

Laurent Blanchoin

List of Publications by Year in descending order

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papers

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22132

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docs citations

146
times ranked

9994
citing authors

#	ARTICLE	IF	CITATIONS
1	Molecular Mechanisms Controlling Actin Filament Dynamics in Nonmuscle Cells. Annual Review of Biophysics and Biomolecular Structure, 2000, 29, 545-576.	18.3	1,319
2	Actin Dynamics, Architecture, and Mechanics in Cell Motility. Physiological Reviews, 2014, 94, 235-263.	13.1	1,109
3	Direct observation of dendritic actin filament networks nucleated by Arp2/3 complex and WASP/Scar proteins. Nature, 2000, 404, 1007-1011.	13.7	502
4	Actin Network Architecture Can Determine Myosin Motor Activity. Science, 2012, 336, 1310-1314.	6.0	281
5	Mechanism of Interaction of Acanthamoeba Actophorin (ADF/Cofilin) with Actin Filaments. Journal of Biological Chemistry, 1999, 274, 15538-15546.	1.6	280
6	Influence of the C Terminus of Wiskott-Aldrich Syndrome Protein (WASp) and the Arp2/3 Complex on Actin Polymerization. Biochemistry, 1999, 38, 15212-15222.	1.2	256
7	Interactions of ADF/cofilin, Arp2/3 complex, capping protein and profilin in remodeling of branched actin filament networks. Current Biology, 2000, 10, 1273-1282.	1.8	254
8	Microtubules self-repair in response to mechanical stress. Nature Materials, 2015, 14, 1156-1163.	13.3	244
9	Architecture and Connectivity Govern Actin Network Contractility. Current Biology, 2016, 26, 616-626.	1.8	221
10	Actin filament dynamics are dominated by rapid growth and severing activity in the <i>Arabidopsis</i> cortical array. Journal of Cell Biology, 2009, 184, 269-280.	2.3	219
11	Inhibitory signalling to the Arp2/3 complex steers cell migration. Nature, 2013, 503, 281-284.	13.7	208
12	The centrosome is an actin-organizing centre. Nature Cell Biology, 2016, 18, 65-75.	4.6	206
13	Inhibition of the Arp2/3 complex-nucleated actin polymerization and branch formation by tropomyosin. Current Biology, 2001, 11, 1300-1304.	1.8	205
14	Cofilin Increases the Bending Flexibility of Actin Filaments: Implications for Severing and Cell Mechanics. Journal of Molecular Biology, 2008, 381, 550-558.	2.0	200
15	Cofilin Tunes the Nucleotide State of Actin Filaments and Severs at Bare and Decorated Segment Boundaries. Current Biology, 2011, 21, 862-868.	1.8	192
16	The Putative Arabidopsis Arp2/3 Complex Controls Leaf Cell Morphogenesis. Plant Physiology, 2003, 132, 2034-2044.	2.3	183
17	Actin dynamics: old friends with new stories. Current Opinion in Plant Biology, 2006, 9, 554-562.	3.5	180
18	The Formin Homology 1 Domain Modulates the Actin Nucleation and Bundling Activity of Arabidopsis FORMIN1. Plant Cell, 2005, 17, 2296-2313.	3.1	169

