

Quantifying why urea is a protein denaturant, whereas stabilizer

Proceedings of the National Academy of Sciences of the United States of America
108, 16932-16937

DOI: [10.1073/pnas.1109372108](https://doi.org/10.1073/pnas.1109372108)

Citation Report

#	ARTICLE	IF	CITATIONS
4	Remodeling of the Folding Free Energy Landscape of Staphylococcal Nuclease by Cavity-Creating Mutations. <i>Biochemistry</i> , 2012, 51, 9535-9546.	1.2	41
5	Weak Interactions between Folate and Osmolytes in Solution. <i>Biochemistry</i> , 2012, 51, 2309-2318.	1.2	22
6	Urea's Water Solvation Forces on Prion Structures. <i>Journal of Chemical Theory and Computation</i> , 2012, 8, 3977-3984.	2.3	2
7	Denaturation of RNA Secondary and Tertiary Structure by Urea: Simple Unfolded State Models and Free Energy Parameters Account for Measured ΔG -Values. <i>Biochemistry</i> , 2012, 51, 9014-9026.	1.2	53
8	Preferential Solvation of Triglycine in Aqueous Urea: An Open Boundary Simulation Approach. <i>Journal of Chemical Theory and Computation</i> , 2012, 8, 3536-3541.	2.3	17
10	Quantitative Characterization of Local Protein Solvation To Predict Solvent Effects on Protein Structure. <i>Biophysical Journal</i> , 2012, 103, 1354-1362.	0.2	8
11	Solute's Perspective on How Trimethylamine Oxide, Urea, and Guanidine Hydrochloride Affect Water's Hydrogen Bonding Ability. <i>Journal of Physical Chemistry B</i> , 2012, 116, 12473-12478.	1.2	45
12	Structural Basis for the Enhanced Stability of Protein Model Compounds and Peptide Backbone Unit in Ammonium Ionic Liquids. <i>Journal of Physical Chemistry B</i> , 2012, 116, 11968-11978.	1.2	42
13	Molecular Mechanism for the Preferential Exclusion of TMAO from Protein Surfaces. <i>Journal of Physical Chemistry B</i> , 2012, 116, 12095-12104.	1.2	162
14	Interactions of S-peptide analogue in aqueous urea and trimethylamine-N-oxide solutions: A molecular dynamics simulation study. <i>Journal of Chemical Physics</i> , 2013, 139, 034504.	1.2	10
15	Urea's Effect on the Ribonuclease A Catalytic Efficiency: A Kinetic, 1H NMR and Molecular Orbital Study. <i>Protein Journal</i> , 2013, 32, 118-125.	0.7	0
16	Quantifying Functional Group Interactions That Determine Urea Effects on Nucleic Acid Helix Formation. <i>Journal of the American Chemical Society</i> , 2013, 135, 5828-5838.	6.6	49
17	Dissolution of β -chitin in deep eutectic solvents. <i>RSC Advances</i> , 2013, 3, 18149.	1.7	207
18	Structure and Dynamics of Urea/Water Mixtures Investigated by Vibrational Spectroscopy and Molecular Dynamics Simulation. <i>Journal of Physical Chemistry B</i> , 2013, 117, 13291-13300.	1.2	83
19	The effect of urea on aqueous hydrophobic contact-pair interactions. <i>Physical Chemistry Chemical Physics</i> , 2013, 15, 213-222.	1.3	14
20	Double Resolution Model for Studying TMAO/Water Effective Interactions. <i>Journal of Physical Chemistry B</i> , 2013, 117, 13268-13277.	1.2	93
21	Distinctive Solvation Patterns Make Renal Osmolytes Diverse. <i>Biophysical Journal</i> , 2013, 105, 2166-2174.	0.2	22
22	Probing the protein-folding mechanism using denaturant and temperature effects on rate constants. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 16784-16789.	3.3	38

