Cheng Zhu

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

178 papers	10,445 citations	54 h-index	98 g-index
192 ext. papers	12,044 ext. citations	7.5 avg, IF	6.26 L-index

#	Paper	IF	Citations
178	Immune-mediated alopecias and their mechanobiological aspects. *Cells and Development*, **2022**, 203793		
177	PD-1 suppresses TCR-CD8 cooperativity during T-cell antigen recognition. *Nature Communications*, **2021**, 12, 2746	16.9	7
176	Neuromechanobiology: An Expanding Field Driven by the Force of Greater Focus. *Advanced Healthcare Materials*, **2021**, 10, e2100102	9.4	2
175	Inhibitory affinity modulation of FcγRIIA ligand binding by glycosphingolipids by inside-out signaling. *Cell Reports*, **2021**, 35, 109142	10.3	1
174	Distinct roles of ICOS and CD40L in human T-B cell adhesion and antibody production. *Cellular Immunology*, **2021**, 368, 104420	4.2	1
173	A Generalized Gaussian Process Model for Computer Experiments With Binary Time Series. *Journal of the American Statistical Association*, **2020**, 115, 945-956	2.6	5
172	Calibration for Computer Experiments With Binary Responses and Application to Cell Adhesion Study. *Journal of the American Statistical Association*, **2020**, 115, 1664-1674	2.6	1
171	Mechanotransduction in T Cell Development, Differentiation and Function. *Cells*, **2020**, 9,	7.6	10
170	From cellular to molecular mechanobiology. *APL Bioengineering*, **2020**, 4, 010902	6.4	1
169	Mechanochemical coupling of formin-induced actin interaction at the level of single molecular complex. *Biomechanics and Modeling in Mechanobiology*, **2020**, 19, 1509-1521	3.7	2
168	Single-molecule investigations of T-cell activation. *Current Opinion in Biomedical Engineering*, **2019**, 12, 102-110	4.2	3
167	Mechanosensing through immunoreceptors. *Nature Immunology*, **2019**, 20, 1269-1278	18.5	51
166	Dynamic bonds and their roles in mechanosensing. *Current Opinion in Chemical Biology*, **2019**, 53, 88-97	9.4	16
165	Mechano-regulation of Peptide-MHC Class I Conformations Determines TCR Antigen Recognition. *Molecular Cell*, **2019**, 73, 1015-1027.e7	17	49
164	Force-history dependence and cyclic mechanical reinforcement of actin filaments at the single molecular level. *Journal of Cell Science*, **2019**, 132,	5.1	9
163	Biophysical basis underlying dynamic Lck activation visualized by ZapLck FRET biosensor. *Science Advances*, **2019**, 5, eaau2001	13.9	14
162	Domain-specific mechanical modulation of VWF-ADAMTS13 interaction. *Molecular Biology of the Cell*, **2019**, 30, 1920-1929	3.4	7

161	An integrin intermediate affinity state mediates biomechanical platelet aggregation. *Nature Materials*, **2019**, 18, 760-769	26.5	46
160	Fast Force Loading Disrupts Molecular Binding Stability in Human and Mouse Cell Adhesions. *MCB Molecular and Cellular Biomechanics*, **2019**, 16, 211-223	0.1	5
159	Compression force sensing regulates integrin adhesive function on diabetic platelets. *Nature Communications*, **2018**, 9, 1087	16.9	24
158	Shear-induced integrin signaling in platelet phosphatidylserine exposure, microvesicle release, and coagulation. *Blood*, **2018**, 132, 533-543	2.1	30
157	Platelet receptor-mediated mechanosensing and thrombosis **2018**, 285-304		
156	Programmable Multivalent DNA-Origami Tension Probes for Reporting Cellular Traction Forces. *Nano Letters*, **2018**, 18, 4803-4811	11.3	60
155	A TCR mechanotransduction signaling loop induces negative selection in the thymus. *Nature Immunology*, **2018**, 19, 1379-1390	18.5	62
154	Cis interaction between sialylated FcRIIA and the domain of Mac-1 limits antibody-mediated neutrophil recruitment. *Nature Communications*, **2018**, 9, 5058	16.9	29
153	Apolipoprotein A-IV binds b integrin and inhibits thrombosis. *Nature Communications*, **2018**, 9, 3608	16.9	36