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19	Plant formin AtFH5 is an evolutionarily conserved actin nucleator involved in cytokinesis. <i>Nature Cell Biology</i> , 2005, 7, 374-380.	4.6	167
20	Hydrolysis of ATP by Polymerized Actin Depends on the Bound Divalent Cation but Not Profilin. <i>Biochemistry</i> , 2002, 41, 597-602.	1.2	161
21	Rapid formin-mediated actin-filament elongation is essential for polarized plant cell growth. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 13341-13346.	3.3	158
22	Interaction of Actin Monomers with Acanthamoeba Actophorin (ADF/Cofilin) and Profilin. <i>Journal of Biological Chemistry</i> , 1998, 273, 25106-25111.	1.6	155
23	Self-repair promotes microtubule rescue. <i>Nature Cell Biology</i> , 2016, 18, 1054-1064.	4.6	153
24	Actin-Filament Stochastic Dynamics Mediated by ADF/Cofilin. <i>Current Biology</i> , 2007, 17, 825-833.	1.8	151
25	Tau co-organizes dynamic microtubule and actin networks. <i>Scientific Reports</i> , 2015, 5, 9964.	1.6	149
26	Regulation of actin dynamics by actin-binding proteins in pollen. <i>Journal of Experimental Botany</i> , 2010, 61, 1969-1986.	2.4	144
27	<i>Arabidopsis</i> VILLIN5, an Actin Filament Bundling and Severing Protein, Is Necessary for Normal Pollen Tube Growth. <i>Plant Cell</i> , 2010, 22, 2749-2767.	3.1	138
28	<i>Arabidopsis</i> VILLIN1 Generates Actin Filament Cables That Are Resistant to Depolymerization. <i>Plant Cell</i> , 2005, 17, 486-501.	3.1	131
29	Cofilin-Linked Changes in Actin Filament Flexibility Promote Severing. <i>Biophysical Journal</i> , 2011, 101, 151-159.	0.2	131
30	Phosphorylation of the WASP-VCA Domain Increases Its Affinity for the Arp2/3 Complex and Enhances Actin Polymerization by WASP. <i>Molecular Cell</i> , 2003, 11, 1229-1239.	4.5	126
31	Coronin Switches Roles in Actin Disassembly Depending on the Nucleotide State of Actin. <i>Molecular Cell</i> , 2009, 34, 364-374.	4.5	124
32	A α -Primer-Based Mechanism Underlies Branched Actin Filament Network Formation and Motility. <i>Current Biology</i> , 2010, 20, 423-428.	1.8	117
33	Nucleation geometry governs ordered actin networks structures. <i>Nature Materials</i> , 2010, 9, 827-832.	13.3	117
34	Structural basis of actin sequestration by thymosin- β 4: implications for WH2 proteins. <i>EMBO Journal</i> , 2004, 23, 3599-3608.	3.5	111
35	Directed cytoskeleton self-organization. <i>Trends in Cell Biology</i> , 2012, 22, 671-682.	3.6	111
36	Actin nucleation at the centrosome controls lymphocyte polarity. <i>Nature Communications</i> , 2016, 7, 10969.	5.8	109

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37	<i>Arabidopsis</i> Actin Depolymerizing Factor4 Modulates the Stochastic Dynamic Behavior of Actin Filaments in the Cortical Array of Epidermal Cells. <i>Plant Cell</i> , 2011, 23, 3711-3726.	3.1	106
38	Architecture Dependence of Actin Filament Network Disassembly. <i>Current Biology</i> , 2015, 25, 1437-1447.	1.8	104
39	A Gelsolin-like Protein from <i>Papaver rhoeas</i> Pollen (PrABP80) Stimulates Calcium-regulated Severing and Depolymerization of Actin Filaments. <i>Journal of Biological Chemistry</i> , 2004, 279, 23364-23375.	1.6	103
40	The Formin DAD Domain Plays Dual Roles in Autoinhibition and Actin Nucleation. <i>Current Biology</i> , 2011, 21, 384-390.	1.8	101
41	A Novel Mechanism for the Formation of Actin-Filament Bundles by a Nonprocessive Formin. <i>Current Biology</i> , 2006, 16, 1924-1930.	1.8	97
42	Structural basis for the phototoxicity of the fluorescent protein KillerRed. <i>FEBS Letters</i> , 2009, 583, 2839-2842.	1.3	97
43	Capping Protein Modulates the Dynamic Behavior of Actin Filaments in Response to Phosphatidic Acid in <i>Arabidopsis</i> . <i>Plant Cell</i> , 2012, 24, 3742-3754.	3.1	96
44	Xenopus Actin-interacting Protein 1 (XAip1) Enhances Cofilin Fragmentation of Filaments by Capping Filament Ends. <i>Journal of Biological Chemistry</i> , 2002, 277, 43011-43016.	1.6	93
45	<i>Arabidopsis</i> Capping Protein (AtCP) Is a Heterodimer That Regulates Assembly at the Barbed Ends of Actin Filaments. <i>Journal of Biological Chemistry</i> , 2003, 278, 44832-44842.	1.6	93
46	Reverse pH-Dependence of Chromophore Protonation Explains the Large Stokes Shift of the Red Fluorescent Protein mKeima. <i>Journal of the American Chemical Society</i> , 2009, 131, 10356-10357.	6.6	91
47	<i>Arabidopsis</i> VILLIN1 and VILLIN3 Have Overlapping and Distinct Activities in Actin Bundle Formation and Turnover. <i>Plant Cell</i> , 2010, 22, 2727-2748.	3.1	91
48	Plant formins: Diverse isoforms and unique molecular mechanism. <i>Biochimica Et Biophysica Acta - Molecular Cell Research</i> , 2010, 1803, 201-206.	1.9	87
49	Kinetic mechanism of end-to-end annealing of actin filaments 1 Edited by M. F. Moody. <i>Journal of Molecular Biology</i> , 2001, 312, 721-730.	2.0	83
50	Actin-Network Architecture Regulates Microtubule Dynamics. <i>Current Biology</i> , 2018, 28, 2647-2656.e4.	1.8	82
51	Actin filaments regulate microtubule growth at the centrosome. <i>EMBO Journal</i> , 2019, 38, .	3.5	82
52	Actin dynamics in plant cells: a team effort from multiple proteins orchestrates this very fast-paced game. <i>Current Opinion in Plant Biology</i> , 2010, 13, 714-723.	3.5	80
53	Fast high-resolution 3D total internal reflection fluorescence microscopy by incidence angle scanning and azimuthal averaging. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 17164-17169.	3.3	79
54	Lattice defects induce microtubule self-renewal. <i>Nature Physics</i> , 2019, 15, 830-838.	6.5	79