#	ARTICLE	IF	CITATIONS
23	Coilâ€“Globuleâ€“Coil Transition of PNIPAm in Aqueous Methanol: Coupling All-Atom Simulations to Semi-Grand Canonical Coarse-Grained Reservoir. <i>Macromolecules</i> , 2013, 46, 9158-9163.	2.2	140
24	Gradual Disordering of the Native State on a Slow Two-State Folding Protein Monitored by Single-Molecule Fluorescence Spectroscopy and NMR. <i>Journal of Physical Chemistry B</i> , 2013, 117, 13120-13131.	1.2	22
25	Amide-Mediated Hydrogen Bonding at Organic Crystal/Water Interfaces Enables Selective Endotoxin Binding with Picomolar Affinity. <i>ACS Applied Materials & Interfaces</i> , 2013, 5, 4472-4478.	4.0	20
26	Concluding remarks: Cum grano salis. <i>Faraday Discussions</i> , 2013, 160, 405-414.	1.6	9
27	Rationalizing Polymer Swelling and Collapse under Attractive Cosolvent Conditions. <i>Macromolecules</i> , 2013, 46, 1231-1238.	2.2	88
28	Solvation Free Energy of the Peptide Group: Its Model Dependence and Implications for the Additive-Transfer Free-Energy Model of Protein Stability. <i>Biophysical Journal</i> , 2013, 105, 1482-1490.	0.2	21
29	Cosolvent Effects on Protein Stability. <i>Annual Review of Physical Chemistry</i> , 2013, 64, 273-293.	4.8	408
30	Interactions of Glycine Betaine with Proteins: Insights from Volume and Compressibility Measurements. <i>Biochemistry</i> , 2013, 52, 672-680.	1.2	24
31	Osmolyte Effects on the Self-Association of Concanavalin A: Testing Theoretical Models. <i>Biochemistry</i> , 2013, 52, 9367-9374.	1.2	23
32	Quantifying the Temperature Dependence of Glycineâ€”Betaine RNA Duplex Destabilization. <i>Biochemistry</i> , 2013, 52, 9339-9346.	1.2	6
33	Quantifying Additive Interactions of the Osmolyte Proline with Individual Functional Groups of Proteins: Comparisons with Urea and Glycine Betaine, Interpretation of <i>m</i> -Values. <i>Biochemistry</i> , 2013, 52, 5997-6010.	1.2	59
34	Toward an atomistic description of the urea-denatured state of proteins. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 5933-5938.	3.3	50
35	Kinetics and Thermodynamics of Membrane Protein Folding. <i>Biomolecules</i> , 2014, 4, 354-373.	1.8	27
36	CHAPTER 21. Partial Molar Volumes of Proteins in Solution. , 2014, , 542-574.		1
37	Protein stabilization and counteraction of denaturing effect of urea by glycine betaine. <i>Biophysical Chemistry</i> , 2014, 189, 16-24.	1.5	29
38	Plant salt-tolerance mechanisms. <i>Trends in Plant Science</i> , 2014, 19, 371-379.	4.3	1,343
39	Interactions of Urea with Native and Unfolded Proteins: A Volumetric Study. <i>Journal of Physical Chemistry B</i> , 2014, 118, 13554-13563.	1.2	17
40	Polymer collapse in miscible good solvents is a generic phenomenon driven by preferential adsorption. <i>Nature Communications</i> , 2014, 5, 4882.	5.8	207

