Daniel J Muller

List of Publications by Citations

279 papers	19,380 citations	78 h-index	128 g-index
286 ext. papers	21,987 ext. citations	9.6 avg, IF	6.93 L-index

#	Paper	IF	Citations
279	Atomic force microscopy as a multifunctional molecular toolbox in nanobiotechnology. *Nature Nanotechnology*, **2008**, 3, 261-9	28.7	568
278	GSDMD membrane pore formation constitutes the mechanism of pyroptotic cell death. *EMBO Journal*, **2016**, 35, 1766-78	13	521
277	Imaging modes of atomic force microscopy for application in molecular and cell biology. *Nature Nanotechnology*, **2017**, 12, 295-307	28.7	494
276	Hydrostatic pressure and the actomyosin cortex drive mitotic cell rounding. *Nature*, **2011**, 469, 226-30	50.4	453
275	Structural biology. Proton-powered turbine of a plant motor. *Nature*, **2000**, 405, 418-9	50.4	439
274	Observing single biomolecules at work with the atomic force microscope. *Nature Structural Biology*, **2000**, 7, 715-8		434
273	Single-cell force spectroscopy. *Journal of Cell Science*, **2008**, 121, 1785-91	5.3	380
272	Force probing surfaces of living cells to molecular resolution. *Nature Chemical Biology*, **2009**, 5, 383-90	11.7	371
271	Imaging and manipulation of biological structures with the AFM. *Micron*, **2002**, 33, 385-97	2.3	324
270	Electrostatically balanced subnanometer imaging of biological specimens by atomic force microscope. *Biophysical Journal*, **1999**, 76, 1101-11	2.9	318
269	Multiparametric imaging of biological systems by force-distance curve-based AFM. *Nature Methods*, **2013**, 10, 847-54	21.6	317
268	Adsorption of biological molecules to a solid support for scanning probe microscopy. *Journal of Structural Biology*, **1997**, 119, 172-88	3.4	282
267	Atomic force microscopy: a nanoscopic window on the cell surface. *Trends in Cell Biology*, **2011**, 21, 461-9	18.3	279
266	Atomic force microscopy-based mechanobiology. *Nature Reviews Physics*, **2019**, 1, 41-57	23.6	274
265	Structure of the rhodopsin dimer: a working model for G-protein-coupled receptors. *Current Opinion in Structural Biology*, **2006**, 16, 252-9	8.1	229
264	Tapping-mode atomic force microscopy produces faithful high-resolution images of protein surfaces. *Biophysical Journal*, **1999**, 77, 1150-8	2.9	223
263	Conformational changes in surface structures of isolated connexin 26 gap junctions. *EMBO Journal*, **2002**, 21, 3598-607	13	209

262	Voltage and pH-induced channel closure of porin OmpF visualized by atomic force microscopy. *Journal of Molecular Biology*, **1999**, 285, 1347-51	6.5	205
261	Neuronal uptake and propagation of a rare phosphorylated high-molecular-weight tau derived from Alzheimer's disease brain. *Nature Communications*, **2015**, 6, 8490	17.4	204
260	A new technical approach to quantify cell-cell adhesion forces by AFM. *Ultramicroscopy*, **2006**, 106, 637-44	3.1	195
259	Assembly of collagen into microribbons: effects of pH and electrolytes. *Journal of Structural Biology*, **2004**, 148, 268-78	3.4	191
258	AFM: a nanotool in membrane biology. *Biochemistry*, **2008**, 47, 7986-98	3.2	186
257	Control of directed cell migration in vivo by membrane-to-cortex attachment. *PLoS Biology*, **2010**, 8, e1000544	9.7	185
256	Atomic force microscopy and spectroscopy of native membrane proteins. *Nature Protocols*, **2007**, 2, 2191-7	18.8	178
255	Force-induced conformational change of bacteriorhodopsin. *Journal of Molecular Biology*, **1995**, 249, 239-43	6.5	174
254	Bacterial Na(+)-ATP synthase has an undecameric rotor. *EMBO Reports*, **2001**, 2, 229-33	6.5	170
253	Revealing early steps of alpha2beta1 integrin-mediated adhesion to collagen type I by using single-cell force spectroscopy. *Molecular Biology of the Cell*, **2007**, 18, 1634-44	3.5	165
252	High resolution imaging of native biological sample surfaces using scanning probe microscopy. *Current Opinion in Structural Biology*, **1997**, 7, 279-84	8.1	156
251	Kindlin-2 cooperates with talin to activate integrins and induces cell spreading by directly binding paxillin. *ELife*, **2016**, 5, e10130	8.9	155
250	The c15 ring of the Spirulina platensis F-ATP synthase: F1/F0 symmetry mismatch is not obligatory. *EMBO Reports*, **2005**, 6, 1040-4	6.5	150
249	Stability of bacteriorhodopsin alpha-helices and loops analyzed by single-molecule force spectroscopy. *Biophysical Journal*, **2002**, 83, 3578-88	2.9	150
248	Straight GDP-tubulin protofilaments form in the presence of taxol. *Current Biology*, **2007**, 17, 1765-70	6.3	147
247	Measuring cell adhesion forces of primary gastrulating cells from zebrafish using atomic force microscopy. *Journal of Cell Science*, **2005**, 118, 4199-206	5.3	143
246	Surface tongue-and-groove contours on lens MIP facilitate cell-to-cell adherence. *Journal of Molecular Biology*, **2000**, 300, 779-89	6.5	139
245	Observing structure, function and assembly of single proteins by AFM. *Progress in Biophysics and Molecular Biology*, **2002**, 79, 1-43	4.7	138