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55	Signaling to Actin Stochastic Dynamics. <i>Annual Review of Plant Biology</i> , 2015, 66, 415-440.	8.6	77
56	Loss of Ena/VASP interferes with lamellipodium architecture, motility and integrin-dependent adhesion. <i>ELife</i> , 2020, 9, .	2.8	76
57	Identification of Arabidopsis Cyclase-associated Protein 1 as the First Nucleotide Exchange Factor for Plant Actin. <i>Molecular Biology of the Cell</i> , 2007, 18, 3002-3014.	0.9	74
58	Actin polymerization or myosin contraction: two ways to build up cortical tension for symmetry breaking. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2013, 368, 20130005.	1.8	73
59	Stress fibres are embedded in a contractile cortical network. <i>Nature Materials</i> , 2021, 20, 410-420.	13.3	73
60	Origin of Twist-Bend Coupling in Actin Filaments. <i>Biophysical Journal</i> , 2010, 99, 1852-1860.	0.2	72
61	Phosphorylation of Acanthamoeba actophorin (ADF/cofilin) blocks interaction with actin without a change in atomic structure. <i>Journal of Molecular Biology</i> , 2000, 295, 203-211.	2.0	71
62	Centrosome centering and decentering by microtubule network rearrangement. <i>Molecular Biology of the Cell</i> , 2016, 27, 2833-2843.	0.9	70
63	Tailoring cryo-electron microscopy grids by photo-micropatterning for in-cell structural studies. <i>Nature Methods</i> , 2020, 17, 50-54.	9.0	67
64	Self-repair protects microtubules from destruction by molecular motors. <i>Nature Materials</i> , 2021, 20, 883-891.	13.3	67
65	Reprogramming cell shape with laser nano-patterning. <i>Journal of Cell Science</i> , 2012, 125, 2134-40.	1.2	66
66	Actin dynamics in the cortical array of plant cells. <i>Current Opinion in Plant Biology</i> , 2013, 16, 678-687.	3.5	65
67	Interactions of tobacco microtubule-associated protein MAP65-1b with microtubules. <i>Plant Journal</i> , 2004, 39, 126-134.	2.8	64
68	Stochastic Severing of Actin Filaments by Actin Depolymerizing Factor/Cofilin Controls the Emergence of a Steady Dynamical Regime. <i>Biophysical Journal</i> , 2008, 94, 2082-2094.	0.2	62
69	The Myosin Passenger Protein Smy1 Controls Actin Cable Structure and Dynamics by Acting as a Formin Damper. <i>Developmental Cell</i> , 2011, 21, 217-230.	3.1	57
70	Fabrication of three-dimensional electrical connections by means of directed actin self-organization. <i>Nature Materials</i> , 2013, 12, 416-421.	13.3	55
71	Profilin-Dependent Nucleation and Assembly of Actin Filaments Controls Cell Elongation in Arabidopsis. <i>Plant Physiology</i> , 2016, 170, 220-233.	2.3	51
72	Turnover of branched actin filament networks by stochastic fragmentation with ADF/cofilin. <i>Molecular Biology of the Cell</i> , 2011, 22, 2541-2550.	0.9	50