#	ARTICLE	IF	CITATIONS
41	Effect of cosolvent on protein stability: A theoretical investigation. <i>Journal of Chemical Physics</i> , 2014, 141, 22D504.	1.2	20
42	Thermodynamic Description of Hofmeister Effects on the LCST of Thermosensitive Polymers. <i>Journal of Physical Chemistry B</i> , 2014, 118, 10979-10988.	1.2	93
43	Investigation of Osmolyte Effects on FoLM: Comparison with Other Dihydrofolate Reductases. <i>Biochemistry</i> , 2014, 53, 1330-1341.	1.2	15
44	Unified Description of Urea Denaturation: Backbone and Side Chains Contribute Equally in the Transfer Model. <i>Journal of Physical Chemistry B</i> , 2014, 118, 107-114.	1.2	91
45	Urea Induced Unfolding Dynamics of Flavin Adenine Dinucleotide (FAD): Spectroscopic and Molecular Dynamics Simulation Studies from Femto-Second to Nanosecond Regime. <i>Journal of Physical Chemistry B</i> , 2014, 118, 1881-1890.	1.2	14
46	Coupled Enzyme Reactions Performed in Heterogeneous Reaction Media: Experiments and Modeling for Glucose Oxidase and Horseradish Peroxidase in a PEG/Citrate Aqueous Two-Phase System. <i>Journal of Physical Chemistry B</i> , 2014, 118, 2506-2517.	1.2	31
47	Factor Defining the Effects of Glycine Betaine on the Thermodynamic Stability and Internal Dynamics of Horse Cytochrome <i>c</i> . <i>Biochemistry</i> , 2014, 53, 5221-5235.	1.2	13
48	Molecular Dynamics Simulation of Aqueous Urea Solution: Is Urea a Structure Breaker?. <i>Journal of Physical Chemistry B</i> , 2014, 118, 11757-11768.	1.2	103
49	Hydration Changes Accompanying Helix-to-Coil DNA Transitions. <i>Journal of the American Chemical Society</i> , 2014, 136, 4040-4047.	6.6	50
50	Microscopic insights into the protein-stabilizing effect of trimethylamine N-oxide (TMAO). <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 8476-8481.	3.3	209
51	Separating chemical and excluded volume interactions of polyethylene glycols with native proteins: Comparison with PEG effects on DNA helix formation. <i>Biopolymers</i> , 2015, 103, 517-527.	1.2	44
52	Chemical Interactions of Polyethylene Glycols (PEGs) and Glycerol with Protein Functional Groups: Applications to Effects of PEG and Glycerol on Protein Processes. <i>Biochemistry</i> , 2015, 54, 3528-3542.	1.2	93
53	Quantitative Assessments of the Distinct Contributions of Polypeptide Backbone Amides versus Side Chain Groups to Chain Expansion via Chemical Denaturation. <i>Journal of the American Chemical Society</i> , 2015, 137, 2984-2995.	6.6	104
54	Synergy in Protein-Osmolyte Mixtures. <i>Journal of Physical Chemistry B</i> , 2015, 119, 150-157.	1.2	24
55	Mutual Exclusion of Urea and Trimethylamine N-Oxide from Amino Acids in Mixed Solvent Environment. <i>Journal of Physical Chemistry Letters</i> , 2015, 6, 581-585.	2.1	72
56	Theoretical model to investigate the alkyl chain and anion dependent interactions of gemini surfactant with bovine serum albumin. <i>Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy</i> , 2015, 143, 319-323.	2.0	22
57	The mechanism of cellulose solubilization by urea studied by molecular simulation. <i>Cellulose</i> , 2015, 22, 991-1001.	2.4	37
58	Its Preferential Interactions with Biopolymers Account for Diverse Observed Effects of Trehalose. <i>Biophysical Journal</i> , 2015, 109, 144-153.	0.2	24

#	ARTICLE	IF	CITATIONS
59	Thermodynamics and solvent linkage of macromoleculeâ€“ligand interactions. <i>Methods</i> , 2015, 76, 51-60.	1.9	17
60	Single-molecule chemo-mechanical unfolding reveals multiple transition state barriers in a small single-domain protein. <i>Nature Communications</i> , 2015, 6, 6861.	5.8	73
61	A hypothesis to reconcile the physical and chemical unfolding of proteins. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015, 112, E2775-84.	3.3	74
62	Water structure and chaotropicity: their uses, abuses and biological implications. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 8297-8305.	1.3	215
63	Is the depletion force entropic? Molecular crowding beyond steric interactions. <i>Current Opinion in Colloid and Interface Science</i> , 2015, 20, 3-10.	3.4	106
64	Elimination of gibberellin from <i>Kappaphycus alvarezii</i> seaweed sap foliar spray enhances corn stover production without compromising the grain yield advantage. <i>Plant Growth Regulation</i> , 2015, 75, 657-666.	1.8	55
65	The role of the concentration scale in the definition of transfer free energies. <i>Biophysical Chemistry</i> , 2015, 196, 68-76.	1.5	21
66	Role of Ion Transporters in Salinity Resistance in Plants. <i>Environmental Control in Biology</i> , 2016, 54, 1-6.	0.3	9
67	Protein thermal stabilization in aqueous solutions of osmolytes.. <i>Acta Biochimica Polonica</i> , 2016, 63, 65-70.	0.3	10
68	Mechanical Insight into Resistance of Betaine to Urea-Induced Protein Denaturation. <i>Journal of Physical Chemistry B</i> , 2016, 120, 12327-12333.	1.2	12
69	Interaction-component analysis of the hydration and urea effects on cytochrome <i>c</i> . <i>Journal of Chemical Physics</i> , 2016, 144, 085102.	1.2	27
70	Model Dependency of TMAOâ€™s Counteracting Effect Against Action of Urea: Kast Model versus Osmotic Model of TMAO. <i>Journal of Physical Chemistry B</i> , 2016, 120, 2352-2361.	1.2	30
71	Infrared and Fluorescence Assessment of Protein Dynamics: From Folding to Function. <i>Journal of Physical Chemistry B</i> , 2016, 120, 5103-5113.	1.2	25
72	Influence of TMAO and urea on the structure of water studied by inelastic X-ray scattering. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 16518-16526.	1.3	50
73	Positioning the Intracellular Salt Potassium Glutamate in the Hofmeister Series by Chemical Unfolding Studies of NTL9. <i>Biochemistry</i> , 2016, 55, 2251-2259.	1.2	23
74	Molecular basis of the osmolyte effect on protein stability: a lesson from the mechanical unfolding of lysozyme. <i>Biochemical Journal</i> , 2016, 473, 3705-3724.	1.7	19
75	Probing the Action of Chemical Denaturant on an Intrinsically Disordered Protein by Simulation and Experiment. <i>Journal of the American Chemical Society</i> , 2016, 138, 11702-11713.	6.6	121
76	Volumetrically Derived Thermodynamic Profile of Interactions of Urea with a Native Protein. <i>Biochemistry</i> , 2016, 55, 6475-6483.	1.2	5

