Cheng Zhu

List of Publications by Year in Descending Order

178 papers	10,604 citations	54 h-index	99 g-index
192 ext. papers	12,248 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		0
177	Inhibitory affinity modulation of FcRIIA ligand binding by glycosphingolipids by inside-out signaling. *Cell Reports*, **2021**, 35, 109142	10.6	1
176	PD-1 suppresses TCR-CD8 cooperativity during T-cell antigen recognition. *Nature Communications*, **2021**, 12, 2746	17.4	8
175	Neuromechanobiology: An Expanding Field Driven by the Force of Greater Focus. *Advanced Healthcare Materials*, **2021**, 10, e2100102	10.1	2
174	Distinct roles of ICOS and CD40L in human T-B cell adhesion and antibody production. *Cellular Immunology*, **2021**, 368, 104420	4.4	2
173	Mechanotransduction in T Cell Development, Differentiation and Function. *Cells*, **2020**, 9,	7.9	11
172	From cellular to molecular mechanobiology. *APL Bioengineering*, **2020**, 4, 010902	6.6	0
171	Mechanochemical coupling of formin-induced actin interaction at the level of single molecular complex. *Biomechanics and Modeling in Mechanobiology*, **2020**, 19, 1509-1521	3.8	2
170	Calibration for Computer Experiments With Binary Responses and Application to Cell Adhesion Study. *Journal of the American Statistical Association*, **2020**, 115, 1664-1674	2.8	4
169	A Generalized Gaussian Process Model for Computer Experiments With Binary Time Series. *Journal of the American Statistical Association*, **2020**, 115, 945-956	2.8	6
168	Mechanosensing through immunoreceptors. *Nature Immunology*, **2019**, 20, 1269-1278	19.1	60
167	Dynamic bonds and their roles in mechanosensing. *Current Opinion in Chemical Biology*, **2019**, 53, 88-97	9.7	16
166	Mechano-regulation of Peptide-MHC Class I Conformations Determines TCR Antigen Recognition. *Molecular Cell*, **2019**, 73, 1015-1027.e7	17.6	52
165	Force-history dependence and cyclic mechanical reinforcement of actin filaments at the single molecular level. *Journal of Cell Science*, **2019**, 132,	5.3	10
164	Biophysical basis underlying dynamic Lck activation visualized by ZapLck FRET biosensor. *Science Advances*, **2019**, 5, eaau2001	14.3	15
163	Domain-specific mechanical modulation of VWF-ADAMTS13 interaction. *Molecular Biology of the Cell*, **2019**, 30, 1920-1929	3.5	7
162	An integrin intermediate affinity state mediates biomechanical platelet aggregation. *Nature Materials*, **2019**, 18, 760-769	27	48

161	Single-molecule investigations of T-cell activation. *Current Opinion in Biomedical Engineering*, **2019**, 12, 102-110	4.4	3
160	Fast Force Loading Disrupts Molecular Binding Stability in Human and Mouse Cell Adhesions. *MCB Molecular and Cellular Biomechanics*, **2019**, 16, 211-223	1.2	6
159	Compression force sensing regulates integrin αIIbβ3 adhesive function on diabetic platelets. *Nature Communications*, **2018**, 9, 1087	17.4	24
158	Platelet receptor-mediated mechanosensing and thrombosis **2018**, 285-304		
157	Programmable Multivalent DNA-Origami Tension Probes for Reporting Cellular Traction Forces. *Nano Letters*, **2018**, 18, 4803-4811	11.5	62
156	A TCR mechanotransduction signaling loop induces negative selection in the thymus. *Nature Immunology*, **2018**, 19, 1379-1390	19.1	64
155	Cis interaction between sialylated FcγRIIA and the αI-domain of Mac-1 limits antibody-mediated neutrophil recruitment. *Nature Communications*, **2018**, 9, 5058	17.4	31
154	Apolipoprotein A-IV binds αIIbβ3 integrin and inhibits thrombosis. *Nature Communications*, **2018**, 9, 3608	17.4	38
153	Shear-induced integrin signaling in platelet phosphatidylserine exposure, microvesicle release, and coagulation. *Blood*, **2018**, 132, 533-543	2.2	30
152	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	5.4	10
151	The integrin PSI domain has an endogenous thiol isomerase function and is a novel target for antiplatelet therapy. *Blood*, **2017**, 129, 1840-1854	2.2	39
150	Notch-Jagged complex structure implicates a catch bond in tuning ligand sensitivity. *Science*, **2017**, 355, 1320-1324	33.3	156
149	Two-Dimensional Analysis of Cross-Junctional Molecular Interaction by Force Probes. *Methods in Molecular Biology*, **2017**, 1584, 231-258	1.4	12
148	L-selectin mechanochemistry restricts neutrophil priming in vivo. *Nature Communications*, **2017**, 8, 15196	17.4	23
147	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	5.4	20
146	Receptor-mediated cell mechanosensing. *Molecular Biology of the Cell*, **2017**, 28, 3134-3155	3.5	98
145	Dual Biomembrane Force Probe enables single-cell mechanical analysis of signal crosstalk between multiple molecular species. *Scientific Reports*, **2017**, 7, 14185	4.9	25
144	Force regulated conformational change of integrin αI. *Matrix Biology*, **2017**, 60-61, 70-85	11.4	40

