Christophe Maurel

List of Publications by Year
in descending order

88 papers	12,718 citations	30070 54 h-index	51608 86 g-index
121 all docs	121 docs citations	121 times ranked	9135 citing authors

#	Article	IF	Citations
1	Plant Aquaporins: Membrane Channels with Multiple Integrated Functions. Annual Review of Plant Biology, 2008, 59, 595-624.	18.7	1,071
2	Aquaporins in Plants. Physiological Reviews, 2015, 95, 1321-1358.	28.8	658
3	Cytosolic pH regulates root water transport during anoxic stress through gating of aquaporins. Nature, 2003, 425, 393-397.	27.8	601
4	The Role of Aquaporins in Root Water Uptake. Annals of Botany, 2002, 90, 301-313.	2.9	531
5	AQUAPORINS AND WATER PERMEABILITY OF PLANT MEMBRANES. Annual Review of Plant Biology, 1997, 48, 399-429.	14.3	503
6	Early Effects of Salinity on Water Transport in Arabidopsis Roots. Molecular and Cellular Features of Aquaporin Expression. Plant Physiology, 2005, 139, 790-805.	4.8	498
7	Role of a Single Aquaporin Isoform in Root Water Uptake. Plant Cell, 2003, 15, 509-522.	6.6	331
8	Auxin regulates aquaporin function to facilitate lateral root emergence. Nature Cell Biology, 2012, 14, 991-998.	10.3	323
9	Aquaporins in a challenging environment: molecular gears for adjusting plant water status. Plant, Cell and Environment, 2005, 28, 85-96.	5.7	318
10	Plant aquaporins: Novel functions and regulation properties. FEBS Letters, 2007, 581, 2227-2236.	2.8	288
11	Aquaporins facilitate hydrogen peroxide entry into guard cells to mediate ABA- and pathogen-triggered stomatal closure. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 9200-9205.	7.1	281
12	Aquaporins Contribute to ABA-Triggered Stomatal Closure through OST1-Mediated Phosphorylation. Plant Cell, 2015, 27, 1945-1954.	6.6	261
13	Plant aquaporins: Roles in plant physiology. Biochimica Et Biophysica Acta - General Subjects, 2014, 1840, 1574-1582.	2.4	243
14	Aquaporins. A Molecular Entry into Plant Water Relations. Plant Physiology, 2001, 125, 135-138.	4.8	238
15	Single-Molecule Analysis of PIP2;1 Dynamics and Partitioning Reveals Multiple Modes of <i>Arabidopsis</i> Plasma Membrane Aquaporin Regulation Â. Plant Cell, 2011, 23, 3780-3797.	6.6	229
16	Cell wall constrains lateral diffusion of plant plasma-membrane proteins. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 12805-12810.	7.1	224
17	Stimulusâ€induced downregulation of root water transport involves reactive oxygen speciesâ€activated cell signalling and plasma membrane intrinsic protein internalization. Plant Journal, 2008, 56, 207-218.	5.7	222
18	A PIP1 Aquaporin Contributes to Hydrostatic Pressure-Induced Water Transport in Both the Root and Rosette of Arabidopsis. Plant Physiology, 2010, 152, 1418-1430.	4.8	220

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19	Multiple Phosphorylations in the C-terminal Tail of Plant Plasma Membrane Aquaporins. Molecular and Cellular Proteomics, 2008, 7, 1019-1030.	3.8	210
20	The water permeability of Arabidopsis plasma membrane is regulated by divalent cations and pH. Plant Journal, 2002, 30, 71-81.	5.7	209
21	Aquaporin Nt-TIPa can account for the high permeability of tobacco cell vacuolar membrane to small neutral solutes. Plant Journal, 1999, 18, 577-587.	5.7	203
22	A receptor-like kinase mutant with absent endodermal diffusion barrier displays selective nutrient homeostasis defects. ELife, 2014, 3, e03115.	6.0	203
23	Perception of the auxin signal at the plasma membrane of tobacco mesophyll protoplasts. Plant Journal, 1991, 1, 83-93.	5.7	199
24	Changes in plasma membrane lipids, aquaporins and proton pump of broccoli roots, as an adaptation mechanism to salinity. Phytochemistry, 2009, 70, 492-500.	2.9	182
25	Natural Variation of Root Hydraulics in Arabidopsis Grown in Normal and Salt-Stressed Conditions Â Â. Plant Physiology, 2011, 155, 1264-1276.	4.8	169
26	Aquaporin-Mediated Reduction in Maize Root Hydraulic Conductivity Impacts Cell Turgor and Leaf Elongation Even without Changing Transpiration Â. Plant Physiology, 2009, 150, 1093-1104.	4.8	165
27	Regulation of <i>Arabidopsis</i> Leaf Hydraulics Involves Light-Dependent Phosphorylation of Aquaporins in Veins Â. Plant Cell, 2013, 25, 1029-1039.	6.6	158
28	Single <i>rol</i> Genes from the <i>Agrobacterium rhizogenes</i> T_L-DNA Alter Some of the Cellular Responses to Auxin in <i>Nicotiana tabacum</i>. Plant Physiology, 1991, 97, 212-216.	4.8	151
29	Disruption of putative anion channel gene AtCLC-a in Arabidopsis suggests a role in the regulation of nitrate content. Plant Journal, 2000, 21, 259-267.	5.7	151
30	Plasma membrane of Beta vulgaris storage root shows high water channel activity regulated by cytoplasmic pH and a dual range of calcium concentrations. Journal of Experimental Botany, 2006, 57, 609-621.	4.8	149
31	Structureâ€“function analysis of plant aquaporin <i>At</i>PIP2;1 gating by divalent cations and protons. Biochemical Journal, 2008, 415, 409-416.	3.7	148
32	A look inside: localization patterns and functions of intracellular plant aquaporins. New Phytologist, 2009, 184, 289-302.	7.3	143
33	The cellular dynamics of plant aquaporin expression and functions. Current Opinion in Plant Biology, 2009, 12, 690-698.	7.1	136
34	A proteomic study reveals novel insights into the diversity of aquaporin forms expressed in the plasma membrane of plant roots. Biochemical Journal, 2003, 373, 289-296.	3.7	128
35	The significance of roots as hydraulic rheostats. Journal of Experimental Botany, 2010, 61, 3191-3198.	4.8	128
36	Evidence for the Presence of Aquaporin-3 in Human Red Blood Cells. Journal of Biological Chemistry, 1998, 273, 8407-8412.	3.4	124