152	Force regulated conformational change of integrin *Matrix Biology*, **2017**, 60-61, 70-85	11	39
151	Benchmarks of Biomembrane Force Probe Spring Constant Models. *Biophysical Journal*, **2017**, 113, 2842-2845	2.9	7
150	and kinetic analyses of programmed cell death-1 (PD-1) receptor, programmed cell death ligands, and B7-1 protein interaction network. *Journal of Biological Chemistry*, **2017**, 292, 6799-6809	5	10
149	The integrin PSI domain has an endogenous thiol isomerase function and is a novel target for antiplatelet therapy. *Blood*, **2017**, 129, 1840-1854	2.1	36
148	Notch-Jagged complex structure implicates a catch bond in tuning ligand sensitivity. *Science*, **2017**, 355, 1320-1324	32.2	153
147	Two-Dimensional Analysis of Cross-Junctional Molecular Interaction by Force Probes. *Methods in Molecular Biology*, **2017**, 1584, 231-258	1.4	12
146	L-selectin mechanochemistry restricts neutrophil priming in vivo. *Nature Communications*, **2017**, 8, 15196	16.9	22
145	Glycan Bound to the Selectin Low Affinity State Engages Glu-88 to Stabilize the High Affinity State under Force. *Journal of Biological Chemistry*, **2017**, 292, 2510-2518	5	20
144	Receptor-mediated cell mechanosensing. *Molecular Biology of the Cell*, **2017**, 28, 3134-3155	3.4	93

143	Dual Biomembrane Force Probe enables single-cell mechanical analysis of signal crosstalk between multiple molecular species. *Scientific Reports*, **2017**, 7, 14185	4.7	25
142	Neutrophil FcRIIA promotes IgG-mediated glomerular neutrophil capture via Abl/Src kinases. *Journal of Clinical Investigation*, **2017**, 127, 3810-3826	15.3	28
141	Local Cellular and Cytokine Cues in the Spleen Regulate In Situ T Cell Receptor Affinity, Function, and Fate of CD8 T Cells. *Immunity*, **2016**, 45, 988-998	31.4	18
140	Effects of anchor structure and glycosylation of Fc receptor III on ligand binding affinity. *Molecular Biology of the Cell*, **2016**, 27, 3449-3458	3.4	9
139	Regulation of actin catch-slip bonds with a RhoA-formin module. *Scientific Reports*, **2016**, 6, 35058	4.7	10
138	Constitutive Lck Activity Drives Sensitivity Differences between CD8+ Memory T Cell Subsets. *Journal of Immunology*, **2016**, 197, 644-54	5.2	14
137	A model for cyclic mechanical reinforcement. *Scientific Reports*, **2016**, 6, 35954	4.7	5
136	Mechanical regulation of a molecular clutch defines force transmission and transduction in response to matrix rigidity. *Nature Cell Biology*, **2016**, 18, 540-8	22.7	358
135	Molecular mechanisms of mechanotransduction in integrin-mediated cell-matrix adhesion. *Experimental Cell Research*, **2016**, 349, 85-94	4	48
134	Flow-Enhanced Stability of Rolling Adhesion through E-Selectin. *Biophysical Journal*, **2016**, 111, 686-699	0.5	14
133	Imaging Spatiotemporal Activities of ZAP-70 in Live T Cells Using a FRET-Based Biosensor. *Annals of Biomedical Engineering*, **2016**, 44, 3510-3521	4.6	11
132	Hotspot autoimmune T cell receptor binding underlies pathogen and insulin peptide cross-reactivity. *Journal of Clinical Investigation*, **2016**, 126, 2191-204	15.3	76
131	Cooperative unfolding of distinctive mechanoreceptor domains transduces force into signals. *ELife*, **2016**, 5,	8.6	42
130	Transport regulation of two-dimensional receptor-ligand association. *Biophysical Journal*, **2015**, 108, 1773-1784	0.5	12
129	Regulatory and T Effector Cells Have Overlapping Low to High Ranges in TCR Affinities for Self during Demyelinating Disease. *Journal of Immunology*, **2015**, 195, 4162-70	5.2	12
128	Von Willebrand factor-A1 domain binds platelet glycoprotein Ib in multiple states with distinctive force-dependent dissociation kinetics. *Thrombosis Research*, **2015**, 136, 606-12	7.3	35