143	Benchmarks of Biomembrane Force Probe Spring Constant Models. *Biophysical Journal*, **2017**, 113, 2842-2845	2.9	7
142	Neutrophil FcγRIIA promotes IgG-mediated glomerular neutrophil capture via Abl/Src kinases. *Journal of Clinical Investigation*, **2017**, 127, 3810-3826	15.9	31
141	Flow-Enhanced Stability of Rolling Adhesion through E-Selectin. *Biophysical Journal*, **2016**, 111, 686-699	2.9	15
140	Imaging Spatiotemporal Activities of ZAP-70 in Live T Cells Using a FRET-Based Biosensor. *Annals of Biomedical Engineering*, **2016**, 44, 3510-3521	4.7	11
139	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	32.3	19
138	Effects of anchor structure and glycosylation of FcγReceptor III on ligand binding affinity. *Molecular Biology of the Cell*, **2016**, 27, 3449-3458	3.5	9
137	Regulation of actin catch-slip bonds with a RhoA-formin module. *Scientific Reports*, **2016**, 6, 35058	4.9	10
136	Constitutive Lck Activity Drives Sensitivity Differences between CD8+ Memory T Cell Subsets. *Journal of Immunology*, **2016**, 197, 644-54	5.3	14
135	Hotspot autoimmune T cell receptor binding underlies pathogen and insulin peptide cross-reactivity. *Journal of Clinical Investigation*, **2016**, 126, 2191-204	15.9	77
134	Cooperative unfolding of distinctive mechanoreceptor domains transduces force into signals. *ELife*, **2016**, 5,	8.9	48
133	A model for cyclic mechanical reinforcement. *Scientific Reports*, **2016**, 6, 35954	4.9	5
132	Mechanical regulation of a molecular clutch defines force transmission and transduction in response to matrix rigidity. *Nature Cell Biology*, **2016**, 18, 540-8	23.4	371
131	Molecular mechanisms of mechanotransduction in integrin-mediated cell-matrix adhesion. *Experimental Cell Research*, **2016**, 349, 85-94	4.2	49
130	Transport regulation of two-dimensional receptor-ligand association. *Biophysical Journal*, **2015**, 108, 1773-1784	2.9	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	5.3	12
128	Von Willebrand factor-A1 domain binds platelet glycoprotein Ibα in multiple states with distinctive force-dependent dissociation kinetics. *Thrombosis Research*, **2015**, 136, 606-12	8.2	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	10.6	44
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	5.3	68