244	Quantifying cellular adhesion to extracellular matrix components by single-cell force spectroscopy. *Nature Protocols*, **2010**, 5, 1353-61	18.8	137
243	Five challenges to bringing single-molecule force spectroscopy into living cells. *Nature Methods*, **2011**, 8, 123-7	21.6	136
242	From images to interactions: high-resolution phase imaging in tapping-mode atomic force microscopy. *Biophysical Journal*, **2001**, 80, 3009-18	2.9	132
241	Observing growth steps of collagen self-assembly by time-lapse high-resolution atomic force microscopy. *Journal of Structural Biology*, **2006**, 154, 232-45	3.4	128
240	A practical guide to quantify cell adhesion using single-cell force spectroscopy. *Methods*, **2013**, 60, 169-78	4.6	127
239	Nanomechanical mapping of first binding steps of a virus to animal cells. *Nature Nanotechnology*, **2017**, 12, 177-183	28.7	127
238	Surface structures of native bacteriorhodopsin depend on the molecular packing arrangement in the membrane. *Journal of Molecular Biology*, **1999**, 285, 1903-9	6.5	127
237	Cholesterol increases kinetic, energetic, and mechanical stability of the human β-adrenergic receptor. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, E3463-72	11.5	121
236	Mechanism of membrane pore formation by human gasdermin-D. *EMBO Journal*, **2018**, 37,	13	114
235	Deciphering molecular interactions of native membrane proteins by single-molecule force spectroscopy. *Annual Review of Biophysics and Biomolecular Structure*, **2007**, 36, 233-60		113
234	Analyzing focal adhesion structure by atomic force microscopy. *Journal of Cell Science*, **2005**, 118, 5315-23	5.3	110
233	The fuzzy coat of pathological human Tau fibrils is a two-layered polyelectrolyte brush. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, E313-21	11.5	109
232	Electrostatic cell-surface repulsion initiates lumen formation in developing blood vessels. *Current Biology*, **2010**, 20, 2003-9	6.3	108
231	Quantification of surface tension and internal pressure generated by single mitotic cells. *Scientific Reports*, **2014**, 4, 6213	4.9	105
230	Atomic force microscopy of native purple membrane. *Biochimica Et Biophysica Acta - Bioenergetics*, **2000**, 1460, 27-38	4.6	104
229	Hydrodynamic effects in fast AFM single-molecule force measurements. *European Biophysics Journal*, **2005**, 34, 91-6	1.9	103
228	Cdk1-dependent mitotic enrichment of cortical myosin II promotes cell rounding against confinement. *Nature Cell Biology*, **2015**, 17, 148-59	23.4	102
227	High-resolution atomic force microscopy and spectroscopy of native membrane proteins. *Reports on Progress in Physics*, **2011**, 74, 086601	14.4	102

226	Unfolding pathways of native bacteriorhodopsin depend on temperature. *EMBO Journal*, **2003**, 22, 5220-9	13	100
225	Oligomer formation of tau protein hyperphosphorylated in cells. *Journal of Biological Chemistry*, **2014**, 289, 34389-407	5.4	99
224	The effect of unlocking RGD-motifs in collagen I on pre-osteoblast adhesion and differentiation. *Biomaterials*, **2010**, 31, 2827-35	15.6	98
223	Mapping flexible protein domains at subnanometer resolution with the atomic force microscope. *FEBS Letters*, **1998**, 430, 105-11	3.8	97
222	Single-molecule studies of membrane proteins. *Current Opinion in Structural Biology*, **2006**, 16, 489-95	8.1	96
221	Atomic force microscopy-based characterization and design of biointerfaces. *Nature Reviews Materials*, **2017**, 2,	73.3	95
220	A glucose-starvation response regulates the diffusion of macromolecules. *ELife*, **2016**, 5,	8.9	93
219	The oligomeric state of c rings from cyanobacterial F-ATP synthases varies from 13 to 15. *Journal of Bacteriology*, **2007**, 189, 5895-902	3.5	92
218	Cellular remodelling of individual collagen fibrils visualized by time-lapse AFM. *Journal of Molecular Biology*, **2007**, 372, 594-607	6.5	92
217	Impact of holdase chaperones Skp and SurA on the folding of □barrel outer-membrane proteins. *Nature Structural and Molecular Biology*, **2015**, 22, 795-802	17.6	90
216	Controlled unfolding and refolding of a single sodium-proton antiporter using atomic force microscopy. *Journal of Molecular Biology*, **2004**, 340, 1143-52	6.5	90
215	Bacteriorhodopsin folds into the membrane against an external force. *Journal of Molecular Biology*, **2006**, 357, 644-54	6.5	89
214	Surface topographies at subnanometer-resolution reveal asymmetry and sidedness of aquaporin-1. *Journal of Molecular Biology*, **1996**, 264, 907-18	6.5	88
213	Characterizing molecular interactions in different bacteriorhodopsin assemblies by single-molecule force spectroscopy. *Journal of Molecular Biology*, **2006**, 355, 640-50	6.5	87
212	Movement directionality in collective migration of germ layer progenitors. *Current Biology*, **2010**, 20, 161-9	6.3	85
211	Imaging G protein-coupled receptors while quantifying their ligand-binding free-energy landscape. *Nature Methods*, **2015**, 12, 845-851	21.6	84
210	Multiparametric high-resolution imaging of native proteins by force-distance curve-based AFM. *Nature Protocols*, **2014**, 9, 1113-30	18.8	83
209	Human Tau isoforms assemble into ribbon-like fibrils that display polymorphic structure and stability. *Journal of Biological Chemistry*, **2010**, 285, 27302-27313	5.4	83