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73	Confinement induces actin flow in a meiotic cytoplasm. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 11705-11710.	3.3	50
74	CLASP Mediates Microtubule Repair by Restricting Lattice Damage and Regulating Tubulin Incorporation. <i>Current Biology</i> , 2020, 30, 2175-2183.e6.	1.8	50
75	Actin polymerization processes in plant cells. <i>Current Opinion in Plant Biology</i> , 2002, 5, 502-506.	3.5	49
76	Actin Filament Strain Promotes Severing and Cofilin Dissociation. <i>Biophysical Journal</i> , 2017, 112, 2624-2633.	0.2	49
77	Interaction of G-actin with thymosin β_4 and its variants thymosin β_9 and thymosin β_{10} . <i>Journal of Muscle Research and Cell Motility</i> , 1994, 15, 278-86.	0.9	48
78	INF2-Mediated Severing through Actin Filament Encirclement and Disruption. <i>Current Biology</i> , 2014, 24, 156-164.	1.8	48
79	Mechanical Heterogeneity Favors Fragmentation of Strained Actin Filaments. <i>Biophysical Journal</i> , 2015, 108, 2270-2281.	0.2	48
80	Local actin nucleation tunes centrosomal microtubule nucleation during passage through mitosis. <i>EMBO Journal</i> , 2019, 38, .	3.5	48
81	Phosphorylation of Microtubule-associated Protein STOP by Calmodulin Kinase II. <i>Journal of Biological Chemistry</i> , 2006, 281, 19561-19569.	1.6	47
82	Attachment Conditions Control Actin Filament Buckling and the Production of Forces. <i>Biophysical Journal</i> , 2007, 92, 2546-2558.	0.2	47
83	How actin network dynamics control the onset of actin-based motility. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012, 109, 14440-14445.	3.3	42
84	Microtubules control nuclear shape and gene expression during early stages of hematopoietic differentiation. <i>EMBO Journal</i> , 2020, 39, e103957.	3.5	42
85	Acto-myosin network geometry defines centrosome position. <i>Current Biology</i> , 2021, 31, 1206-1220.e5.	1.8	42
86	Insights into the evolution of regulated actin dynamics via characterization of primitive gelsolin/cofilin proteins from Asgard archaea. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 19904-19913.	3.3	38
87	Microtubule self-repair. <i>Current Opinion in Cell Biology</i> , 2021, 68, 144-154.	2.6	36
88	Dynamic reorganization of the actin cytoskeleton. <i>F1000Research</i> , 2015, 4, 940.	0.8	35
89	MICAL2 enhances branched actin network disassembly by oxidizing Arp3B-containing Arp2/3 complexes. <i>Journal of Cell Biology</i> , 2021, 220, .	2.3	34
90	Cell-penetrating Peptides with Intracellular Actin-remodeling Activity in Malignant Fibroblasts. <i>Journal of Biological Chemistry</i> , 2010, 285, 7712-7721.	1.6	31