125	Force-Induced Unfolding of Leucine-Rich Repeats of Glycoprotein Ib Strengthens Ligand Interaction. *Biophysical Journal*, **2015**, 109, 1781-4	2.9	23
124	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	1.6	29
123	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	6.1	24
122	Pre-TCR ligand binding impacts thymocyte development before TCR expression. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 8373-8	11.5	41
121	Molecular force spectroscopy on cells. *Annual Review of Physical Chemistry*, **2015**, 66, 427-51	15.7	47
120	Force-Induced Cooperative Unfolding of Two Distinctive Domains in a Single Gpibalpha Molecule. *Blood*, **2015**, 126, 3449-3449	2.2	
119	Identification and Characterization of Integrin alphaIIbbeta3 Intermediate Affinity State Induced By Gpibalpha Mechanotransduction. *Blood*, **2015**, 126, 237-237	2.2	
118	Mechanochemitry: a molecular biomechanics view of mechanosensing. *Annals of Biomedical Engineering*, **2014**, 42, 388-404	4.7	23
117	Accumulation of dynamic catch bonds between TCR and agonist peptide-MHC triggers T cell signaling. *Cell*, **2014**, 157, 357-368	56.2	327
116	DNA-based digital tension probes reveal integrin forces during early cell adhesion. *Nature Communications*, **2014**, 5, 5167	17.4	169
115	A generalizable, tunable microfluidic platform for delivering fast temporally varying chemical signals to probe single-cell response dynamics. *Analytical Chemistry*, **2014**, 86, 10138-47	7.8	32
114	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	5.3	48
113	Dynamic control of 1 integrin adhesion by the plexinD1-sema3E axis. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 379-84	11.5	53
112	Ligand-engaged TCR is triggered by Lck not associated with CD8 coreceptor. *Nature Communications*, **2014**, 5, 5624	17.4	39
111	Dynamic catch of a Thy-1-51+syndecan-4 trimolecular complex. *Nature Communications*, **2014**, 5, 4886	17.4	67
110	2D TCR-pMHC-CD8 kinetics determines T-cell responses in a self-antigen-specific TCR system. *European Journal of Immunology*, **2014**, 44, 239-50	6.1	44
109	Cyclic Mechanical Reinforcement of Integrin Ligand Interactions. *Molecular Cell*, **2013**, 49, 1176	17.6	2
108	Mechanical regulation of T-cell functions. *Immunological Reviews*, **2013**, 256, 160-76	11.3	63

107	Cyclic mechanical reinforcement of integrin-ligand interactions. *Molecular Cell*, **2013**, 49, 1060-8	17.6	104
106	Insights from in situ analysis of TCR-pMHC recognition: response of an interaction network. *Immunological Reviews*, **2013**, 251, 49-64	11.3	52
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	11.5	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	5.4	61
103	An HMM-based algorithm for evaluating rates of receptor-ligand binding kinetics from thermal fluctuation data. *Bioinformatics*, **2013**, 29, 1511-8	7.2	1
102	Hidden Markov Models With Applications in Cell Adhesion Experiments. *Journal of the American Statistical Association*, **2013**, 108, 1469-1479	2.8	3
101	Loss of the F-BAR protein CIP4 reduces platelet production by impairing membrane-cytoskeleton remodeling. *Blood*, **2013**, 122, 1695-706	2.2	31
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	3.7	16
99	T cell antigen recognition at the cell membrane. *Molecular Immunology*, **2012**, 52, 155-64	4.3	26
98	T cell triggering: insights from 2D kinetics analysis of molecular interactions. *Physical Biology*, **2012**, 9, 045005	3	31
97	Tyrosine replacement of PSGL-1 reduces association kinetics with P- and L-selectin on the cell membrane. *Biophysical Journal*, **2012**, 103, 777-85	2.9	10
96	Insights into T cell recognition of antigen: significance of two-dimensional kinetic parameters. *Frontiers in Immunology*, **2012**, 3, 86	8.4	23
95	Observing force-regulated conformational changes and ligand dissociation from a single integrin on cells. *Journal of Cell Biology*, **2012**, 199, 497-512	7.3	106
94	Low 2-dimensional CD4 T cell receptor affinity for myelin sets in motion delayed response kinetics. *PLoS ONE*, **2012**, 7, e32562	3.7	28
93	The Study of GPIb-VWF Mediated Early-Stage Platelet Activation Triggering On a Single Cell. *Blood*, **2012**, 120, 1069-1069	2.2	
92	Catch Bonds of Integrin/Ligand Interactions **2012**, 77-96		1
91	Structural basis and kinetics of force-induced conformational changes of an A domain-containing integrin. *PLoS ONE*, **2011**, 6, e27946	3.7	17
90	Adhesion frequency assay for in situ kinetics analysis of cross-junctional molecular interactions at the cell-cell interface. *Journal of Visualized Experiments*, **2011**, e3519	1.6	9