208	Vertebrate membrane proteins: structure, function, and insights from biophysical approaches. *Pharmacological Reviews*, **2008**, 60, 43-78	22.5	83
207	Folding and assembly of proteorhodopsin. *Journal of Molecular Biology*, **2008**, 376, 35-41	6.5	82
206	Fourteen protomers compose the oligomer III of the proton-rotor in spinach chloroplast ATP synthase. *Journal of Molecular Biology*, **2003**, 333, 337-44	6.5	82
205	Imaging and quantifying chemical and physical properties of native proteins at molecular resolution by force-volume AFM. *Angewandte Chemie - International Edition*, **2011**, 50, 12103-8	16.4	80
204	Atomic force microscopy: a forceful way with single molecules. *Current Biology*, **1999**, 9, R133-6	6.3	80
203	Ligand-specific interactions modulate kinetic, energetic, and mechanical properties of the human ? adrenergic receptor. *Structure*, **2012**, 20, 1391-402	5.2	79
202	Imaging the electrostatic potential of transmembrane channels: atomic probe microscopy of OmpF porin. *Biophysical Journal*, **2002**, 82, 1667-76	2.9	79
201	Mechanism of allosteric regulation of ?adrenergic receptor by cholesterol. *ELife*, **2016**, 5,	8.9	78
200	Locating ligand binding and activation of a single antiporter. *EMBO Reports*, **2005**, 6, 668-74	6.5	77
199	Rheology of the Active Cell Cortex in Mitosis. *Biophysical Journal*, **2016**, 111, 589-600	2.9	76
198	Structural changes in native membrane proteins monitored at subnanometer resolution with the atomic force microscope: a review. *Journal of Structural Biology*, **1997**, 119, 149-57	3.4	74
197	Probing the energy landscape of the membrane protein bacteriorhodopsin. *Structure*, **2004**, 12, 871-9	5.2	74
196	Fibronectin-bound ?? integrins sense load and signal to reinforce adhesion in less than a second. *Nature Materials*, **2017**, 16, 1262-1270	27	72
195	Galectin-3 regulates integrin alpha2beta1-mediated adhesion to collagen-I and -IV. *Journal of Biological Chemistry*, **2008**, 283, 32264-72	5.4	72
194	Contributions of galectin-3 and -9 to epithelial cell adhesion analyzed by single cell force spectroscopy. *Journal of Biological Chemistry*, **2007**, 282, 29375-83	5.4	72
193	Engineering rotor ring stoichiometries in the ATP synthase. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, E1599-608	11.5	70
192	The central plug in the reconstituted undecameric c cylinder of a bacterial ATP synthase consists of phospholipids. *FEBS Letters*, **2001**, 505, 353-6	3.8	69
191	?-class integrins exert dual roles on ?? integrins to strengthen adhesion to fibronectin. *Nature Communications*, **2017**, 8, 14348	17.4	68

190	Observing membrane protein diffusion at subnanometer resolution. *Journal of Molecular Biology*, **2003**, 327, 925-30	6.5	67
189	A bond for a lifetime: employing membrane nanotubes from living cells to determine receptor-ligand kinetics. *Angewandte Chemie - International Edition*, **2008**, 47, 9775-7	16.4	64
188	Aminosulfonate modulated pH-induced conformational changes in connexin26 hemichannels. *Journal of Biological Chemistry*, **2007**, 282, 8895-904	5.4	64
187	Single-cell force spectroscopy, an emerging tool to quantify cell adhesion to biomaterials. *Tissue Engineering - Part B: Reviews*, **2014**, 20, 40-55	7.9	63
186	Force nanoscopy of living cells. *Current Biology*, **2011**, 21, R212-6	6.3	63
185	Studying integrin-mediated cell adhesion at the single-molecule level using AFM force spectroscopy. *Scienceş STKE: Signal Transduction Knowledge Environment*, **2007**, 2007, pl5		63
184	Sampling the conformational space of membrane protein surfaces with the AFM. *European Biophysics Journal*, **2002**, 31, 172-8	1.9	63
183	ATP synthase: constrained stoichiometry of the transmembrane rotor. *FEBS Letters*, **2001**, 504, 219-22	3.8	63
182	Inertial picobalance reveals fast mass fluctuations in mammalian cells. *Nature*, **2017**, 550, 500-505	50.4	62
181	Surface analysis of the photosystem I complex by electron and atomic force microscopy. *Journal of Molecular Biology*, **1998**, 283, 83-94	6.5	62
180	New frontiers in atomic force microscopy: analyzing interactions from single-molecules to cells. *Current Opinion in Biotechnology*, **2009**, 20, 4-13	11.4	61
179	Detecting molecular interactions that stabilize native bovine rhodopsin. *Journal of Molecular Biology*, **2006**, 358, 255-69	6.5	61
178	Identification and structure of a putative Ca2+-binding domain at the C terminus of AQP1. *Journal of Molecular Biology*, **2002**, 318, 1381-94	6.5	61
177	Single Proteins Observed by Atomic Force Microscopy. *Single Molecules*, **2001**, 2, 59-67		60
176	Directly Observing the Lipid-Dependent Self-Assembly and Pore-Forming Mechanism of the Cytolytic Toxin Listeriolysin O. *Nano Letters*, **2015**, 15, 6965-73	11.5	59
175	The c13 ring from a thermoalkaliphilic ATP synthase reveals an extended diameter due to a special structural region. *Journal of Molecular Biology*, **2009**, 388, 611-8	6.5	59
174	Creating ultrathin nanoscopic collagen matrices for biological and biotechnological applications. *Small*, **2007**, 3, 956-63	11	59
173	Molecular force modulation spectroscopy revealing the dynamic response of single bacteriorhodopsins. *Biophysical Journal*, **2005**, 88, 1423-31	2.9	57

