Gary J Pielak

List of Publications by Year in descending order

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29994 43802 9,472 148 54 91 citations h-index g-index papers 153 153 153 6327 docs citations times ranked citing authors all docs

#	Article	IF	CITATIONS
1	Protection by desiccationâ€ŧolerance proteins probed at the residue level. Protein Science, 2022, 31, 396-406.	3.1	14
2	A Difference between <i>In Vitro</i> and In-Cell Protein Dimer Formation. Biochemistry, 2022, 61, 409-412.	1.2	3
3	Macromolecular Crowding Is More than Hard-Core Repulsions. Annual Review of Biophysics, 2022, 51, 267-300.	4.5	51
4	Desiccationâ€tolerance and globular proteins adsorb similar amounts of water. Protein Science, 2022, 31, e4288.	3.1	2
5	Protein-complex stability in cells and in vitro under crowded conditions. Current Opinion in Structural Biology, 2021, 66, 183-192.	2.6	37
6	<i>Danio rerio</i> Oocytes for Eukaryotic In-Cell NMR. Biochemistry, 2021, 60, 451-459.	1.2	11
7	The intracellular environment affects protein–protein interactions. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	49
8	Buffers, Especially the Good Kind. Biochemistry, 2021, 60, 3436-3440.	1.2	15
9	Water's Variable Role in Protein Stability Uncovered by Liquid-Observed Vapor Exchange NMR. Biochemistry, 2021, 60, 3041-3045.	1.2	11
10	Dynamical spectroscopy and microscopy of proteins in cells. Current Opinion in Structural Biology, 2021, 70, 1-7.	2.6	19
11	Dried Protein Structure Revealed at the Residue Level by Liquid-Observed Vapor Exchange NMR. Biochemistry, 2021, 60, 152-159.	1.2	13
12	Toxicity and Immunogenicity of a Tardigrade Cytosolic Abundant Heat Soluble Protein in Mice. Frontiers in Pharmacology, 2020, 11, 565969.	1.6	9
13	Protein–Peptide Binding Energetics under Crowded Conditions. Journal of Physical Chemistry B, 2020, 124, 9297-9309.	1.2	19
14	Rapid Quantification of Protein-Ligand Binding via 19F NMR Lineshape Analysis. Biophysical Journal, 2020, 118, 2537-2548.	0.2	34
15	Rheostatic Control of Protein Expression Using Tuner Cells. Biochemistry, 2020, 59, 733-735.	1.2	7
16	Protecting Enzymes from Stress-Induced Inactivation. Biochemistry, 2019, 58, 3825-3833.	1.2	37
17	Positively Charged Tags Impede Protein Mobility in Cells as Quantified by ¹⁹ F NMR. Journal of Physical Chemistry B, 2019, 123, 4527-4533.	1.2	28
18	Controlling and quantifying protein concentration in <i>Escherichia coli</i> . Protein Science, 2019, 28, 1307-1311.	3.1	10