127	A Lupus-Associated Mac-1 Variant Has Defects in Integrin Allostery and Interaction with Ligands under Force. *Cell Reports*, **2015**, 10, 1655-1664	10.3	41
126	Force-Regulated In Situ TCR-Peptide-Bound MHC Class II Kinetics Determine Functions of CD4+ T Cells. *Journal of Immunology*, **2015**, 195, 3557-64	5.2	67

125	Force-Induced Unfolding of Leucine-Rich Repeats of Glycoprotein Ibα Strengthens Ligand Interaction. *Biophysical Journal*, **2015**, 109, 1781-4	0.5	22
124	The cellular environment regulates in situ kinetics of T-cell receptor interaction with peptide major histocompatibility complex. *European Journal of Immunology*, **2015**, 45, 2099-110	5.8	23
123	Pre-TCR ligand binding impacts thymocyte development before αβTCR expression. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 8373-8	11.1	39
122	Molecular force spectroscopy on cells. *Annual Review of Physical Chemistry*, **2015**, 66, 427-51	15.3	46
121	Fluorescence Biomembrane Force Probe: Concurrent Quantitation of Receptor-ligand Kinetics and Binding-induced Intracellular Signaling on a Single Cell. *Journal of Visualized Experiments*, **2015**, e52975	1.5	29
120	Force-Induced Cooperative Unfolding of Two Distinctive Domains in a Single Gpibalpha Molecule. *Blood*, **2015**, 126, 3449-3449	2.1	
119	Identification and Characterization of Integrin alphaIIbbeta3 Intermediate Affinity State Induced By Gpibalpha Mechanotransduction. *Blood*, **2015**, 126, 237-237	2.1	
118	Ligand-engaged TCR is triggered by Lck not associated with CD8 coreceptor. *Nature Communications*, **2014**, 5, 5624	16.9	39
117	Dynamic catch of a Thy-1-α5β1+syndecan-4 trimolecular complex. *Nature Communications*, **2014**, 5, 4886	16.9	66
116	2D TCR-pMHC-CD8 kinetics determines T-cell responses in a self-antigen-specific TCR system. *European Journal of Immunology*, **2014**, 44, 239-50	5.8	43
115	Mechanochemitry: a molecular biomechanics view of mechanosensing. *Annals of Biomedical Engineering*, **2014**, 42, 388-404	4.6	23
114	Accumulation of dynamic catch bonds between TCR and agonist peptide-MHC triggers T cell signaling. *Cell*, **2014**, 157, 357-368	54.5	321
113	DNA-based digital tension probes reveal integrin forces during early cell adhesion. *Nature Communications*, **2014**, 5, 5167	16.9	163
112	A generalizable, tunable microfluidic platform for delivering fast temporally varying chemical signals to probe single-cell response dynamics. *Analytical Chemistry*, **2014**, 86, 10138-47	7.7	32
111	Accumulation of serial forces on TCR and CD8 frequently applied by agonist antigenic peptides embedded in MHC molecules triggers calcium in T cells. *Journal of Immunology*, **2014**, 193, 68-76	5.2	47
110	Dynamic control of β1 integrin adhesion by the plexinD1-sema3E axis. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 379-84	11.1	53
109	Cyclic Mechanical Reinforcement of Integrin–Ligand Interactions. *Molecular Cell*, **2013**, 49, 1176	17	2
108	Mechanical regulation of T-cell functions. *Immunological Reviews*, **2013**, 256, 160-76	11	63

107	Cyclic mechanical reinforcement of integrin-ligand interactions. *Molecular Cell*, **2013**, 49, 1060-8	17	103
106	Insights from in situ analysis of TCR-pMHC recognition: response of an interaction network. *Immunological Reviews*, **2013**, 251, 49-64	11	51
105	Actin depolymerization under force is governed by lysine 113:glutamic acid 195-mediated catch-slip bonds. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 5022-7	11.1	56
104	The N-terminal flanking region of the A1 domain regulates the force-dependent binding of von Willebrand factor to platelet glycoprotein Ib *Journal of Biological Chemistry*, **2013**, 288, 32289-32301	5	61
103	An HMM-based algorithm for evaluating rates of receptor-ligand binding kinetics from thermal fluctuation data. *Bioinformatics*, **2013**, 29, 1511-8	6.8	1
