

# Malcolm Irving

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/678990/publications.pdf>

Version: 2024-02-01

59  
papers

3,673  
citations

136950

32  
h-index

133252

59  
g-index

63  
all docs

63  
docs citations

63  
times ranked

1600  
citing authors

#	ARTICLE	IF	CITATIONS
1	Skeletal Muscle Performance Determined by Modulation of Number of Myosin Motors Rather Than Motor Force or Stroke Size. <i>Cell</i> , 2007, 131, 784-795.	28.9	274
2	Force generation by skeletal muscle is controlled by mechanosensing in myosin filaments. <i>Nature</i> , 2015, 528, 276-279.	27.8	249
3	Myosin head movements are synchronous with the elementary force-generating process in muscle. <i>Nature</i> , 1992, 357, 156-158.	27.8	205
4	Tilting of the light-chain region of myosin during step length changes and active force generation in skeletal muscle. <i>Nature</i> , 1995, 375, 688-691.	27.8	201
5	The myosin motor in muscle generates a smaller and slower working stroke at higher load. <i>Nature</i> , 2004, 428, 578-581.	27.8	183
6	The Stiffness of Skeletal Muscle in Isometric Contraction and Rigor: The Fraction of Myosin Heads Bound to Actin. <i>Biophysical Journal</i> , 1998, 74, 2459-2473.	0.5	168
7	Elastic bending and active tilting of myosin heads during muscle contraction. <i>Nature</i> , 1998, 396, 383-387.	27.8	155
8	Mechanism of force generation by myosin heads in skeletal muscle. <i>Nature</i> , 2002, 415, 659-662.	27.8	133
9	Regulation of Contraction by the Thick Filaments in Skeletal Muscle. <i>Biophysical Journal</i> , 2017, 113, 2579-2594.	0.5	129
10	Elastic distortion of myosin heads and repriming of the working stroke in muscle. <i>Nature</i> , 1995, 374, 553-555.	27.8	115
11	Myosin light chain phosphorylation enhances contraction of heart muscle via structural changes in both thick and thin filaments. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E3039-47.	7.1	105
12	Myosin binding protein-C activates thin filaments and inhibits thick filaments in heart muscle cells. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 18763-18768.	7.1	103
13	Conformation of the myosin motor during force generation in skeletal muscle. <i>Nature Structural Biology</i> , 2000, 7, 482-485.	9.7	98
14	Skeletal muscle resists stretch by rapid binding of the second motor domain of myosin to actin. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 20114-20119.	7.1	95
15	Myosin filament-based regulation of the dynamics of contraction in heart muscle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 8177-8186.	7.1	94
16	Calcium- and myosin-dependent changes in troponin structure during activation of heart muscle. <i>Journal of Physiology</i> , 2009, 587, 155-163.	2.9	89
17	Fluorescence Polarization Transients from Rhodamine Isomers on the Myosin Regulatory Light Chain in Skeletal Muscle Fibers. <i>Biophysical Journal</i> , 1998, 74, 3093-3110.	0.5	83
18	Omecamtiv mercabil and blebbistatin modulate cardiac contractility by perturbing the regulatory state of the myosin filament. <i>Journal of Physiology</i> , 2018, 596, 31-46.	2.9	83

#	ARTICLE	IF	CITATIONS
19	Orientation Changes of the Myosin Light Chain Domain During Filament Sliding in Active and Rigor Muscle. <i>Journal of Molecular Biology</i> , 2002, 318, 1275-1291.	4.2	69
20	Sarcomere length dependence of myosin filament structure in skeletal muscle fibres of the frog. <i>Journal of Physiology</i> , 2014, 592, 1119-1137.	2.9	62
21	Motion of myosin head domains during activation and force development in skeletal muscle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 7236-7240.	7.1	59
22	Phosphorylation of myosin regulatory light chain controls myosin head conformation in cardiac muscle. <i>Journal of Molecular and Cellular Cardiology</i> , 2015, 85, 199-206.	1.9	52
23	In Situ Orientations of Protein Domains. <i>Molecular Cell</i> , 2003, 11, 865-874.	9.7	51
24	The molecular basis of the steep force-calcium relation in heart muscle. <i>Journal of Molecular and Cellular Cardiology</i> , 2010, 48, 859-865.	1.9	50
25	The contributions of filaments and cross-bridges to sarcomere compliance in skeletal muscle. <i>Journal of Physiology</i> , 2014, 592, 3881-3899.	2.9	50
26	Distinct contributions of the thin and thick filaments to length-dependent activation in heart muscle. <i>ELife</i> , 2017, 6, .	6.0	48
27	Site-specific phosphorylation of myosin binding protein-C coordinates thin and thick filament activation in cardiac muscle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 15485-15494.	7.1	48
28	The Conformation of Myosin Heads in Relaxed Skeletal Muscle: Implications for Myosin-Based Regulation. <i>Biophysical Journal</i> , 2015, 109, 783-792.	0.5	47
29	Structural changes in troponin in response to Ca <sup>2+</sup> and myosin binding to thin filaments during activation of skeletal muscle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006, 103, 17771-17776.	7.1	40
30	Low temperature traps myosin motors of mammalian muscle in a refractory state that prevents activation. <i>Journal of General Physiology</i> , 2019, 151, 1272-1286.	1.9	40
31	Changes in conformation of myosin heads during the development of isometric contraction and rapid shortening in single frog muscle fibres. <i>Journal of Physiology</i> , 1999, 514, 305-312.	2.9	36
32	Structural dynamics of troponin during activation of skeletal muscle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 4626-4631.	7.1	35
33	NMR Structure of a Bifunctional Rhodamine Labeled N-Domain of Troponin C Complexed with the Regulatory "Switch" Peptide from Troponin I: Implications for in Situ Fluorescence Studies in Muscle Fibers. <i>Biochemistry</i> , 2003, 42, 4333-4348.	2.5	33
34	X-ray diffraction studies of the contractile mechanism in single muscle fibres. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2004, 359, 1883-1893.	4.0	33
35	Bifunctional Rhodamine Probes of Myosin Regulatory Light Chain Orientation in Relaxed Skeletal Muscle Fibers. <i>Biophysical Journal</i> , 2004, 86, 2329-2341.	0.5	27
36	Conformation of the Troponin Core Complex in the Thin Filaments of Skeletal Muscle during Relaxation and Active Contraction. <i>Journal of Molecular Biology</i> , 2012, 421, 125-137.	4.2	26