#	ARTICLE	IF	CITATIONS
77	Hydrophobic Association in Mixed Urea/TMAO Solutions. <i>Journal of Physical Chemistry Letters</i> , 2016, 7, 3052-3059.	2.1	44
78	TMAO-Protein Preferential Interaction Profile Determines TMAO's Conditional In Vivo Compatibility. <i>Biophysical Journal</i> , 2016, 111, 1866-1875.	0.2	18
79	Aspects of Weak Interactions between Folate and Glycine Betaine. <i>Biochemistry</i> , 2016, 55, 6282-6294.	1.2	6
80	Basis of Protein Stabilization by K Glutamate: Unfavorable Interactions with Carbon, Oxygen Groups. <i>Biophysical Journal</i> , 2016, 111, 1854-1865.	0.2	35
81	The aggregation of cytochrome C may be linked to its flexibility during refolding. <i>3 Biotech</i> , 2016, 6, 33.	1.1	0
82	Hofmeister effect on thermo-responsive poly(propylene oxide): Role of polymer molecular weight and concentration. <i>Journal of Colloid and Interface Science</i> , 2016, 465, 67-75.	5.0	22
83	Effect of Urea on Phase Transition of Poly(<i>N</i> -isopropylacrylamide) and Poly(<i>N,N</i> -diethylacrylamide) Hydrogels: A Clue for Urea-Induced Denaturation. <i>Macromolecules</i> , 2016, 49, 234-243.	2.2	63
84	Sustainable enhancement in yield and quality of rain-fed maize through <i>Gracilaria edulis</i> and <i>Kappaphycus alvarezii</i> seaweed sap. <i>Journal of Applied Phycology</i> , 2016, 28, 2099-2112.	1.5	72
85	TMAO and urea in the hydration shell of the protein SNase. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 6345-6357.	1.3	46
86	Cosolute and Crowding Effects on a Side-By-Side Protein Dimer. <i>Biochemistry</i> , 2017, 56, 971-976.	1.2	42
87	Equilibrium Denaturation and Preferential Interactions of an RNA Tetraloop with Urea. <i>Journal of Physical Chemistry B</i> , 2017, 121, 3734-3746.	1.2	18
88	Can an ammonium-based room temperature ionic liquid counteract the urea-induced denaturation of a small peptide?. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 7772-7787.	1.3	23
89	Pyridine-incorporated cyclo[6]aramide for recognition of urea and its derivatives with two different binding modes. <i>Supramolecular Chemistry</i> , 2017, 29, 730-740.	1.5	10
90	Beyond the Hofmeister Series: Ion-Specific Effects on Proteins and Their Biological Functions. <i>Journal of Physical Chemistry B</i> , 2017, 121, 1997-2014.	1.2	466
91	Osmotic Shock Induced Protein Destabilization in Living Cells and Its Reversal by Glycine Betaine. <i>Journal of Molecular Biology</i> , 2017, 429, 1155-1161.	2.0	86
92	Coherent Experimental and Simulation Approach To Explore the Underlying Mechanism of Denaturation of Stem Bromelain in Osmolytes. <i>Journal of Physical Chemistry B</i> , 2017, 121, 6456-6470.	1.2	12
93	Effect of Urea on G-Quadruplex Stability. <i>Journal of Physical Chemistry B</i> , 2017, 121, 6511-6519.	1.2	23
94	Molecular interactions accounting for protein denaturation by urea. <i>Journal of Molecular Liquids</i> , 2017, 228, 168-175.	2.3	27