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19	Physiologically-Relevant Crowding Effects on the SH3-Son of Sevenless Interaction. Biophysical Journal, 2019, 116, 158a.	0.2	O
20	Jan Hermans (1933â€2018): Redâ€blooded biophysicists study hemoglobin. Proteins: Structure, Function and Bioinformatics, 2019, 87, 171-173.	1.5	0
21	Membraneâ€mediated disorderâ€toâ€order transition of SNAP25 flexible linker facilitates its interaction with syntaxinâ€1 and SNAREâ€complex assembly. FASEB Journal, 2019, 33, 7985-7994.	0.2	8
22	Protecting activity of desiccated enzymes. Protein Science, 2019, 28, 941-951.	3.1	51
23	Chapter 12. Protein Stability and Weak Intracellular Interactions. New Developments in NMR, 2019, , 188-206.	0.1	6
24	Surface Charge Modulates Protein–Protein Interactions in Physiologically Relevant Environments. Biochemistry, 2018, 57, 1681-1684.	1.2	56
25	Quantification of size effect on protein rotational mobility in cells by 19F NMR spectroscopy. Analytical and Bioanalytical Chemistry, 2018, 410, 869-874.	1.9	21
26	Protein shape modulates crowding effects. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 10965-10970.	3.3	72
27	Crowding and Confinement Can Oppositely Affect Protein Stability. ChemPhysChem, 2018, 19, 3350-3355.	1.0	19
28	The Expanding Zoo of In-Cell Protein NMR. Biophysical Journal, 2018, 115, 1628-1629.	0.2	9
29	Osmolytes and Protein–Protein Interactions. Journal of the American Chemical Society, 2018, 140, 7441-7444.	6.6	61
30	Enthalpic stabilization of an SH3 domain by D ₂ O. Protein Science, 2018, 27, 1710-1716.	3.1	22
31	Cosolute and Crowding Effects on a Side-By-Side Protein Dimer. Biochemistry, 2017, 56, 971-976.	1.2	42
32	Magnetic Resonance Spectroscopy as a Tool for Assessing Macromolecular Structure and Function in Living Cells. Annual Review of Analytical Chemistry, 2017, 10, 157-182.	2.8	35
33	Osmotic Shock Induced Protein Destabilization in Living Cells and Its Reversal by Glycine Betaine. Journal of Molecular Biology, 2017, 429, 1155-1161.	2.0	86
34	Quinary interactions with an unfolded state ensemble. Protein Science, 2017, 26, 1698-1703.	3.1	26
35	Cosolutes, Crowding, and Protein Folding Kinetics. Journal of Physical Chemistry B, 2017, 121, 6527-6537.	1.2	49
36	Glycine Betaine Reverses Osmotic Shock Induced Protein Destabilization in Living Cells. Biophysical Journal, 2017, 112, 57a.	0.2	1

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37	Tardigrades Use Intrinsically Disordered Proteins to Survive Desiccation. Molecular Cell, 2017, 65, 975-984.e5.	4.5	302
38	A cell is more than the sum of its (dilute) parts: A brief history of quinary structure. Protein Science, 2017, 26, 403-413.	3.1	111
39	Intrinsically Disordered Proteins and Desiccation Tolerance: Elucidating Functional and Mechanistic Underpinnings of Anhydrobiosis. BioEssays, 2017, 39, 1700119.	1.2	62
40	Large cosolutes, small cosolutes, and dihydrofolate reductase activity. Protein Science, 2017, 26, 2417-2425.	3.1	29
41	Macromolecular and Small Molecular Crowding Have Similar Effects on αâ€Synuclein Structure. ChemPhysChem, 2017, 18, 55-58.	1.0	41
42	Protein Stability in Reverse Micelles. Angewandte Chemie - International Edition, 2016, 55, 3586-3589.	7.2	43
43	Electrostatic Contributions to Protein Quinary Structure. Journal of the American Chemical Society, 2016, 138, 13139-13142.	6.6	72
44	Protein Stability in Reverse Micelles. Angewandte Chemie, 2016, 128, 3650-3653.	1.6	8
45	In-cell thermodynamics and a new role for protein surfaces. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 1725-1730.	3.3	147
46	Roles of structural plasticity in chaperone HdeA activity are revealed by 19F NMR. Chemical Science, 2016, 7, 2222-2228.	3.7	14
47	Intracellular p <scp>H</scp> modulates quinary structure. Protein Science, 2015, 24, 1748-1755.	3.1	48
48	Emergence of life: Physical chemistry changes the paradigm. Biology Direct, 2015, 10, 33.	1.9	31
49	Quinary structure modulates protein stability in cells. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 1739-1742.	3.3	186
50	Hydrogen exchange of disordered proteins in <i>Escherichia coli</i> . Protein Science, 2015, 24, 706-713.	3.1	36
51	Challenge of Mimicking the Influences of the Cellular Environment on RNA Structure by PEG-Induced Macromolecular Crowding. Biochemistry, 2015, 54, 6447-6453.	1.2	56
52	NMR studies of protein folding and binding in cells and cell-like environments. Current Opinion in Structural Biology, 2015, 30, 7-16.	2.6	58
53	An osmolyte mitigates the destabilizing effect of protein crowding. Protein Science, 2014, 23, 1161-1164.	3.1	25
54	Protein Crowder Charge and Protein Stability. Biochemistry, 2014, 53, 1601-1606.	1.2	106