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91	Geometrical and Mechanical Properties Control Actin Filament Organization. PLoS Computational Biology, 2015, 11, e1004245.	1.5	30
92	Network heterogeneity regulates steering in actin-based motility. Nature Communications, 2017, 8, 655.	5.8	30
93	A key function for microtubule-associated-protein 6 in activity-dependent stabilisation of actin filaments in dendritic spines. Nature Communications, 2018, 9, 3775.	5.8	30
94	Dissipation of contractile forces: the missing piece in cell mechanics. Molecular Biology of the Cell, 2017, 28, 1825-1832.	0.9	28
95	Dynamic stability of the actin ecosystem. Journal of Cell Science, 2019, 132, .	1.2	28
96	Adaptive Response of Actin Bundles under Mechanical Stress. Biophysical Journal, 2017, 113, 1072-1079.	0.2	27
97	The availability of filament ends modulates actin stochastic dynamics in live plant cells. Molecular Biology of the Cell, 2014, 25, 1263-1275.	0.9	26
98	Spatial integration of mechanical forces by $\hat{\pm}$ -actinin establishes actin network symmetry. Journal of Cell Science, 2019, 132, .	1.2	25
99	Kinetics of Association of Myosin Subfragment-1 to Unlabeled and Pyrenyl-labeled Actin. Journal of Biological Chemistry, 1996, 271, 12380-12386.	1.6	22
100	Design of a 2D no-flow chamber to monitor hematopoietic stem cells. Lab on A Chip, 2015, 15, 77-85.	3.1	20
101	Actin Cytoskeleton: A Team Effort during Actin Assembly. Current Biology, 2012, 22, R643-R645.	1.8	19
102	Structural and biochemical characterization of a human adenovirus 2/12 penton base chimera. FEBS Journal, 2006, 273, 4336-4345.	2.2	16
103	Quantitative regulation of the dynamic steady state of actin networks. ELife, 2019, 8, .	2.8	16
104	Kinetics of the Interaction of Myosin Subfragment-1 with G-Actin. Journal of Biological Chemistry, 1995, 270, 7125-7133.	1.6	15
105	Geometrical Control of Actin Assembly and Contractility. Methods in Cell Biology, 2014, 120, 19-38.	0.5	13
106	Structure and dynamics of Odinarchaeota tubulin and the implications for eukaryotic microtubule evolution. Science Advances, 2022, 8, eabm2225.	4.7	13
107	Force Production by a Bundle of Growing Actin Filaments Is Limited by Its Mechanical Properties. Biophysical Journal, 2020, 118, 182-192.	0.2	11
108	Kinesin-6 Klp9 orchestrates spindle elongation by regulating microtubule sliding and growth. ELife, 2021, 10, .	2.8	9

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109	Arabidopsis capping protein senses cellular phosphatidic acid levels and transduces these into changes in actin cytoskeleton dynamics. <i>Plant Signaling and Behavior</i> , 2012, 7, 1727-1730.	1.2	8
110	The biochemical composition of the actomyosin network sets the magnitude of cellular traction forces. <i>Molecular Biology of the Cell</i> , 2021, 32, 1737-1748.	0.9	8
111	Hematopoietic progenitors polarize in contact with bone marrow stromal cells in response to SDF1. <i>Journal of Cell Biology</i> , 2021, 220, .	2.3	8
112	Directed Actin Assembly and Motility. <i>Methods in Enzymology</i> , 2014, 540, 283-300.	0.4	7
113	Inhibitors Target Actin Nucleators. <i>Chemistry and Biology</i> , 2009, 16, 1125-1126.	6.2	5
114	Active cargo positioning in antiparallel transport networks. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 14835-14842.	3.3	5
115	Adaptive Actin Networks. <i>Developmental Cell</i> , 2017, 42, 565-566.	3.1	3
116	Actin assembly: never forget rate constants. <i>Nature Reviews Molecular Cell Biology</i> , 2016, 17, 536-536.	16.1	1
117	Cytoskeleton regulation: Distinct steps in Arp2/3 complex activation. <i>Current Biology</i> , 2022, 32, R220-R222.	1.8	1
118	Stress Accumulation Originating from Mechanical Asymmetry Promotes Actin Filament Severing at Boundaries of Bare and Cofilin-Decorated Segments. <i>Biophysical Journal</i> , 2011, 100, 300a.	0.2	0
119	Laurent Blanchoin. <i>Current Biology</i> , 2014, 24, R674-R675.	1.8	0
120	Opening remarks from the Editors. <i>Biophysical Reviews</i> , 2018, 10, 1479-1480.	1.5	0
121	A new perspective on microtubule dynamics: destruction by molecular motors and self-repair. <i>Comptes Rendus - Biologies</i> , 2021, 344, 297-310.	0.1	0
122	Autoregulatory control of the stability and plasticity of cytoskeletal networks. <i>Biophysical Journal</i> , 2022, 121, 449a.	0.2	0
123	Visualization and Quantification of Microtubule Self-Repair. <i>Methods in Molecular Biology</i> , 2022, 2430, 279-289.	0.4	0
124	Reconstituting the Interaction Between Purified Nuclei and Microtubule Network. <i>Methods in Molecular Biology</i> , 2022, 2430, 385-399.	0.4	0