#	ARTICLE	IF	CITATIONS
95	Regulation of Surface Charge by Biological Osmolytes. <i>Journal of the American Chemical Society</i> , 2017, 139, 15013-15021.	6.6	21
96	Role of Urea's Aromatic Stacking Interactions in Stabilizing the Aromatic Residues of the Protein in Urea-Induced Denatured State. <i>Journal of the American Chemical Society</i> , 2017, 139, 14931-14946.	6.6	47
97	Current Trends in Salinity and Waterlogging Tolerance. , 2017, , 177-220.		2
98	The mechanism and high-free-energy transition state of lac repressor's lac operator interaction. <i>Nucleic Acids Research</i> , 2017, 45, 12671-12680.	6.5	9
99	Cooperative hydrogen bonds form a pseudocycle stabilizing an isolated complex of isocyanic acid with urea. <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 25080-25085.	1.3	6
100	Determining the folding and binding free energy of DNA-based nanodevices and nanoswitches using urea titration curves. <i>Nucleic Acids Research</i> , 2017, 45, 7571-7580.	6.5	26
101	Proline and RNA Duplex ΔG -Value Temperature Dependence. <i>Journal of Physical Chemistry B</i> , 2017, 121, 7247-7255.	1.2	1
102	Interaction-component analysis of the effects of urea and its alkylated derivatives on the structure of T4-lysozyme. <i>Journal of Chemical Physics</i> , 2017, 146, 225103.	1.2	8
103	Crowders and Cosolvents' Major Contributors to the Cellular Milieu and Efficient Means to Counteract Environmental Stresses. <i>ChemPhysChem</i> , 2017, 18, 2951-2972.	1.0	82
104	Putting the Piezolyte Hypothesis under Pressure. <i>Biophysical Journal</i> , 2017, 113, 974-977.	0.2	13
105	Ammonium based stabilizers effectively counteract urea-induced denaturation in a small protein: insights from molecular dynamics simulations. <i>RSC Advances</i> , 2017, 7, 52888-52906.	1.7	24
106	Experimental Atom-by-Atom Dissection of Amide's Amide and Amide's Hydrocarbon Interactions in H_2O . <i>Journal of the American Chemical Society</i> , 2017, 139, 9885-9894.	6.6	21
107	Naked-Eye Detection of Reversible Protein Folding and Unfolding in Aqueous Solution. <i>Journal of Chemical Education</i> , 2017, 94, 350-355.	1.1	12
108	Effect of urea on protein-ligand association. <i>Biophysical Chemistry</i> , 2017, 231, 15-19.	1.5	5
109	Diffusion of aqueous solutions of ionic, zwitterionic, and polar solutes. <i>Journal of Chemical Physics</i> , 2018, 148, 222827.	1.2	17
110	Rare Dissipative Transitions Punctuate the Initiation of Chemical Denaturation in Proteins. <i>Biophysical Journal</i> , 2018, 114, 812-821.	0.2	0
111	Effect of osmolytes on the thermal stability of proteins: replica exchange simulations of Trp-cage in urea and betaine solutions. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 11174-11182.	1.3	18
112	Preferential Binding of Urea to Single-Stranded DNA Structures: A Molecular Dynamics Study. <i>Biophysical Journal</i> , 2018, 114, 1551-1562.	0.2	30