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55	Strategies for Protein NMR in <i>Escherichia coli</i> Biochemistry, 2014, 53, 1971-1981.	1.2	24
56	Residue level quantification of protein stability in living cells. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 11335-11340.	3.3	106
57	Physicochemical Properties of Cells and Their Effects on Intrinsically Disordered Proteins (IDPs). Chemical Reviews, 2014, 114, 6661-6714.	23.0	391
58	Soft interactions and crowding. Biophysical Reviews, 2013, 5, 187-194.	1.5	205
59	The Cellular Environment Stabilizes Adenine Riboswitch RNA Structure. Biochemistry, 2013, 52, 8777-8785.	1.2	104
60	Amide proton exchange of a dynamic loop in cell extracts. Protein Science, 2013, 22, 1313-1319.	3.1	16
61	Impact of reconstituted cytosol on protein stability. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 19342-19347.	3.3	172
62	¹⁹ Fâ€NMR Spectroscopy as a Probe of Cytoplasmic Viscosity and Weak Protein Interactions in Living Cells. Chemistry - A European Journal, 2013, 19, 12705-12710.	1.7	83
63	Membrane proteins, magic-angle spinning, and in-cell NMR. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 4715-4716.	3.3	8
64	Unexpected Effects of Macromolecular Crowding on Protein Stability. Biochemistry, 2012, 51, 9773-9775.	1.2	191
65	Disordered Protein Diffusion under Crowded Conditions. Journal of Physical Chemistry Letters, 2012, 3, 2703-2706.	2.1	53
66	Interaction of \hat{l}_{\pm} -Synuclein and a Cell Penetrating Fusion Peptide with Higher Eukaryotic Cell Membranes Assessed by $\langle \sup 19 \langle \sup F \}$ NMR. Molecular Pharmaceutics, 2012, 9, 1024-1029.	2.3	20
67	Interaction of \hat{l} ±-synuclein with vesicles that mimic mitochondrial membranes. Biochimica Et Biophysica Acta - Biomembranes, 2012, 1818, 512-519.	1.4	85
68	Macromolecular Crowding and Protein Stability. Journal of the American Chemical Society, 2012, 134, 16614-16618.	6.6	289
69	In Situ Structural Characterization of a Recombinant Protein in Native Escherichia coli Membranes with Solid-State Magic-Angle-Spinning NMR. Journal of the American Chemical Society, 2011, 133, 12370-12373.	6.6	83
70	Macromolecular Crowding Fails To Fold a Globular Protein in Cells. Journal of the American Chemical Society, 2011, 133, 8082-8085.	6.6	132
71	Protein Crowding Tunes Protein Stability. Journal of the American Chemical Society, 2011, 133, 7116-7120.	6.6	255
72	An upper limit for macromolecular crowding effects. BMC Biophysics, 2011, 4, 13.	4.4	29