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37	Regulation of leaf hydraulics: from molecular to whole plant levels. Frontiers in Plant Science, 2013, 4, 255.	3.6	123
38	Vacuolar membrane localization of theArabidopsisâ€˜twoâ€poreâ€™ K+channel KCO1. Plant Journal, 2002, 29, 809-820.	5.7	113
39	Fluorescence recovery after photobleaching reveals high cycling dynamics of plasma membrane aquaporins in Arabidopsis roots under salt stress. Plant Journal, 2012, 69, 894-905.	5.7	108
40	The Role of Plasma Membrane Aquaporins in Regulating the Bundle Sheath-Mesophyll Continuum and Leaf Hydraulics Â Â Â. Plant Physiology, 2014, 166, 1609-1620.	4.8	105
41	Dolichol Biosynthesis and Its Effects on the Unfolded Protein Response and Abiotic Stress Resistance in <i>Arabidopsis</i> Â Â. Plant Cell, 2008, 20, 1879-1898.	6.6	102
42	Aquaporins and plant transpiration. Plant, Cell and Environment, 2016, 39, 2580-2587.	5.7	101
43	Root architecture and hydraulics converge for acclimation to changing water availability. Nature Plants, 2020, 6, 744-749.	9.3	100
44	Expression and Inhibition of Aquaporins in Germinating Arabidopsis Seeds. Plant and Cell Physiology, 2006, 47, 1241-1250.	3.1	99
45	Enhancement of root hydraulic conductivity by methyl jasmonate and the role of calcium and abscisic acid in this process. Plant, Cell and Environment, 2014, 37, 995-1008.	5.7	88
46	Dual regulation of root hydraulic conductivity and plasma membrane aquaporins by plant nitrate accumulation and high-affinity nitrate transporter NRT2.1. Plant and Cell Physiology, 2016, 57, 733-742.	3.1	84
47	Novel Aquaporin Regulatory Mechanisms Revealed by Interactomics. Molecular and Cellular Proteomics, 2016, 15, 3473-3487.	3.8	80
48	Methylation of aquaporins in plant plasma membrane. Biochemical Journal, 2006, 400, 189-197.	3.7	76
49	Auxin regulates the promoter of the root-inducing rolB gene of Agrobacterium rhizogenes in transgenic tobacco. Molecular Genetics and Genomics, 1990, 223, 58-64.	2.4	75
50	Coordinated Post-translational Responses of Aquaporins to Abiotic and Nutritional Stimuli in Arabidopsis Roots. Molecular and Cellular Proteomics, 2013, 12, 3886-3897.	3.8	73
51	A Potassium-Dependent Oxygen Sensing Pathway Regulates Plant Root Hydraulics. Cell, 2016, 167, 87-98.e14.	28.9	72
52	Natural variation at XND1 impacts root hydraulics and trade-off for stress responses in Arabidopsis. Nature Communications, 2018, 9, 3884.	12.8	67
53	Subcellular Redistribution of Root Aquaporins Induced by Hydrogen Peroxide. Molecular Plant, 2015, 8, 1103-1114.	8.3	66
54	Mechanisms and Effects of Retention of Overâ€Expressed Aquaporin AtPIP2;1 in the Endoplasmic Reticulum. Traffic, 2011, 12, 473-482.	2.7	63