#	ARTICLE	IF	CITATIONS
113	Effect of Osmolytes on the Conformational Behavior of a Macromolecule in a Cytoplasm-like Crowded Environment: A Femtosecond Mid-IR Pump-Probe Spectroscopy Study. <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 724-731.	2.1	10
114	The opposing effect of urea and high pressure on the conformation of the protein β^2 -hairpin: A molecular dynamics simulation study. <i>Journal of Molecular Liquids</i> , 2018, 251, 378-384.	2.3	5
115	Atomistic level understanding of the stabilization of protein Trp cage in denaturing and mixed osmolyte solutions. <i>Computational and Theoretical Chemistry</i> , 2018, 1131, 78-89.	1.1	11
116	Quantifying Interactions of Nucleobase Atoms with Model Compounds for the Peptide Backbone and Glutamine and Asparagine Side Chains in Water. <i>Biochemistry</i> , 2018, 57, 2227-2237.	1.2	6
117	Elucidation of stable intermediates in urea-induced unfolding pathway of human carbonic anhydrase IX. <i>Journal of Biomolecular Structure and Dynamics</i> , 2018, 36, 2391-2406.	2.0	19
118	Glycine betaine counteracts the inhibitory effects of waterlogging on growth, photosynthetic pigments, oxidative defence system, nutrient composition, and fruit quality in tomato. <i>Journal of Horticultural Science and Biotechnology</i> , 2018, 93, 385-391.	0.9	53
119	Trimethylamine <i>N</i> -oxide Counteracts Urea Denaturation by Inhibiting Protein-Urea Preferential Interaction. <i>Journal of the American Chemical Society</i> , 2018, 140, 483-492.	6.6	94
121	Exploring the Denatured State Ensemble by Single-Molecule Chemo-Mechanical Unfolding: The Effect of Force, Temperature, and Urea. <i>Journal of Molecular Biology</i> , 2018, 430, 450-464.	2.0	17
122	Quantum mechanical investigation of the nature of nucleobase-urea stacking interaction, a crucial driving force in RNA unfolding in aqueous urea. <i>Journal of Chemical Sciences</i> , 2018, 130, 1.	0.7	2
123	Zwitterionic Osmolytes Resurrect Electrostatic Interactions Screened by Salt. <i>Journal of the American Chemical Society</i> , 2018, 140, 14206-14210.	6.6	30
124	Protein shape modulates crowding effects. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 10965-10970.	3.3	72
125	Noncovalent Interactions between Trimethylamine <i>N</i> -Oxide (TMAO), Urea, and Water. <i>Journal of Physical Chemistry B</i> , 2018, 122, 8805-8811.	1.2	21
126	In-Cell Titration of Small Solutes Controls Protein Stability and Aggregation. <i>Journal of the American Chemical Society</i> , 2018, 140, 10497-10503.	6.6	36
127	Changing relations between proteins and osmolytes: a choice of nature. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 20315-20333.	1.3	35
128	Effect of osmolytes of different type on DNA behavior in aqueous solution. Experimental and theoretical studies. <i>Journal of Molecular Liquids</i> , 2018, 271, 186-201.	2.3	8
129	Coacervates and coaggregates: Liquid-liquid and liquid-solid phase transitions by native and unfolded protein complexes. <i>International Journal of Biological Macromolecules</i> , 2018, 120, 10-18.	3.6	29
130	Assessment of the chitosan-functionalized graphene oxide as a carrier for loading thioguanine, an antitumor drug and effect of urea on adsorption process: Combination of DFT computational and molecular dynamics simulation studies. <i>Journal of Biomolecular Structure and Dynamics</i> , 2019, 37, 2487-2497.	2.0	31
131	The Hofmeister series: Specific ion effects in aqueous polymer solutions. <i>Journal of Colloid and Interface Science</i> , 2019, 555, 615-635.	5.0	110