102	Hidden Markov Models With Applications in Cell Adhesion Experiments. *Journal of the American Statistical Association*, **2013**, 108, 1469-1479	2.6	2
101	Loss of the F-BAR protein CIP4 reduces platelet production by impairing membrane-cytoskeleton remodeling. *Blood*, **2013**, 122, 1695-706	2.1	29
100	P-selectin glycoprotein ligand-1 forms dimeric interactions with E-selectin but monomeric interactions with L-selectin on cell surfaces. *PLoS ONE*, **2013**, 8, e57202	3.6	16
99	T cell triggering: insights from 2D kinetics analysis of molecular interactions. *Physical Biology*, **2012**, 9, 045005	2.9	31
98	Tyrosine replacement of PSGL-1 reduces association kinetics with P- and L-selectin on the cell membrane. *Biophysical Journal*, **2012**, 103, 777-85	0.5	9
97	Insights into T cell recognition of antigen: significance of two-dimensional kinetic parameters. *Frontiers in Immunology*, **2012**, 3, 86	8.2	23
96	T cell antigen recognition at the cell membrane. *Molecular Immunology*, **2012**, 52, 155-64	4.2	26
95	Observing force-regulated conformational changes and ligand dissociation from a single integrin on cells. *Journal of Cell Biology*, **2012**, 199, 497-512	7.1	105
94	Low 2-dimensional CD4 T cell receptor affinity for myelin sets in motion delayed response kinetics. *PLoS ONE*, **2012**, 7, e32562	3.6	27
93	Catch Bonds of Integrin/Ligand Interactions **2012**, 77-96		1
92	The Study of GPIb-VWF Mediated Early-Stage Platelet Activation Triggering On a Single Cell. *Blood*, **2012**, 120, 1069-1069	2.1	
91	Adhesion frequency assay for in situ kinetics analysis of cross-junctional molecular interactions at the cell-cell interface. *Journal of Visualized Experiments*, **2011**, e3519	1.5	8
90	T cell receptor signaling is limited by docking geometry to peptide-major histocompatibility complex. *Immunity*, **2011**, 35, 681-93	31.4	181

89	Conformational Transition of Glycoprotein Ibα Mutants in Flow Molecular Dynamics Simulation. *Cellular and Molecular Bioengineering*, **2011**, 4, 495-504	3.7	2
88	A FRET-Based Biosensor for Imaging SYK Activities in Living Cells. *Cellular and Molecular Bioengineering*, **2011**, 4, 670-677	3.7	11
87	Two-stage cooperative T cell receptor-peptide major histocompatibility complex-CD8 trimolecular interactions amplify antigen discrimination. *Immunity*, **2011**, 34, 13-23	31.4	127
86	Regulation of catch bonds by rate of force application. *Journal of Biological Chemistry*, **2011**, 286, 32749-61	5	41
85	High prevalence of low affinity peptide-MHC II tetramer-negative effectors during polyclonal CD4+ T cell responses. *Journal of Experimental Medicine*, **2011**, 208, 81-90	16.2	119
84	Molecular stiffness of selectins. *Journal of Biological Chemistry*, **2011**, 286, 9567-76	5	18
83	Molecular dynamics simulations of forced unbending of integrin αvβ3. *PLoS Computational Biology*, **2011**, 7, e1001086	4.8	47
82	Structural basis and kinetics of force-induced conformational changes of an αA domain-containing integrin. *PLoS ONE*, **2011**, 6, e27946	3.6	16
81	A model for single-substrate trimolecular enzymatic kinetics. *Biophysical Journal*, **2010**, 98, 1957-65	0.5	1
80	Triphasic force dependence of E-selectin/ligand dissociation governs cell rolling under flow. *Biophysical Journal*, **2010**, 99, 1166-74	0.5	38
79	The mechanism of VWF-mediated platelet GPIbalpha binding. *Biophysical Journal*, **2010**, 99, 1192-201	0.5	27
78	Rolling cell adhesion. *Annual Review of Cell and Developmental Biology*, **2010**, 26, 363-96	12.1	238
77	Membrane-based actuation for high-speed single molecule force spectroscopy studies using AFM. *European Biophysics Journal*, **2010**, 39, 1219-27	1.9	12