89	T cell receptor signaling is limited by docking geometry to peptide-major histocompatibility complex. *Immunity*, **2011**, 35, 681-93	32.3	182
88	Conformational Transition of Glycoprotein Ib Mutants in Flow Molecular Dynamics Simulation. *Cellular and Molecular Bioengineering*, **2011**, 4, 495-504	3.9	2
87	A FRET-Based Biosensor for Imaging SYK Activities in Living Cells. *Cellular and Molecular Bioengineering*, **2011**, 4, 670-677	3.9	12
86	Two-stage cooperative T cell receptor-peptide major histocompatibility complex-CD8 trimolecular interactions amplify antigen discrimination. *Immunity*, **2011**, 34, 13-23	32.3	129
85	Regulation of catch bonds by rate of force application. *Journal of Biological Chemistry*, **2011**, 286, 32749-61	5.4	41
84	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	16.6	122
83	Molecular stiffness of selectins. *Journal of Biological Chemistry*, **2011**, 286, 9567-76	5.4	18
82	Molecular dynamics simulations of forced unbending of integrin (v) *PLoS Computational Biology* , **2011**, 7, e1001086	5	47
81	The kinetics of two-dimensional TCR and pMHC interactions determine T-cell responsiveness. *Nature*, **2010**, 464, 932-6	50.4	356
80	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	5.4	123
79	A model for single-substrate trimolecular enzymatic kinetics. *Biophysical Journal*, **2010**, 98, 1957-65	2.9	2
78	Triphasic force dependence of E-selectin/ligand dissociation governs cell rolling under flow. *Biophysical Journal*, **2010**, 99, 1166-74	2.9	38
77	The mechanism of VWF-mediated platelet GPIbalpha binding. *Biophysical Journal*, **2010**, 99, 1192-201	2.9	27
76	Rolling cell adhesion. *Annual Review of Cell and Developmental Biology*, **2010**, 26, 363-96	12.6	243
75	Force-induced cleavage of single VWFA1A2A3 tridomains by ADAMTS-13. *Blood*, **2010**, 115, 370-8	2.2	89
74	Membrane-based actuation for high-speed single molecule force spectroscopy studies using AFM. *European Biophysics Journal*, **2010**, 39, 1219-27	1.9	12
73	Molecular Biomechanics: The Molecular Basis of How Forces Regulate Cellular Function. *Cellular and Molecular Bioengineering*, **2010**, 3, 91-105	3.9	27
72	Simulated Thermal Unfolding of the von Willebrand Factor A Domains. *Cellular and Molecular Bioengineering*, **2010**, 3, 117-127	3.9	3