#	ARTICLE	IF	CITATIONS
37	Structure-Function Relation of the Myosin Motor in Striated Muscle. <i>Annals of the New York Academy of Sciences</i> , 2005, 1047, 232-247.	3.8	22
38	Hypertrophic cardiomyopathy mutation R58Q in the myosin regulatory light chain perturbs thick filament-based regulation in cardiac muscle. <i>Journal of Molecular and Cellular Cardiology</i> , 2018, 117, 72-81.	1.9	22
39	Myosin-based regulation of twitch and tetanic contractions in mammalian skeletal muscle. <i>ELife</i> , 2021, 10, .	6.0	22
40	Dependence of thick filament structure in relaxed mammalian skeletal muscle on temperature and interfilament spacing. <i>Journal of General Physiology</i> , 2021, 153, .	1.9	21
41	Stress-dependent activation of myosin in the heart requires thin filament activation and thick filament mechanosensing. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	21
42	Structural and functional effects of myosin-binding protein-C phosphorylation in heart muscle are not mimicked by serine-to-aspartate substitutions. <i>Journal of Biological Chemistry</i> , 2018, 293, 14270-14275.	3.4	19
43	The structural and functional effects of the familial hypertrophic cardiomyopathy-linked cardiac troponin C mutation, L29Q. <i>Journal of Molecular and Cellular Cardiology</i> , 2015, 87, 257-269.	1.9	18
44	Probing the mechanism of cardiovascular drugs using a covalent levosimendan analog. <i>Journal of Molecular and Cellular Cardiology</i> , 2016, 92, 174-184.	1.9	16
45	Cardiac myosin regulatory light chain kinase modulates cardiac contractility by phosphorylating both myosin regulatory light chain and troponin I. <i>Journal of Biological Chemistry</i> , 2020, 295, 4398-4410.	3.4	16
46	Orientation of the N- and C-Terminal Lobes of the Myosin Regulatory Light Chain in Cardiac Muscle. <i>Biophysical Journal</i> , 2015, 108, 304-314.	0.5	15
47	Reversible Covalent Binding to Cardiac Troponin C by the Ca <sup>2+</sup> -Sensitizer Levosimendan. <i>Biochemistry</i> , 2016, 55, 6032-6045.	2.5	14
48	Biomechanics goes quantum. <i>Nature</i> , 1991, 352, 284-285.	27.8	13
49	Conformation and Dynamics of a Rhodamine Probe Attached at Two Sites on a Protein: Implications for Molecular Structure Determination <i>in situ</i> . <i>Journal of the American Chemical Society</i> , 2008, 130, 17120-17128.	13.7	13
50	Muscle contraction: Weak and strong crossbridges. <i>Nature</i> , 1985, 316, 292-293.	27.8	11
51	Thick Filament Length Changes in Muscle Have Both Elastic and Structural Components. <i>Biophysical Journal</i> , 2019, 116, 983-984.	0.5	11
52	Toward Protein Structure In Situ: Comparison of Two Bifunctional Rhodamine Adducts of Troponin C. <i>Biophysical Journal</i> , 2007, 93, 1008-1020.	0.5	10
53	The regulatory light chain mediates inactivation of myosin motors during active shortening of cardiac muscle. <i>Nature Communications</i> , 2021, 12, 5272.	12.8	10
54	Orientation of the N-Terminal Lobe of the Myosin Regulatory Light Chain in Skeletal Muscle Fibers. <i>Biophysical Journal</i> , 2012, 102, 1418-1426.	0.5	8

#	ARTICLE	IF	CITATIONS
55	Reversible Covalent Reaction of Levosimendan with Cardiac Troponin C <i>in Vitro</i> and <i>in Situ</i> . <i>Biochemistry</i> , 2018, 57, 2256-2265.	2.5	8
56	Cooling intact and demembrated trabeculae from rat heart releases myosin motors from their inhibited conformation. <i>Journal of General Physiology</i> , 2022, 154, .	1.9	7
57	Myosin motors that cannot bind actin leave their folded OFF state on activation of skeletal muscle. <i>Journal of General Physiology</i> , 2021, 153, .	1.9	4
58	The Off-To-On Transition of Thick Filaments in Isolated Trabeculae from Rat Heart Induced by Cooling. <i>Biophysical Journal</i> , 2019, 116, 263a.	0.5	3
59	Changes in the Orientation of the Myosin Light Chain Domain (LCD) Associated with Thick Filament-Based Regulation of Skeletal Muscle. <i>Biophysical Journal</i> , 2014, 106, 724a-725a.	0.5	1