172	Stages and conformations of the Tau repeat domain during aggregation and its effect on neuronal toxicity. *Journal of Biological Chemistry*, **2014**, 289, 20318-32	5.4	56
171	Determining molecular forces that stabilize human aquaporin-1. *Journal of Structural Biology*, **2003**, 142, 369-78	3.4	56
170	SAS-6 engineering reveals interdependence between cartwheel and microtubules in determining centriole architecture. *Nature Cell Biology*, **2016**, 18, 393-403	23.4	55
169	Charting the surfaces of the purple membrane. *Journal of Structural Biology*, **1999**, 128, 243-9	3.4	55
168	Mechanical Stimulation of Piezo1 Receptors Depends on Extracellular Matrix Proteins and Directionality of Force. *Nano Letters*, **2017**, 17, 2064-2072	11.5	54
167	Mitotic cells contract actomyosin cortex and generate pressure to round against or escape epithelial confinement. *Nature Communications*, **2015**, 6, 8872	17.4	54
166	Mechanical control of mitotic progression in single animal cells. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 11258-63	11.5	53
165	Identifying and quantifying two ligand-binding sites while imaging native human membrane receptors by AFM. *Nature Communications*, **2015**, 6, 8857	17.4	53
164	Stabilizing effect of Zn2+ in native bovine rhodopsin. *Journal of Biological Chemistry*, **2007**, 282, 11377-85	5.4	53
163	Deciphering teneurin domains that facilitate cellular recognition, cell-cell adhesion, and neurite outgrowth using atomic force microscopy-based single-cell force spectroscopy. *Nano Letters*, **2013**, 13, 2937-46	11.5	52
162	Biomolecular imaging using atomic force microscopy. *Trends in Biotechnology*, **2002**, 20, S45-S49	15.1	52
161	YidC assists the stepwise and stochastic folding of membrane proteins. *Nature Chemical Biology*, **2016**, 12, 911-917	11.7	52
160	Wedged AFM-cantilevers for parallel plate cell mechanics. *Methods*, **2013**, 60, 186-94	4.6	51
159	Multiparametric Atomic Force Microscopy Imaging of Biomolecular and Cellular Systems. *Accounts of Chemical Research*, **2017**, 50, 924-931	24.3	50
158	Conformational adaptability of Redbeta during DNA annealing and implications for its structural relationship with Rad52. *Journal of Molecular Biology*, **2009**, 391, 586-98	6.5	50
157	Probing origins of molecular interactions stabilizing the membrane proteins halorhodopsin and bacteriorhodopsin. *Structure*, **2005**, 13, 235-42	5.2	50
156	Membrane perforation by the pore-forming toxin pneumolysin. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 13352-13357	11.5	49
155	Point mutations in membrane proteins reshape energy landscape and populate different unfolding pathways. *Journal of Molecular Biology*, **2008**, 376, 1076-90	6.5	48

154	An intermediate step in the evolution of ATPases: a hybrid F(0)-V(0) rotor in a bacterial Na(+) F(1)F(0) ATP synthase. *FEBS Journal*, **2008**, 275, 1999-2007	5.7	48
153	Transmembrane helices have rough energy surfaces. *Journal of the American Chemical Society*, **2007** , 129, 246-7	16.4	47
152	Action of the Hsp70 chaperone system observed with single proteins. *Nature Communications*, **2015** , 6, 6307	17.4	46
151	pH-induced conformational change of the beta-barrel-forming protein OmpG reconstituted into native E. coli lipids. *Journal of Molecular Biology*, **2010**, 396, 610-6	6.5	46
150	Observing folding pathways and kinetics of a single sodium-proton antiporter from Escherichia coli. *Journal of Molecular Biology*, **2006**, 355, 2-8	6.5	46
149	Nanomechanical properties of proteins and membranes depend on loading rate and electrostatic interactions. *ACS Nano*, **2013**, 7, 2642-50	16.7	45
148	Gating of the MlotiK1 potassium channel involves large rearrangements of the cyclic nucleotide-binding domains. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 20802-7	11.5	45
147	Single-molecule force spectroscopy from nanodiscs: an assay to quantify folding, stability, and interactions of native membrane proteins. *ACS Nano*, **2012**, 6, 961-71	16.7	44
146	Strategies to prepare and characterize native membrane proteins and protein membranes by AFM. *Current Opinion in Colloid and Interface Science*, **2008**, 13, 338-350	7.6	44
145	The fibronectin synergy site re-enforces cell adhesion and mediates a crosstalk between integrin classes. *ELife*, **2017**, 6,	8.9	42
144	Preparation techniques for the observation of native biological systems with the atomic force microscope. *Biosensors and Bioelectronics*, **1997**, 12, 867-877	11.8	41
143	Free energy of membrane protein unfolding derived from single-molecule force measurements. *Biophysical Journal*, **2007**, 93, 930-7	2.9	41
142	Out but not in: the large transmembrane βbarrel protein FhuA unfolds but cannot refold via βhairpins. *Structure*, **2012**, 20, 2185-90	5.2	40
141	Tracking mechanics and volume of globular cells with atomic force microscopy using a constant-height clamp. *Nature Protocols*, **2012**, 7, 143-54	18.8	40
140	Differentiating ligand and inhibitor interactions of a single antiporter. *Journal of Molecular Biology*, **2006**, 362, 925-32	6.5	40
139	Structural evidence for a constant c11 ring stoichiometry in the sodium F-ATP synthase. *FEBS Journal*, **2005**, 272, 5474-83	5.7	40
138	Isolation and characterization of gap junctions from tissue culture cells. *Journal of Molecular Biology*, **2002**, 315, 587-600	6.5	40
137	Combining confocal and atomic force microscopy to quantify single-virus binding to mammalian cell surfaces. *Nature Protocols*, **2017**, 12, 2275-2292	18.8	39