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	5.3	37
70	Chapter 7 Biophysical Regulation of Selectin–Ligand 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	7.3	479
68	Molecular Dynamics Simulated Unfolding of von Willebrand Factor A Domains by Force. *Cellular and Molecular Bioengineering*, **2009**, 2, 75-86	3.9	17
67	Bending rigidities of cell surface molecules P-selectin and PSGL-1. *Journal of Biomechanics*, **2009**, 42, 303-7	2.9	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	2.9	31
65	Single-Molecule Recognition: Extracting Information from Individual Binding Events and Their Correlation **2009**, 591-610		
64	A nonsynonymous functional variant in integrin-alpha(M) (encoded by ITGAM) is associated with systemic lupus erythematosus. *Nature Genetics*, **2008**, 40, 152-4	36.3	247
63	A coupled diffusion-kinetics model for analysis of contact-area FRAP experiment. *Biophysical Journal*, **2008**, 95, 910-9	2.9	28
62	Monitoring receptor-ligand interactions between surfaces by thermal fluctuations. *Biophysical Journal*, **2008**, 94, 694-701	2.9	89
61	Flow-induced structural transition in the beta-switch region of glycoprotein Ib. *Biophysical Journal*, **2008**, 95, 1303-13	2.9	28
60	Two stage cadherin kinetics require multiple extracellular domains but not the cytoplasmic region. *Journal of Biological Chemistry*, **2008**, 283, 1848-56	5.4	45
59	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	5.4	45
58	MHC variant peptide-mediated anergy of encephalitogenic T cells requires SHP-1. *Journal of Immunology*, **2008**, 181, 6843-9	5.3	20
57	Binary Time Series Modeling with Application to Adhesion Frequency Experiments. *Journal of the American Statistical Association*, **2008**, 103, 1248-1259	2.8	8
56	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	11.5	30
55	Measuring Receptor-Ligand Binding Kinetics on Cell Surfaces: From Adhesion Frequency to Thermal Fluctuation Methods. *Cellular and Molecular Bioengineering*, **2008**, 1, 276-288	3.9	64
54	Integrin dependence of Calu-1 cell motility on endothelial extracellular matrix proteins. *Annals of Biomedical Engineering*, **2008**, 36, 970-9	4.7	1

53	Mechanisms for flow-enhanced cell adhesion. *Annals of Biomedical Engineering*, **2008**, 36, 604-21	4.7	87
52	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	4.7	16
51	Measuring diffusion and binding kinetics by contact area FRAP. *Biophysical Journal*, **2008**, 95, 920-30	2.9	68
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	15.9	226
49	Single-Molecule Measurements of Force-Induced Cleavage of VWF A1A2A3-Tridomain by ADAMTS13. *Blood*, **2008**, 112, 3936-3936	2.2	
48	Transport governs flow-enhanced cell tethering through L-selectin at threshold shear. *Biophysical Journal*, **2007**, 92, 330-42	2.9	66
47	A structure-based sliding-rebinding mechanism for catch bonds. *Biophysical Journal*, **2007**, 92, 1471-85	2.9	96
46	Memory in receptor-ligand-mediated cell adhesion. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 18037-42	11.5	44
45	Kinetics of MHC-CD8 interaction at the T cell membrane. *Journal of Immunology*, **2007**, 179, 7653-62	5.3	76
44	The Sliding-Rebinding Mechanism for Catch Bonds*. *Japanese Journal of Applied Physics*, **2007**, 46, 5528-5535	1.4	
43	Affinity and kinetic analysis of Fcgamma receptor IIIa (CD16a) binding to IgG ligands. *Journal of Biological Chemistry*, **2007**, 282, 6210-21	5.4	44
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	2.2	
41	Sliding-Rebinding Mechanism Governs Glycoprotein Ib/von Willebrand Factor Catch Bonds.. *Blood*, **2007**, 110, 3723-3723	2.2	
40	Flow-enhanced adhesion regulated by a selectin interdomain hinge. *Journal of Cell Biology*, **2006**, 174, 1107-17	7.3	123
39	T cells like a firm molecular handshake. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 4335-6	11.5	14
38	Measuring molecular elasticity by atomic force microscope cantilever fluctuations. *Biophysical Journal*, **2006**, 90, 681-92	2.9	61
37	Probabilistic modeling of rosette formation. *Biophysical Journal*, **2006**, 91, 352-63	2.9	8
36	Quantifying the effects of contact duration, loading rate, and approach velocity on P-selectin-PSGL-1 interactions using AFM. *Polymer*, **2006**, 47, 2539-2547	3.9	24