76	Molecular Biomechanics: The Molecular Basis of How Forces Regulate Cellular Function. *Cellular and Molecular Bioengineering*, **2010**, 3, 91-105	3.7	28
75	Simulated Thermal Unfolding of the von Willebrand Factor A Domains. *Cellular and Molecular Bioengineering*, **2010**, 3, 117-127	3.7	3
74	The kinetics of two-dimensional TCR and pMHC interactions determine T-cell responsiveness. *Nature*, **2010**, 464, 932-6	47.5	354
73	Forcing switch from short- to intermediate- and long-lived states of the alphaA domain generates LFA-1/ICAM-1 catch bonds. *Journal of Biological Chemistry*, **2010**, 285, 35967-78	5	120
72	Force-induced cleavage of single VWFA1A2A3 tridomains by ADAMTS-13. *Blood*, **2010**, 115, 370-8	2.1	87

71	Dynamics of the interaction of human IgG subtype immune complexes with cells expressing R and H allelic forms of a low-affinity Fc gamma receptor CD32A. *Journal of Immunology*, **2009**, 183, 8216-24	5.2	38
70	Chapter 7 Biophysical Regulation of Selectin□igand Interactions Under Flow. *Current Topics in Membranes*, **2009**, 64, 195-220	2.2	1
69	Demonstration of catch bonds between an integrin and its ligand. *Journal of Cell Biology*, **2009**, 185, 1275-84	7.8	476
68	Molecular Dynamics Simulated Unfolding of von Willebrand Factor A Domains by Force. *Cellular and Molecular Bioengineering*, **2009**, 2, 75-86	3.7	17
67	Bending rigidities of cell surface molecules P-selectin and PSGL-1. *Journal of Biomechanics*, **2009**, 42, 303-7	2.8	6
66	Changes in thermodynamic stability of von Willebrand factor differentially affect the force-dependent binding to platelet GPIbalpha. *Biophysical Journal*, **2009**, 97, 618-27	0.5	31
65	Single-Molecule Recognition: Extracting Information from Individual Binding Events and Their Correlation **2009**, 591-610		
64	Measuring Receptor-Ligand Binding Kinetics on Cell Surfaces: From Adhesion Frequency to Thermal Fluctuation Methods. *Cellular and Molecular Bioengineering*, **2008**, 1, 276-288	3.7	62
63	Integrin dependence of Calu-1 cell motility on endothelial extracellular matrix proteins. *Annals of Biomedical Engineering*, **2008**, 36, 970-9	4.6	1
62	Mechanisms for flow-enhanced cell adhesion. *Annals of Biomedical Engineering*, **2008**, 36, 604-21	4.6	87
61	The differential effect of endothelial cell factors on in vitro motility of malignant and non-malignant cells. *Annals of Biomedical Engineering*, **2008**, 36, 958-69	4.6	16
60	Measuring diffusion and binding kinetics by contact area FRAP. *Biophysical Journal*, **2008**, 95, 920-30	0.5	68
59	A nonsynonymous functional variant in integrin-alpha(M) (encoded by ITGAM) is associated with systemic lupus erythematosus. *Nature Genetics*, **2008**, 40, 152-4	35.2	248
58	A coupled diffusion-kinetics model for analysis of contact-area FRAP experiment. *Biophysical Journal*, **2008**, 95, 910-9	0.5	27
57	Monitoring receptor-ligand interactions between surfaces by thermal fluctuations. *Biophysical Journal*, **2008**, 94, 694-701	0.5	89
56	Flow-induced structural transition in the beta-switch region of glycoprotein Ib. *Biophysical Journal*, **2008**, 95, 1303-13	0.5	28
55	Two stage cadherin kinetics require multiple extracellular domains but not the cytoplasmic region. *Journal of Biological Chemistry*, **2008**, 283, 1848-56	5	45
54	Replacing a lectin domain residue in L-selectin enhances binding to P-selectin glycoprotein ligand-1 but not to 6-sulfo-sialyl Lewis x. *Journal of Biological Chemistry*, **2008**, 283, 11493-500	5	45

53	MHC variant peptide-mediated anergy of encephalitogenic T cells requires SHP-1. *Journal of Immunology*, **2008**, 181, 6843-9	5.2	20
52	Binary Time Series Modeling with Application to Adhesion Frequency Experiments. *Journal of the American Statistical Association*, **2008**, 103, 1248-1259	2.6	7