136	Localizing chemical groups while imaging single native proteins by high-resolution atomic force microscopy. *Nano Letters*, **2014**, 14, 2957-64	11.5	39
135	Mechanical properties of bovine rhodopsin and bacteriorhodopsin: possible roles in folding and function. *Langmuir*, **2008**, 24, 1330-7	4	38
134	Imaging and detecting molecular interactions of single transmembrane proteins. *Neurobiology of Aging*, **2006**, 27, 546-61	5.6	38
133	Kinetic, energetic, and mechanical differences between dark-state rhodopsin and opsin. *Structure*, **2013**, 21, 426-37	5.2	37
132	From valleys to ridges: exploring the dynamic energy landscape of single membrane proteins. *ChemPhysChem*, **2008**, 9, 954-66	3.2	37
131	One beta hairpin after the other: exploring mechanical unfolding pathways of the transmembrane beta-barrel protein OmpG. *Angewandte Chemie - International Edition*, **2009**, 48, 8306-8	16.4	36
130	BCR/ABL expression of myeloid progenitors increases beta1-integrin mediated adhesion to stromal cells. *Journal of Molecular Biology*, **2008**, 377, 1082-93	6.5	36
129	Creating nanoscopic collagen matrices using atomic force microscopy. *Microscopy Research and Technique*, **2004**, 64, 435-40	2.8	36
128	Reversible loss of crystallinity on photobleaching purple membrane in the presence of hydroxylamine. *Journal of Molecular Biology*, **2000**, 301, 869-79	6.5	36
127	Products of the ParkinsonRs disease-related glyoxalase DJ-1, D-lactate and glycolate, support mitochondrial membrane potential and neuronal survival. *Biology Open*, **2014**, 3, 777-84	2.2	35
126	Competing interactions stabilize pro- and anti-aggregant conformations of human Tau. *Journal of Biological Chemistry*, **2011**, 286, 20512-24	5.4	35
125	pH-dependent interactions guide the folding and gate the transmembrane pore of the beta-barrel membrane protein OmpG. *Journal of Molecular Biology*, **2010**, 397, 878-82	6.5	34
124	Protein-enriched outer membrane vesicles as a native platform for outer membrane protein studies. *Communications Biology*, **2018**, 1, 23	6.7	33
123	The transmembrane protein KpOmpA anchoring the outer membrane of Klebsiella pneumoniae unfolds and refolds in response to tensile load. *Structure*, **2012**, 20, 121-7	5.2	33
122	Dynamic coupling of ALCAM to the actin cortex strengthens cell adhesion to CD6. *Journal of Cell Science*, **2014**, 127, 1595-606	5.3	32
121	Probing the interactions of carboxy-atractyloside and atractyloside with the yeast mitochondrial ADP/ATP carrier. *Structure*, **2010**, 18, 39-46	5.2	32
120	Stimulated single-cell force spectroscopy to quantify cell adhesion receptor crosstalk. *Proteomics*, **2010**, 10, 1455-62	4.8	32
119	Actin microridges characterized by laser scanning confocal and atomic force microscopy. *FEBS Letters*, **2005**, 579, 2001-8	3.8	32

118	Virus stamping for targeted single-cell infection in vitro and in vivo. *Nature Biotechnology*, **2018**, 36, 81-88	44.5	31
117	Quantitative imaging of the electrostatic field and potential generated by a transmembrane protein pore at subnanometer resolution. *Nano Letters*, **2013**, 13, 5585-93	11.5	31
116	Scanning probe microscopy. *Nature Reviews Methods Primers*, **2021**, 1,		31
115	One βhairpin follows the other: exploring refolding pathways and kinetics of the transmembrane βbarrel protein OmpG. *Angewandte Chemie - International Edition*, **2011**, 50, 7422-4	16.4	30
114	Electron and atomic force microscopy of membrane proteins. *Current Opinion in Structural Biology*, **1997**, 7, 543-9	8.1	30
113	Substrate binding tunes conformational flexibility and kinetic stability of an amino acid antiporter. *Journal of Biological Chemistry*, **2009**, 284, 18651-63	5.4	29
112	Modulation of molecular interactions and function by rhodopsin palmitylation. *Biochemistry*, **2009**, 48, 4294-304	3.2	29
111	Genome-scale single-cell mechanical phenotyping reveals disease-related genes involved in mitotic rounding. *Nature Communications*, **2017**, 8, 1266	17.4	28
110	Substrate-induced changes in the structural properties of LacY. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, E1571-80	11.5	28
109	Transducer binding establishes localized interactions to tune sensory rhodopsin II. *Structure*, **2008**, 16, 1206-13	5.2	28
108	Examining the dynamic energy landscape of an antiporter upon inhibitor binding. *Journal of Molecular Biology*, **2008**, 375, 1258-66	6.5	28
107	An approach to prepare membrane proteins for single-molecule imaging. *Angewandte Chemie - International Edition*, **2006**, 45, 3252-6	16.4	28
106	Observing a lipid-dependent alteration in single lactose permeases. *Structure*, **2015**, 23, 754-61	5.2	27
105	Unraveling the Pore-Forming Steps of Pneumolysin from Streptococcus pneumoniae. *Nano Letters*, **2016**, 16, 7915-7924	11.5	27
104	Molecular Plasticity of the Human Voltage-Dependent Anion Channel Embedded Into a Membrane. *Structure*, **2016**, 24, 585-594	5.2	27
103	TPA primes alpha2beta1 integrins for cell adhesion. *FEBS Letters*, **2008**, 582, 3520-4	3.8	27
102	Optimized reconstitution of membrane proteins into synthetic membranes. *Communications Chemistry*, **2018**, 1,	6.3	26
101	Locating an extracellular K+-dependent interaction site that modulates betaine-binding of the Na+-coupled betaine symporter BetP. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, E890-8	11.5	26