#	ARTICLE	IF	CITATIONS
132	A New Approach of Extraction of α -Amylase/trypsin Inhibitors from Wheat (<i>Triticum aestivum</i> L.), Based on Optimization Using Plackett-Burman and Box-Behnken Designs. <i>Molecules</i> , 2019, 24, 3589.	1.7	19
133	Distinct and Nonadditive Effects of Urea and Guanidinium Chloride on Peptide Solvation. <i>Journal of Physical Chemistry Letters</i> , 2019, 10, 7406-7413.	2.1	23
134	Efficacy of several additives to modulate the phase behavior of biomedical polymers: A comprehensive and comparative outlook. <i>Advances in Colloid and Interface Science</i> , 2019, 274, 102042.	7.0	8
135	On urea and temperature dependences of m-values. <i>Journal of Chemical Physics</i> , 2019, 150, 215103.	1.2	8
136	Energetic, Structural and Dynamic Properties of Nucleobase-Urea Interactions that Aid in Urea Assisted RNA Unfolding. <i>Scientific Reports</i> , 2019, 9, 8805.	1.6	8
137	Plants and salt: Plant response and adaptations to salinity. , 2019, , 101-112.		27
138	Using Single-Molecule Chemo-Mechanical Unfolding to Simultaneously Probe Multiple Structural Parameters in Protein Folding. <i>Methods and Protocols</i> , 2019, 2, 32.	0.9	0
139	Betaine Amphoteric Surfactants—Synthesis, Properties, and Applications. , 2019, , 447-469.		24
140	Evolution of Conformation and Dynamics of Solvents in Hydration Shell along the Urea-induced Unfolding of Ubiquitin. <i>Chinese Journal of Polymer Science (English Edition)</i> , 2019, 37, 708-718.	2.0	4
141	Crowders Steal Dihydrofolate Reductase Ligands through Quinary Interactions. <i>Biochemistry</i> , 2019, 58, 1198-1213.	1.2	4
142	Pyridine-Based Macrocyclic and Open Receptors for Urea. <i>ChemistrySelect</i> , 2019, 4, 12825-12831.	0.7	7
143	Molecular Thermodynamics of Protein Systems. , 2019, , 443-506.		0
144	Thermal stability modulation of the native and chemically-unfolded state of bovine serum albumin by amino acids. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 179-188.	1.3	21
145	In silico study of osmolytic effects of choline-O-sulfate on urea induced unfolding of Trp-cage mini-protein: An atomistic view from replica exchange molecular dynamics simulation. <i>Archives of Biochemistry and Biophysics</i> , 2020, 695, 108484.	1.4	3
146	Conformational dynamics of superoxide dismutase (SOD1) in osmolytes: a molecular dynamics simulation study. <i>RSC Advances</i> , 2020, 10, 27598-27614.	1.7	19
147	Experimentally determined strengths of favorable and unfavorable interactions of amide atoms involved in protein self-assembly in water. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 27339-27345.	3.3	14
148	Molecular crowding and RNA catalysis. <i>Organic and Biomolecular Chemistry</i> , 2020, 18, 7724-7739.	1.5	17
149	Mechanisms and Signaling Pathways of Salt Tolerance in Crops: Understanding from the Transgenic Plants. <i>Tropical Plant Biology</i> , 2020, 13, 297-320.	1.0	10

#	ARTICLE	IF	CITATIONS
150	Urea-water solvation of protein side chain models. <i>Journal of Molecular Liquids</i> , 2020, 311, 113191.	2.3	2
151	Impact of high salinity and the compatible solute glycine betaine on gene expression of <i>Bacillus subtilis</i> . <i>Environmental Microbiology</i> , 2020, 22, 3266-3286.	1.8	14
152	Protein Stability in TMAO and Mixed Urea/TMAO Solutions. <i>Journal of Physical Chemistry B</i> , 2020, 124, 6181-6197.	1.2	50
153	Can glycine betaine denature proteins?. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 7794-7802.	1.3	9
154	Effects of Osmolytes on Ligand Binding to Dihydropteroate Synthase from <i>Bacillus anthracis</i> . <i>Journal of Physical Chemistry B</i> , 2020, 124, 6212-6224.	1.2	3
155	Determination of Protein-Protein Interactions at High Co-Solvent Concentrations Using Static and Dynamic Light Scattering. <i>Journal of Pharmaceutical Sciences</i> , 2020, 109, 2699-2709.	1.6	12
156	Urea-aromatic interactions in biology. <i>Biophysical Reviews</i> , 2020, 12, 65-84.	1.5	18
157	Dynamical Model for the Counteracting Effects of Trimethylamine-N-Oxide on Urea in Aqueous Solutions under Pressure. <i>Journal of Physical Chemistry B</i> , 2020, 124, 1978-1986.	1.2	11
158	pH-Responsive Reversible DNA Self-assembly Mediated by Zwitterion. <i>Chemical Research in Chinese Universities</i> , 2020, 36, 285-290.	1.3	4
159	Quantitative Interpretation of Solvent Paramagnetic Relaxation for Probing Protein/Cosolute Interactions. <i>Journal of the American Chemical Society</i> , 2020, 142, 8281-8290.	6.6	23
160	Organic osmolytes increase expression of specific tight junction proteins in skin and alter barrier function in keratinocytes*. <i>British Journal of Dermatology</i> , 2021, 184, 482-494.	1.4	11
161	Protein-complex stability in cells and in vitro under crowded conditions. <i>Current Opinion in Structural Biology</i> , 2021, 66, 183-192.	2.6	37
162	Quantitative calorimetric evidences into counteraction mechanism of denaturing effect of guanidine hydrochloride by citrulline and betaine. <i>Journal of Molecular Liquids</i> , 2021, 323, 114953.	2.3	0
163	Solvation energetics of proteins and their aggregates analyzed by all-atom molecular dynamics simulations and the energy-representation theory of solvation. <i>Chemical Communications</i> , 2021, 57, 9968-9978.	2.2	3
164	Interaction strength of osmolytes with the anion of a salt-bridge determines its stability. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 5527-5539.	1.3	2
165	Effect of urea and glycine betaine on the hydration sphere of model molecules for the surface features of proteins. <i>Journal of Molecular Liquids</i> , 2021, 324, 115090.	2.3	7
166	Thermodynamic Analysis of the Self-Assembly of Pseudo Isocyanine Chloride in the Presence of Crowding Agents. <i>ChemSystemsChem</i> , 2021, 3, e2000051.	1.1	3
167	How Glycine Betaine Modifies Lipid Membrane Interactions. <i>ChemSystemsChem</i> , 2021, 3, e2100010.	1.1	3