51	Flow induces loop-to-beta-hairpin transition on the beta-switch of platelet glycoprotein Ib alpha. *Proceedings of the National Academy of Sciences of the United States of America*, **2008**, 105, 13847-52	11.1	31
50	Platelet glycoprotein Ibalpha forms catch bonds with human WT vWF but not with type 2B von Willebrand disease vWF. *Journal of Clinical Investigation*, **2008**, 118, 3195-207	15.3	225
49	Single-Molecule Measurements of Force-Induced Cleavage of VWF A1A2A3-Tridomain by ADAMTS13. *Blood*, **2008**, 112, 3936-3936	2.1	
48	Memory in receptor-ligand-mediated cell adhesion. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 18037-42	11.1	43
47	Kinetics of MHC-CD8 interaction at the T cell membrane. *Journal of Immunology*, **2007**, 179, 7653-62	5.2	76
46	The Sliding□Rebinding Mechanism for Catch Bonds*. *Japanese Journal of Applied Physics*, **2007**, 46, 5528-5535	1.3	
45	Affinity and kinetic analysis of Fcgamma receptor IIIa (CD16a) binding to IgG ligands. *Journal of Biological Chemistry*, **2007**, 282, 6210-21	5	44
44	Transport governs flow-enhanced cell tethering through L-selectin at threshold shear. *Biophysical Journal*, **2007**, 92, 330-42	0.5	65
43	A structure-based sliding-rebinding mechanism for catch bonds. *Biophysical Journal*, **2007**, 92, 1471-85	0.5	96
42	Glycoprotein Ib□Forms Catch Bonds with von Willebrand Factor A1 Domain but Not with Mutant A1 Domains Exhibiting Properties of Type 2B von Willebrand Disease.. *Blood*, **2007**, 110, 293-293	2.1	
41	Sliding-Rebinding Mechanism Governs Glycoprotein Ib/von Willebrand Factor Catch Bonds.. *Blood*, **2007**, 110, 3723-3723	2.1	
40	Quantifying the effects of contact duration, loading rate, and approach velocity on P-selectin□PSGL-1 interactions using AFM. *Polymer*, **2006**, 47, 2539-2547	3.8	24
39	Flow-enhanced adhesion regulated by a selectin interdomain hinge. *Journal of Cell Biology*, **2006**, 174, 1107-17	7.1	124
38	T cells like a firm molecular handshake. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 4335-6	11.1	14
37	Measuring molecular elasticity by atomic force microscope cantilever fluctuations. *Biophysical Journal*, **2006**, 90, 681-92	0.5	60
36	Probabilistic modeling of rosette formation. *Biophysical Journal*, **2006**, 91, 352-63	0.5	7

35	Two-dimensional kinetics regulation of alphaLbeta2-ICAM-1 interaction by conformational changes of the alphaL-inserted domain. *Journal of Biological Chemistry*, **2005**, 280, 42207-18	5	60
34	Thermo-mechanical responses of a surface-coupled AFM cantilever. *Journal of Biomechanical Engineering*, **2005**, 127, 1208-15	2.1	9
33	Force history dependence of receptor-ligand dissociation. *Biophysical Journal*, **2005**, 88, 1458-66	0.5	106
32	Catch bonds: physical models, structural bases, biological function and rheological relevance. *Biorheology*, **2005**, 42, 443-62	1.6	54
31	Catch bonds: physical models and biological functions. *MCB Molecular and Cellular Biomechanics*, **2005**, 2, 91-104	0.1	23
30	Catch bonds govern adhesion through L-selectin at threshold shear. *Journal of Cell Biology*, **2004**, 166, 913-23	7.1	177
29	Low force decelerates L-selectin dissociation from P-selectin glycoprotein ligand-1 and endoglycan. *Journal of Biological Chemistry*, **2004**, 279, 2291-8	5	193
28	Quantifying the effects of molecular orientation and length on two-dimensional receptor-ligand binding kinetics. *Journal of Biological Chemistry*, **2004**, 279, 44915-23	5	88
27	Mechanical switching and coupling between two dissociation pathways in a P-selectin adhesion bond. *Proceedings of the National Academy of Sciences of the United States of America*, **2004**, 101, 11281-6	11.1	264
26	Direct observation of catch bonds involving cell-adhesion molecules. *Nature*, **2003**, 423, 190-3	47.5	749