100	Alignment and cell-matrix interactions of human corneal endothelial cells on nanostructured collagen type I matrices **2010**, 51, 6303-10		26
99	High-throughput single-molecule force spectroscopy for membrane proteins. *Nanotechnology*, **2008**, 19, 384014	3.4	26
98	Detecting Ligand-Binding Events and Free Energy Landscape while Imaging Membrane Receptors at Subnanometer Resolution. *Nano Letters*, **2017**, 17, 3261-3269	11.5	24
97	Single-molecule force spectroscopy of membrane proteins from membranes freely spanning across nanoscopic pores. *Nano Letters*, **2015**, 15, 3624-33	11.5	24
96	Fully automated single-molecule force spectroscopy for screening applications. *Nanotechnology*, **2008**, 19, 384020	3.4	24
95	A novel pattern recognition algorithm to classify membrane protein unfolding pathways with high-throughput single-molecule force spectroscopy. *Bioinformatics*, **2007**, 23, e231-6	7.2	24
94	Atomic Force Microscopy-Based Force Spectroscopy and Multiparametric Imaging of Biomolecular and Cellular Systems. *Chemical Reviews*, **2021**, 121, 11701-11725	68.1	24
93	Monitoring Backbone Hydrogen-Bond Formation in □Barrel Membrane Protein Folding. *Angewandte Chemie - International Edition*, **2016**, 55, 5952-5	16.4	24
92	Single-molecule force spectroscopy of G-protein-coupled receptors. *Chemical Society Reviews*, **2013**, 42, 7801-15	58.5	23
91	Structural, energetic, and mechanical perturbations in rhodopsin mutant that causes congenital stationary night blindness. *Journal of Biological Chemistry*, **2012**, 287, 21826-35	5.4	22
90	Force probing cell shape changes to molecular resolution. *Trends in Biochemical Sciences*, **2011**, 36, 444-50	10.3	22
89	Biochemistry. Seeing a molecular motor at work. *Science*, **2011**, 333, 704-5	33.3	22
88	Conservation of molecular interactions stabilizing bovine and mouse rhodopsin. *Biochemistry*, **2010**, 49, 10412-20	3.2	22
87	Narrow-band UVB-induced externalization of selected nuclear antigens in keratinocytes: implications for lupus erythematosus pathogenesis. *Photochemistry and Photobiology*, **2009**, 85, 1-7	3.6	22
86	A "force buffer" protecting immunoglobulin titin. *Angewandte Chemie - International Edition*, **2010**, 49, 3528-31	16.4	22
85	Neurons differentiate magnitude and location of mechanical stimuli. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 848-856	11.5	22
84	Insertion and folding pathways of single membrane proteins guided by translocases and insertases. *Science Advances*, **2019**, 5, eaau6824	14.3	21
83	□-integrins are required for mechanotransduction in MDCK epithelial cells. *PLoS ONE*, **2013**, 8, e71485	3.7	21

82	Assessing the structure and function of single biomolecules with scanning transmission electron and atomic force microscopes. *Micron*, **2011**, 42, 186-95	2.3	21
81	Conformations of the rhodopsin third cytoplasmic loop grafted onto bacteriorhodopsin. *Structure*, **2000**, 8, 643-53	5.2	21
80	Scanning tunnelling microscopy observations of biomolecules on layered materials. *Faraday Discussions*, **1992**, 183-97	3.6	21
79	Reversible Cation-Selective Attachment and Self-Assembly of Human Tau on Supported Brain Lipid Membranes. *Nano Letters*, **2018**, 18, 3271-3281	11.5	20
78	Assay for characterizing the recovery of vertebrate cells for adhesion measurements by single-cell force spectroscopy. *FEBS Letters*, **2014**, 588, 3639-48	3.8	20
77	Increasing throughput of AFM-based single cell adhesion measurements through multisubstrate surfaces. *Beilstein Journal of Nanotechnology*, **2015**, 6, 157-66	3	20
76	Surface morphology and mechanical properties of fibroblasts from scleroderma patients. *Journal of Cellular and Molecular Medicine*, **2009**, 13, 1644-1652	5.6	20
75	Imaging in Biologically-Relevant Environments with AFM Using Stiff qPlus Sensors. *Scientific Reports*, **2018**, 8, 9330	4.9	20
74	Fusion Domains Guide the Oriented Insertion of Light-Driven Proton Pumps into Liposomes. *Biophysical Journal*, **2017**, 113, 1181-1186	2.9	19
73	Role of extracellular glutamic acids in the stability and energy landscape of bacteriorhodopsin. *Biophysical Journal*, **2008**, 95, 3407-18	2.9	19
72	Detecting molecular interactions that stabilize, activate and guide ligand-binding of the sodium/proton antiporter MjNhaP1 from Methanococcus jannaschii. *Journal of Structural Biology*, **2007**, 159, 290-301	3.4	19
71	High-Resolution Imaging and Multiparametric Characterization of Native Membranes by Combining Confocal Microscopy and an Atomic Force Microscopy-Based Toolbox. *ACS Nano*, **2017**, 11, 8292-8301	16.7	18
70	Peptide transporter DtpA has two alternate conformations, one of which is promoted by inhibitor binding. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, E3978-86	11.5	17
69	Direct measurement of single-molecule visco-elasticity in atomic force microscope force-extension experiments. *European Biophysics Journal*, **2006**, 35, 287-92	1.9	17
68	Nonlinear mechanics of lamin filaments and the meshwork topology build an emergent nuclear lamina. *Nature Communications*, **2020**, 11, 6205	17.4	17
67	Structural alterations provoked by narrow-band ultraviolet B in immortalized keratinocytes: assessment by atomic force microscopy. *Experimental Dermatology*, **2007**, 16, 1007-15	4	16
66	Observing the growth of individual actin filaments in cell extracts by time-lapse atomic force microscopy. *FEBS Letters*, **2003**, 551, 25-8	3.8	16
65	Engineering a Chemical Switch into the Light-driven Proton Pump Proteorhodopsin by Cysteine Mutagenesis and Thiol Modification. *Angewandte Chemie - International Edition*, **2016**, 55, 8846-9	16.4	16

