , <b>2021</b> , 11, 1227	2.3	0
3	A consensus-based ensemble approach to improve transcriptome assembly. <i>BMC Bioinformatics</i> , <b>2021</b> , 22, 513	3.6	0
2	Atomistic insight on structure and dynamics of spinach acyl carrier protein with substrate length. <i>Biophysical Journal</i> , <b>2021</b> , 120, 3841-3853	2.9	0
1	Expression of MRNA and Steady-State Levels of Protein Isoforms of Enoyl-ACP Reductase From <i>Brassica napus</i> <b>1995</b> , 90-92		