25	Recombinant CD16A-Ig forms a homodimer and cross-blocks the ligand binding functions of neutrophil and monocyte Fcgamma receptors. *Molecular Immunology*, **2002**, 38, 527-38	4.2	6
24	Measuring receptor/ligand interaction at the single-bond level: experimental and interpretative issues. *Annals of Biomedical Engineering*, **2002**, 30, 305-14	4.6	72
23	Distinct molecular and cellular contributions to stabilizing selectin-mediated rolling under flow. *Journal of Cell Biology*, **2002**, 158, 787-99	7.1	132
22	Quantifying the impact of membrane microtopology on effective two-dimensional affinity. *Journal of Biological Chemistry*, **2001**, 276, 13283-8	5	53
21	Kinetic measurements of cell surface E-selectin/carbohydrate ligand interactions. *Annals of Biomedical Engineering*, **2001**, 29, 935-46	4.6	53
20	Identification of self through two-dimensional chemistry and synapses. *Annual Review of Cell and Developmental Biology*, **2001**, 17, 133-57	12.1	119
19	Diffusion of microspheres in shear flow near a wall: use to measure binding rates between attached molecules. *Biophysical Journal*, **2001**, 81, 25-42	0.5	61
18	Kinetics and mechanics of cell adhesion. *Journal of Biomechanics*, **2000**, 33, 23-33	2.8	143

17	Cell-specific, activation-dependent regulation of neutrophil CD32A ligand-binding function. *Blood*, **2000**, 95, 1069-1077	2.1	55
16	The membrane anchor influences ligand binding two-dimensional kinetic rates and three-dimensional affinity of FcgammaRIII (CD16). *Journal of Biological Chemistry*, **2000**, 275, 10235-46	5	48
15	Modeling concurrent binding of multiple molecular species in cell adhesion. *Biophysical Journal*, **2000**, 79, 1850-7	0.5	27
14	Concurrent binding to multiple ligands: kinetic rates of CD16b for membrane-bound IgG1 and IgG2. *Biophysical Journal*, **2000**, 79, 1858-66	0.5	33
13	Concurrent and independent binding of Fcgamma receptors IIa and IIIb to surface-bound IgG. *Biophysical Journal*, **2000**, 79, 1867-75	0.5	43
12	Cell mechanics: mechanical response, cell adhesion, and molecular deformation. *Annual Review of Biomedical Engineering*, **2000**, 2, 189-226	11.6	301
11	Analysis of competition binding between soluble and membrane-bound ligands for cell surface receptors. *Biophysical Journal*, **1999**, 77, 3394-406	0.5	24
10	Probabilistic modeling of shear-induced formation and breakage of doublets cross-linked by receptor-ligand bonds. *Biophysical Journal*, **1999**, 76, 1112-28	0.5	54
9	A modified Boyden chamber assay for tumor cell transendothelial migration in vitro. *Clinical and Experimental Metastasis*, **1999**, 17, 423-9	4.6	55
8	A Centrifugation Method for Measurement of Two-Dimensional Binding Characteristics of Receptor-Ligand Interaction. *Drugs and the Pharmaceutical Sciences*, **1999**, 261-298		1
7	Measuring two-dimensional receptor-ligand binding kinetics by micropipette. *Biophysical Journal*, **1998**, 75, 1553-72	0.5	346
6	Determining force dependence of two-dimensional receptor-ligand binding affinity by centrifugation. *Biophysical Journal*, **1998**, 74, 492-513	0.5	129
5	Ligand binding and phagocytosis by CD16 (Fc gamma receptor III) isoforms. Phagocytic signaling by associated zeta and gamma subunits in Chinese hamster ovary cells. *Journal of Biological Chemistry*, **1995**, 270, 25762-70	5	69
4	A thermodynamic and biomechanical theory of cell adhesion. Part I: General formulism. *Journal of Theoretical Biology*, **1991**, 150, 27-50	2.3	11
3	Rheological aspects of red blood cell aggregation. *Biorheology*, **1990**, 27, 309-25	1.6	21
2	Surface roughness and molecular orientation strongly influence the forward but not the reverse rates of cell-bound receptor-ligand binding		1
1	Signaling mechanisms of the platelet glycoprotein Ib-IX complex. *Platelets*,1-10	3.5	0