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55	Osmotic Stress Activates Two Reactive Oxygen Species Pathways with Distinct Effects on Protein Nanodomains and Diffusion. Plant Physiology, 2019, 179, 1581-1593.	4.8	62
56	Single-molecule fluorescence imaging to quantify membrane protein dynamics and oligomerization in living plant cells. Nature Protocols, 2015, 10, 2054-2063.	12.0	60
57	Surveillance of cell wall diffusion barrier integrity modulates water and solute transport in plants. Scientific Reports, 2019, 9, 4227.	3.3	60
58	Super-Resolved and Dynamic Imaging of Membrane Proteins in Plant Cells Reveal Contrasting Kinetic Profiles and Multiple Confinement Mechanisms. Molecular Plant, 2015, 8, 339-342.	8.3	56
59	The high diversity of aquaporins reveals novel facets of plant membrane functions. Current Opinion in Plant Biology, 2000, 3, 476-481.	7.1	55
60	Aquaporin Trafficking in Plant Cells: An Emerging Membraneâ€Protein Model. Traffic, 2013, 14, 629-635.	2.7	54
61	Abscisic Acid Coordinates Dose-Dependent Developmental and Hydraulic Responses of Roots to Water Deficit. Plant Physiology, 2019, 180, 2198-2211.	4.8	54
62	The response of Arabidopsis root water transport to a challenging environment implicates reactive oxygen species- and phosphorylation-dependent internalization of aquaporins. Plant Signaling and Behavior, 2008, 3, 1096-1098.	2.4	53
63	Vegetative and Sperm Cell-Specific Aquaporins of Arabidopsis Highlight the Vacuolar Equipment of Pollen and Contribute to Plant Reproduction Â. Plant Physiology, 2014, 164, 1697-1706.	4.8	50
64	Oscillating Aquaporin Phosphorylation and 14-3-3 Proteins Mediate the Circadian Regulation of Leaf Hydraulics. Plant Cell, 2019, 31, 417-429.	6.6	47
65	Plant aquaporins on the move: reversible phosphorylation, lateral motion and cycling. Current Opinion in Plant Biology, 2014, 22, 101-107.	7.1	45
66	An abundant TIP expressed in mature highly vacuolated cells. Plant Journal, 2000, 21, 83-90.	5.7	43
67	A Plasma Membrane Nanodomain Ensures Signal Specificity during Osmotic Signaling in Plants. Current Biology, 2020, 30, 4654-4664.e4.	3.9	40
68	Probing plasma membrane dynamics at the single-molecule level. Trends in Plant Science, 2013, 18, 617-624.	8.8	39
69	Two different effects of calcium on aquaporins in salinity-stressed pepper plants. Planta, 2008, 228, 15-25.	3.2	38
70	Aquaporins: for more than water at the plantâ€"fungus interface?. New Phytologist, 2011, 190, 815-817.	7.3	37
71	The calciumâ€dependent protein kinase <scp>CPK</scp>7 acts on root hydraulic conductivity. Plant, Cell and Environment, 2015, 38, 1312-1320.	5.7	34
72	Physiological roles of Casparian strips and suberin in the transport of water and solutes. New Phytologist, 2021, 232, 2295-2307.	7.3	33

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73	Phosphorylation dynamics of membrane proteins from <i>Arabidopsis</i> roots submitted to salt stress. Proteomics, 2014, 14, 1058-1070.	2.2	32
74	Salt stress triggers enhanced cycling of Arabidopsis root plasma-membrane aquaporins. Plant Signaling and Behavior, 2012, 7, 529-532.	2.4	24
75	Vacuolar biogenesis and aquaporin expression at early germination of broad bean seeds. Plant Physiology and Biochemistry, 2014, 82, 123-132.	5.8	21
76	O-Carboxyl- and N-Methyltransferases Active on Plant Aquaporins. Plant and Cell Physiology, 2010, 51, 2092-2104.	3.1	19
77	Non-invasive hydrodynamic imaging in plant roots at cellular resolution. Nature Communications, 2021, 12, 4682.	12.8	19
78	Regulation of a plant aquaporin by a Casparian strip membrane domain proteinâ€like. Plant, Cell and Environment, 2019, 42, 1788-1801.	5.7	18
79	Hormonal and environmental signaling pathways target membrane water transport. Plant Physiology, 2021, 187, 2056-2070.	4.8	18
80	Proposition d'un modÃ¨le de reprÃ©sentation et de mesure de la performance globale. Comptabilite Controle Audit, 2014, Tome 20, 73-99.	0.5	14
81	Approaches and determinants to sustainably improve crop production. Food and Energy Security, 2023, 12, .	4.3	12
82	Phenotyping and modeling of root hydraulic architecture reveal critical determinants of axial water transport. Plant Physiology, 0, , .	4.8	12
83	Plant Aquaporins. Advances in Botanical Research, 2018, 87, 25-56.	1.1	11
84	Sub-cellular markers highlight intracellular dynamics of membrane proteins in response to abiotic treatments in rice. Rice, 2018, 11, 23.	4.0	10
85	Experimental and conceptual approaches to root water transport. Plant and Soil, 2022, 478, 349-370.	3.7	10
86	Dynamic Behavior and Internalization of Aquaporins at the Surface of Plant Cells. , 2012, , 185-199.		1
87	Plant Aquaporins. , 2014, , 1-23.		1
88	OUP accepted manuscript. Plant Physiology, 2021, , .	4.8	0