64	The biomechanical properties of an epithelial tissue determine the location of its vasculature. *Nature Communications*, **2016**, 7, 13560	17.4	16
63	Single-Molecule Force Spectroscopy of Transmembrane □Barrel Proteins. *Annual Review of Analytical Chemistry*, **2018**, 11, 375-395	12.5	15
62	Kin discrimination in social yeast is mediated by cell surface receptors of the Flo11 adhesin family. *ELife*, **2020**, 9,	8.9	15
61	Pull-and-Paste of Single Transmembrane Proteins. *Nano Letters*, **2017**, 17, 4478-4488	11.5	14
60	Mechanistic explanation of different unfolding behaviors observed for transmembrane and soluble □barrel proteins. *Structure*, **2013**, 21, 1317-24	5.2	14
59	Dual energy landscape: the functional state of the □barrel outer membrane protein G molds its unfolding energy landscape. *Proteomics*, **2010**, 10, 4151-62	4.8	14
58	Observing fibrillar assemblies on scrapie-infected cells. *Pflugers Archiv European Journal of Physiology*, **2008**, 456, 83-93	4.6	14
57	In PC3 prostate cancer cells ephrin receptors crosstalk to □-integrins to strengthen adhesion to collagen type I. *Scientific Reports*, **2015**, 5, 8206	4.9	13
56	Conformations, flexibility, and interactions observed on individual membrane proteins by atomic force microscopy. *Methods in Cell Biology*, **2002**, 68, 257-99	1.8	13
55	Maltoporin LamB Unfolds □Hairpins along Mechanical Stress-Dependent Unfolding Pathways. *Structure*, **2017**, 25, 1139-1144.e2	5.2	12
54	How To Minimize Artifacts in Atomistic Simulations of Membrane Proteins, Whose Crystal Structure Is Heavily Engineered: □Adrenergic Receptor in the Spotlight. *Journal of Chemical Theory and Computation*, **2015**, 11, 3432-45	6.4	12
53	Seeing and sensing single G protein-coupled receptors by atomic force microscopy. *Current Opinion in Cell Biology*, **2019**, 57, 25-32	9	12
52	Dynamic single-molecule force spectroscopy of rhodopsin in native membranes. *Methods in Molecular Biology*, **2015**, 1271, 173-85	1.4	11
51	Force spectroscopy of single cells using atomic force microscopy. *Nature Reviews Methods Primers*, **2021**, 1,		11
50	Membrane proteins scrambling through a folding landscape. *Science*, **2017**, 355, 907-908	33.3	10
49	Protease-activated receptor signalling initiates □ntegrin-mediated adhesion in non-haematopoietic cells. *Nature Materials*, **2020**, 19, 218-226	27	10
48	Digital force-feedback for protein unfolding experiments using atomic force microscopy. *Nanotechnology*, **2007**, 18, 044022	3.4	10
47	Out and in: simplifying membrane protein studies by AFM. *Biophysical Journal*, **2006**, 91, 3133-4	2.9	10

46	Studying collagen self-assembly by time-lapse high-resolution atomic force microscopy. *Methods in Molecular Biology*, **2011**, 736, 97-107	1.4	10
45	One β-Hairpin Follows the Other: Exploring Refolding Pathways and Kinetics of the Transmembrane β-Barrel Protein OmpG. *Angewandte Chemie*, **2011**, 123, 7560-7562	3.6	9
44	Spatiotemporally Controlled Myosin Relocalization and Internal Pressure Generate Sibling Cell Size Asymmetry. *IScience*, **2019**, 13, 9-19	6.1	8
43	Retinal pigment epithelium cell alignment on nanostructured collagen matrices. *Cells Tissues Organs*, **2011**, 194, 443-56	2.1	8
42	□-Class integrin binding to fibronectin is solely mediated by RGD and unaffected by an RGE mutation. *Journal of Cell Biology*, **2020**, 219,	7.3	8
41	Oscillatory Switches of Dorso-Ventral Polarity in Cells Confined between Two Surfaces. *Biophysical Journal*, **2018**, 115, 150-162	2.9	8
40	Engineering and Assembly of Protein Modules into Functional Molecular Systems. *Chimia*, **2016**, 70, 398-401	1.3	7
39	Structural Properties of the Human Protease-Activated Receptor 1 Changing by a Strong Antagonist. *Structure*, **2018**, 26, 829-838.e4	5.2	6
38	POTRA Domains, Extracellular Lid, and Membrane Composition Modulate the Conformational Stability of the β-Barrel Assembly Factor BamA. *Structure*, **2018**, 26, 987-996.e3	5.2	6
37	High-Resolution Imaging of Maltoporin LamB while Quantifying the Free-Energy Landscape and Asymmetry of Sugar Binding. *Nano Letters*, **2019**, 19, 6442-6453	11.5	6
36	Conformational Plasticity of Human Protease-Activated Receptor 1 upon Antagonist- and Agonist-Binding. *Structure*, **2019**, 27, 1517-1526.e3	5.2	6
35	Magnetically guided virus stamping for the targeted infection of single cells or groups of cells. *Nature Protocols*, **2019**, 14, 3205-3219	18.8	6
34	Analysis assistant for single-molecule force spectroscopy data on membrane proteins--MPTV. *Bioinformatics*, **2006**, 22, 1796-9	7.2	6
33	Proton gradients from light-harvesting E. coli control DNA assemblies for synthetic cells. *Nature Communications*, **2021**, 12, 3967	17.4	6
32	Investigating fibrillar aggregates of Tau protein by atomic force microscopy. *Methods in Molecular Biology*, **2012**, 849, 169-83	1.4	5
31	Quantifying cellular adhesion to covalently immobilized extracellular matrix proteins by single-cell force spectroscopy. *Methods in Molecular Biology*, **2013**, 1046, 19-37	1.4	5
30	Atomic force microscopy as a multifunctional molecular toolbox in nanobiotechnology **2009**, 269-277		5
29	Complex stability of single proteins explored by forced unfolding experiments. *Biophysical Journal*, **2005**, 88, L37-9	2.9	5