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73	Inâ€eell protein NMR and protein leakage. Proteins: Structure, Function and Bioinformatics, 2011, 79, 347-351.	1.5	63
74	Internal and Global Protein Motion Assessed with a Fusion Construct and In ell NMR Spectroscopy. ChemBioChem, 2011, 12, 390-391.	1.3	42
75	Probing the Micelleâ€Bound Aggregationâ€Prone State of αâ€Synuclein with ¹⁹ F NMR Spectroscopy. ChemBioChem, 2010, 11, 1993-1996.	1.3	20
76	A bioreactor for in-cell protein NMR. Journal of Magnetic Resonance, 2010, 202, 140-146.	1.2	56
77	¹⁹ F NMR studies of αâ€synucleinâ€membrane interactions. Protein Science, 2010, 19, 1686-1691.	3.1	58
78	Crowding and function reunite. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 17457-17458.	3.3	21
79	Effects of Proteins on Protein Diffusion. Journal of the American Chemical Society, 2010, 132, 9392-9397.	6.6	223
80	Volume Exclusion and Soft Interaction Effects on Protein Stability under Crowded Conditions. Biochemistry, 2010, 49, 6984-6991.	1.2	148
81	Protein ¹⁹ F NMR in <i>Escherichia coli Journal of the American Chemical Society, 2010, 132, 321-327.</i>	6.6	196
82	Using NMR-Detected Backbone Amide 1H Exchange to Assess Macromolecular Crowding Effects on Globular-Protein Stability. Methods in Enzymology, 2009, 466, 1-18.	0.4	28
83	Protein Nuclear Magnetic Resonance under Physiological Conditions. Biochemistry, 2009, 48, 226-234.	1.2	75
84	Effects of Recombinant Protein Expression on Green Fluorescent Protein Diffusion in Escherichia coli. Biochemistry, 2009, 48, 5083-5089.	1.2	29
85	Using NMR to Distinguish Viscosity Effects from Nonspecific Protein Binding under Crowded Conditions. Journal of the American Chemical Society, 2009, 131, 1368-1369.	6.6	61
86	Quantifying Green Fluorescent Protein Diffusion in <i>Escherichia coli</i> by Using Continuous Photobleaching with Evanescent Illumination. Journal of Physical Chemistry B, 2009, 113, 4837-4845.	1.2	20
87	Translational and Rotational Diffusion of a Small Globular Protein under Crowded Conditions. Journal of Physical Chemistry B, 2009, 113, 13390-13392.	1.2	82
88	19F NMR Studies of α-Synuclein Conformation and Fibrillation. Biochemistry, 2009, 48, 8578-8584.	1.2	76
89	Solvent-induced collapse of \hat{l}_{\pm} -synuclein and acid-denatured cytochrome c. Protein Science, 2008, 10, 2195-2199.	3.1	169
90	Peroxidative aggregation of α-synuclein requires tyrosines. Protein Science, 2008, 13, 2852-2856.	3.1	20

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91	Differential Dynamical Effects of Macromolecular Crowding on an Intrinsically Disordered Protein and a Globular Protein: Implications for In-Cell NMR Spectroscopy. Journal of the American Chemical Society, 2008, 130, 6310-6311.	6.6	119
92	Residue-Level Interrogation of Macromolecular Crowding Effects on Protein Stability. Journal of the American Chemical Society, 2008, 130, 6826-6830.	6.6	88
93	α-Synuclein Conformation Affects Its Tyrosine-Dependent Oxidative Aggregation. Biochemistry, 2008, 47, 13604-13609.	1.2	33
94	Reconsideration of sedimentation equilibrium distributions reflecting the effects of small inert cosolutes on the dimerization of \hat{l}_{\pm} -chymotrypsin. Biophysical Chemistry, 2007, 130, 89-92.	1.5	9
95	Temperature-induced reversible conformational change in the first 100 residues of α-synuclein. Protein Science, 2006, 15, 602-608.	3.1	46
96	Cytosol Has a Small Effect on Protein Backbone Dynamicsâ€. Biochemistry, 2006, 45, 10085-10091.	1.2	12
97	Macromolecular Crowding in the Escherichia coli Periplasm Maintains α-Synuclein Disorder. Journal of Molecular Biology, 2006, 355, 893-897.	2.0	164
98	Woes of proline: A cautionary kinetic tale. Protein Science, 2006, 15, 393-394.	3.1	3
99	Peeking into living eukaryotic cells with high-resolution NMR. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 11817-11818.	3.3	14
100	Pressure perturbation calorimetry of helical peptides. Proteins: Structure, Function and Bioinformatics, 2005, 63, 322-326.	1.5	11
101	A model of intracellular organization. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 5901-5902.	3.3	35
102	Protein Dynamics in Living Cells. Biochemistry, 2005, 44, 9275-9279.	1.2	45
103	Impact of Protein Denaturants and Stabilizers on Water Structure. Journal of the American Chemical Society, 2004, 126, 1958-1961.	6.6	289
104	Testing Hypotheses about Determinants of Protein Structure with High-Precision, High-Throughput Stability Measurements and Statistical Modeling. Biochemistry, 2003, 42, 7594-7603.	1.2	11
105	Stability and apoptotic activity of recombinant human cytochrome c. Biochemical and Biophysical Research Communications, 2003, 312, 733-740.	1.0	66
106	FlgM gains structure in living cells. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 12681-12684.	3.3	290
107	Crowding by Trisaccharides and the 2:1 Cytochrome câ^'Cytochrome c Peroxidase Complex. Biochemistry, 2002, 41, 547-551.	1.2	14
108	Searching for quantitative entropy-enthalpy compensation among protein variants. Proteins: Structure, Function and Bioinformatics, 2002, 49, 398-402.	1.5	16