35	Thermo-mechanical responses of a surface-coupled AFM cantilever. *Journal of Biomechanical Engineering*, **2005**, 127, 1208-15	2.1	9
34	Force history dependence of receptor-ligand dissociation. *Biophysical Journal*, **2005**, 88, 1458-66	2.9	106
33	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	5.4	61
32	Catch bonds: physical models, structural bases, biological function and rheological relevance. *Biorheology*, **2005**, 42, 443-62	1.7	54
31	Catch bonds: physical models and biological functions. *MCB Molecular and Cellular Biomechanics*, **2005**, 2, 91-104	1.2	23
30	Catch bonds govern adhesion through L-selectin at threshold shear. *Journal of Cell Biology*, **2004**, 166, 913-23	7.3	177
29	Low force decelerates L-selectin dissociation from P-selectin glycoprotein ligand-1 and endoglycan. *Journal of Biological Chemistry*, **2004**, 279, 2291-8	5.4	195
28	Quantifying the effects of molecular orientation and length on two-dimensional receptor-ligand binding kinetics. *Journal of Biological Chemistry*, **2004**, 279, 44915-23	5.4	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	11.5	266
26	Direct observation of catch bonds involving cell-adhesion molecules. *Nature*, **2003**, 423, 190-3	50.4	757
25	Measuring receptor/ligand interaction at the single-bond level: experimental and interpretative issues. *Annals of Biomedical Engineering*, **2002**, 30, 305-14	4.7	73
24	Distinct molecular and cellular contributions to stabilizing selectin-mediated rolling under flow. *Journal of Cell Biology*, **2002**, 158, 787-99	7.3	132
23	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	4.3	7
22	Quantifying the impact of membrane microtopology on effective two-dimensional affinity. *Journal of Biological Chemistry*, **2001**, 276, 13283-8	5.4	53
21	Kinetic measurements of cell surface E-selectin/carbohydrate ligand interactions. *Annals of Biomedical Engineering*, **2001**, 29, 935-46	4.7	53
20	Identification of self through two-dimensional chemistry and synapses. *Annual Review of Cell and Developmental Biology*, **2001**, 17, 133-57	12.6	118
19	Diffusion of microspheres in shear flow near a wall: use to measure binding rates between attached molecules. *Biophysical Journal*, **2001**, 81, 25-42	2.9	61
18	Kinetics and mechanics of cell adhesion. *Journal of Biomechanics*, **2000**, 33, 23-33	2.9	148

17	Cell-specific, activation-dependent regulation of neutrophil CD32A ligand-binding function. *Blood*, **2000**, 95, 1069-1077	2.2	56
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	5.4	49
15	Modeling concurrent binding of multiple molecular species in cell adhesion. *Biophysical Journal*, **2000**, 79, 1850-7	2.9	27
14	Concurrent binding to multiple ligands: kinetic rates of CD16b for membrane-bound IgG1 and IgG2. *Biophysical Journal*, **2000**, 79, 1858-66	2.9	33
13	Concurrent and independent binding of Fcgamma receptors IIa and IIIb to surface-bound IgG. *Biophysical Journal*, **2000**, 79, 1867-75	2.9	44
12	Cell mechanics: mechanical response, cell adhesion, and molecular deformation. *Annual Review of Biomedical Engineering*, **2000**, 2, 189-226	12	306
11	A modified Boyden chamber assay for tumor cell transendothelial migration in vitro. *Clinical and Experimental Metastasis*, **1999**, 17, 423-9	4.7	58
10	Analysis of competition binding between soluble and membrane-bound ligands for cell surface receptors. *Biophysical Journal*, **1999**, 77, 3394-406	2.9	25
9	Probabilistic modeling of shear-induced formation and breakage of doublets cross-linked by receptor-ligand bonds. *Biophysical Journal*, **1999**, 76, 1112-28	2.9	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	2.9	348
6	Determining force dependence of two-dimensional receptor-ligand binding affinity by centrifugation. *Biophysical Journal*, **1998**, 74, 492-513	2.9	130
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	5.4	69
4	A thermodynamic and biomechanical theory of cell adhesion. Part I: General formulism. *Journal of Theoretical Biology*, **1991**, 150, 27-50	2.3	12
3	Rheological aspects of red blood cell aggregation. *Biorheology*, **1990**, 27, 309-25	1.7	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	3.6	0