28	Use of molybdenum telluride as a substrate for the imaging of biological molecules during scanning tunnelling microscopy. *Analyst, The*, **1994**, 119, 727-34	5	4
27	Rheology of rounded mammalian cells over continuous high-frequencies. *Nature Communications*, **2021**, 12, 2922	17.4	4
26	Monitoring Backbone Hydrogen-Bond Formation in βBarrel Membrane Protein Folding. *Angewandte Chemie*, **2016**, 128, 6056-6059	3.6	4
25	High-resolution imaging of 2D outer membrane protein F crystals by atomic force microscopy. *Methods in Molecular Biology*, **2013**, 955, 461-74	1.4	3
24	Molekulare Abbildung und Quantifizierung chemischer und physikalischer Eigenschaften nativer Proteine mit Kraftvolumen-Rasterkraftmikroskopie. *Angewandte Chemie*, **2011**, 123, 12309-12314	3.6	3
23	Monitoring the binding and insertion of a single transmembrane protein by an insertase. *Nature Communications*, **2021**, 12, 7082	17.4	3
22	Atomic Force Microscopy to Study Mechanics of Living Mitotic Mammalian Cells. *Japanese Journal of Applied Physics*, **2011**, 50, 08LA01	1.4	3
21	Engineering a Chemical Switch into the Light-driven Proton Pump Proteorhodopsin by Cysteine Mutagenesis and Thiol Modification. *Angewandte Chemie*, **2016**, 128, 8992-8995	3.6	3
20	Force generation: ATP-powered proteasomes pull the rope. *Current Biology*, **2011**, 21, R427-30	6.3	2
19	Microbial Surfaces Investigated Using Atomic Force Microscopy. *Methods in Microbiology*, **2004**, 34, 163-197	2.8	2
18	Conformational Changes, Flexibilities and Intramolecular Forces Observed on Individual Proteins Using AFM. *Single Molecules*, **2000**, 1, 115-118		2
17	Monitoring the antibiotic darobactin modulating the βbarrel assembly factor BamA. *Structure*, **2021**,	5.2	2
16	Atomic Force Microscopy to Study Mechanics of Living Mitotic Mammalian Cells. *Japanese Journal of Applied Physics*, **2011**, 50, 08LA01	1.4	1
15	Characterizing folding, structure, molecular interactions and ligand gated activation of single sodium/proton antiporters. *Naunyn-Schmiedeberg's Archives of Pharmacology*, **2006**, 372, 400-12	3.4	1
14	An Approach To Prepare Membrane Proteins for Single-Molecule Imaging. *Angewandte Chemie*, **2006**, 118, 3330-3334	3.6	1
13	GenEPi: Piezo1-based fluorescent reporter for visualizing mechanical stimuli with high spatiotemporal resolution		1
12	Reply to Desikan et al.: Micelle formation among various mechanisms of toxin pore formation. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 5109-5110	11.5	1
11	Cells Stiffen for Cytokines. *Cell Chemical Biology*, **2018**, 25, 495-496	8.2	1

10	Lipids and Phosphorylation Conjointly Modulate Complex Formation of Adrenergic Receptor and arrestin2.. *Frontiers in Cell and Developmental Biology*, **2021**, 9, 807913	5.7	1
9	Gasdermin-A3 pore formation propagates along variable pathways.. *Nature Communications*, **2022**, 13, 2609	17.4	1
8	Biofunctionalization of Surfaces Using Ultrathin Nanoscopic Collagen Matrices **2012**, 427-441		
7	A Novel Preparation Method for High Resolution AFM Introduced With 2d-Streptavidin Crystals Grown on a Biotinlipid Monolayer. *Microscopy and Microanalysis*, **1998**, 4, 312-313	0.5	
6	Structure, Flexibility and Intramolecular Forces Observed on Individual Proteins Using Afm. *Microscopy and Microanalysis*, **1999**, 5, 996-997	0.5	
5	A Structure-Based Analysis of Single Molecule Force Spectroscopy (SMFS) Data for Bacteriorhodopsin and Four Mutants. *Lecture Notes in Computer Science*, **2006**, 162-172	0.9	
4	Single-Molecule Microscopy and Force Spectroscopy of Membrane Proteins. *Springer Series in Biophysics*, **2008**, 279-311		
3	Atomic Force Microscopy Provides Molecular Details of Cell Surfaces. *Principles and Practice*, **1998**, 1-31		
2	Probing Single Membrane Proteins by Atomic Force Microscopy **2009**, 449-485		
1	Rasterkraftmikroskopie **2022**, 601-610		