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109	Effects of molecular crowding by saccharides on \hat{l}_{\pm} -chymotrypsin dimerization. Protein Science, 2002, 11, 997-1003.	3.1	51
110	Second virial coefficients as a measure of protein-osmolyte interactions. Protein Science, 2001, 10, 12-16.	3.1	40
111	Characterization of Horse Cytochrome c Expressed in Escherichia coli. Protein Expression and Purification, 2001, 22, 220-224.	0.6	47
112	Interpreting the Effects of Small Uncharged Solutes on Protein-Folding Equilibria. Annual Review of Biophysics and Biomolecular Structure, 2001, 30, 271-306.	18.3	264
113	Interactions between Yeast Iso-1-cytochromecand Its Peroxidaseâ€. Biochemistry, 2001, 40, 422-428.	1.2	22
114	Effects of Crowding by Mono-, Di-, and Tetrasaccharides on Cytochrome câ^'Cytochrome c Peroxidase Binding:  Comparing Experiment to Theory. Biochemistry, 2001, 40, 281-285.	1.2	28
115	Osmolyte-induced changes in protein conformational equilibria. Biopolymers, 2000, 53, 293-307.	1.2	159
116	Osmolyte-induced changes in protein conformational equilibria., 2000, 53, 293.		1
117	Osmolyte-induced changes in protein conformational equilibria. Biopolymers, 2000, 53, 293.	1.2	2
118	Nonideality and protein thermal denaturation., 1999, 49, 471-479.		16
119	1H and 15N Hyperfine Shifts of Cytochromec. Journal of the American Chemical Society, 1999, 121, 9247-9248.	6.6	28
120	Role of Configurational Gating in Intracomplex Electron Transfer from Cytochrome c to the Radical Cation in Cytochrome c Peroxidase. Biochemistry, 1999, 38, 6846-6854.	1.2	70
121	Equilibrium Thermodynamics of a Physiologically-Relevant Hemeâ^Protein Complex. Biochemistry, 1999, 38, 16876-16881.	1.2	24
122	Baseline length and automated fitting of denaturation data. Protein Science, 1998, 7, 1262-1263.	3.1	49
123	Sugar-Induced Molten-Globule Model. Biochemistry, 1998, 37, 17048-17053.	1.2	81
124	Native tertiary structure in an A-state 1 1Edited by P. E. Wright. Journal of Molecular Biology, 1998, 275, 379-388.	2.0	77
125	Design, synthesis, expression, and characterization of the genes for mouse Fcl³Rllb1 and Fcl³Rllb2 cytoplasmic regions. Protein Science, 1997, 6, 1038-1046.	3.1	2
126	Identifying the Physiological Electron Transfer Site of CytochromecPeroxidase by Structure-Based Engineeringâ€. Biochemistry, 1996, 35, 667-673.	1.2	44

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127	Probing the CytochromecPeroxidaseâ^CytochromecElectron Transfer Reaction Using Site Specific Cross-Linkingâ€. Biochemistry, 1996, 35, 4837-4845.	1.2	46
128	Changing the Transition State for Protein (Un)foldingâ€. Biochemistry, 1996, 35, 7403-7411.	1.2	20
129	Control of Formation and Dissociation of the High-Affinity Complex between Cytochromecand CytochromecPeroxidase by Ionic Strength and the Low-Affinity Binding Siteâ€. Biochemistry, 1996, 35, 15800-15806.	1.2	46
130	Design of a Rutheniumâ^'CytochromecDerivative To Measure Electron Transfer to the Radical Cation and Oxyferryl Heme in CytochromecPeroxidaseâ€. Biochemistry, 1996, 35, 15107-15119.	1.2	64
131	Requirements for perpendicular helix pairing. , 1996, 26, 95-107.		4
132	Protein thermal denaturation, side-chain models, and evolution: amino acid substitutions at a conserved helix-helix interface. Biochemistry, 1995, 34, 3268-3276.	1.2	51
133	Design of a Ruthenium-Cytochrome c Derivative to Measure Electron Transfer to the Initial Acceptor in Cytochrome c Oxidase. Journal of Biological Chemistry, 1995, 270, 2466-2472.	1.6	92
134	Entropic Stabilization of Cytochrome c upon Reduction. Journal of the American Chemical Society, 1995, 117, 1675-1677.	6.6	72
135	Stability of yeast isoâ€1â€ferricytochrome <i>c</i> as a function of pH and temperature. Protein Science, 1994, 3, 1253-1260.	3.1	83
136	Polarity of disulfide bonds. Protein Science, 1993, 2, 1183-1184.	3.1	24
137	Amide proton exchange rates of oxidized and reduced saccharomyces cerevisiae isoâ€lâ€cytochrome c. Protein Science, 1993, 2, 1966-1974.	3.1	56
138	Introduction of a disulfide bond into cytochrome c stabilizes a compact denatured state. Biochemistry, 1992, 31, 12337-12344.	1.2	79
139	Proton nuclear magnetic resonance as a probe of differences in structure between the C102T and F82S,C102T variants of iso-1-cytochrome c from the yeast Saccharomyces cerevisiae. Biochemistry, 1991, 30, 7033-7040.	1.2	27
140	Comparison of reduced and oxidized yeast iso-1-cytochrome c using proton paramagnetic shifts. Biochemistry, 1991, 30, 1928-1934.	1.2	74
141	Temperature-sensitive variants of Saccharomyces cerevisiae iso-1-cytochrome c produced by random mutagenesis of codons 43 to 54. Journal of Molecular Biology, 1991, 221, 97-105.	2.0	7
142	Assignment of proton resonances, identification of secondary structural elements, and analysis of backbone chemical shifts for the C102T variant of yeast iso-1-cytochrome c and horse cytochrome c. Biochemistry, 1990, 29, 6994-7003.	1.2	81
143	Two-dimensional NMR as a probe of structural similarity applied to mutants of cytochrome c. FEBS Journal, 1988, 177, 179-185.	0.2	23
144	The structure of cytochrome c and its relation to recent studies of long-range electron transfer. Protein Engineering, Design and Selection, 1987, 1, 83-88.	1.0	31

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145	Elimination of the negative soret Cotton effect of cytochrome c by replacement of the invariant phenylalanine using site-directed mutagenesis. Journal of the American Chemical Society, 1986, 108, 2724-2727.	6.6	95
146	Site-directed mutagenesis of cytochrome c shows that an invariant Phe is not essential for function. Nature, 1985, 313, 152-154.	13.7	175
147	Azo protein analogs: synthesis and characterization of arsanilazo and sulfanilazo derivatives of tyrosine and histidine. Biochemistry, 1984, 23, 589-596.	1.2	9
148	Preparation and characterization of sulfanilazo and arsanilazo proteins. Biochemistry, 1984, 23, 596-603.	1.2	9