#	ARTICLE	IF	CITATIONS
168	The Zero-Order Loop in Apoazurin Modulates Folding Mechanism In Silico. <i>Journal of Physical Chemistry B</i> , 2021, 125, 3501-3509.	1.2	3
169	Anionic Polysaccharide-Modified Filter Papers for Rapid Isolation of Extracellular Vesicles from Diverse Samples in a Simple Bindâ€“Washâ€“Elute Manner. <i>Analytical Chemistry</i> , 2021, 93, 7405-7412.	3.2	7
170	Volumetric Interplay between the Conformational States Adopted by Guanine-Rich DNA from the c-MYC Promoter. <i>Journal of Physical Chemistry B</i> , 2021, 125, 7406-7416.	1.2	8
171	Atomic view of cosolute-induced protein denaturation probed by NMR solvent paramagnetic relaxation enhancement. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	13
172	\hat{I}^2 -Hairpin Miniprotein Stabilization in Trehalose Glass Is Facilitated by an Emergent Compact Non-Native State. <i>Journal of Physical Chemistry Letters</i> , 2021, 12, 7659-7664.	2.1	2
173	Novel Daptomycin Tolerance and Resistance Mutations in Methicillin-Resistant <i>Staphylococcus aureus</i> from Adaptive Laboratory Evolution. <i>MSphere</i> , 2021, 6, e0069221.	1.3	11
174	Using Solutes and Kinetics to Probe Large Conformational Changes in the Steps of Transcription Initiation. <i>Methods in Molecular Biology</i> , 2015, 1276, 241-261.	0.4	4
175	Abundant betaines in giant clams (<i>Tridacnidae</i>) and western Pacific reef corals, including study of coral betaine acclimatization. <i>Marine Ecology - Progress Series</i> , 2017, 576, 27-41.	0.9	7
176	Molecular insights into the ureaâ€“choline-O-sulfate interactions in aqueous solution. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 25317-25334.	1.3	2
177	Hofmeister effects on protein stability are dependent on the nature of the unfolded state. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 25210-25225.	1.3	2
178	Effects of Hydrostatic Pressure on the Thermodynamics of CspB-Bs Interactions with the ssDNA Template. <i>Biochemistry</i> , 2021, 60, 3086-3097.	1.2	2
179	Chemical Denaturation. , 2014, , 1-7.		1
180	Chemical Denaturation. , 2018, , 75-80.		0
181	Protein Refolding/Renaturation. , 2019, , 860-878.		0
184	Heterologous Production of Glycine Betaine Using <i>Synechocystis</i> sp. PCC 6803-Based Chassis Lacking Native Compatible Solutes. <i>Frontiers in Bioengineering and Biotechnology</i> , 2021, 9, 821075.	2.0	3
185	Understanding the Responses, Mechanism and Development of Salinity Stress Tolerant Cultivars in Rice. , 0, , .		2
186	Combined action of chemical chaperones on stability, aggregation and oligomeric state of muscle glycogen phosphorylase b. <i>International Journal of Biological Macromolecules</i> , 2022, 203, 406-416.	3.6	5
187	A Difference between <i>In Vitro</i> and In-Cell Protein Dimer Formation. <i>Biochemistry</i> , 2022, 61, 409-412.	1.2	3

#	ARTICLE	IF	CITATIONS
188	Effect of Osmolytes on Water Mobility Correlates with Their Stabilizing Effect on Proteins. Journal of Physical Chemistry B, 2022, 126, 2466-2475.	1.2	19
189	Mechanism of Osmolyte Stabilizationâ€“Destabilization of Proteins: Experimental Evidence. Journal of Physical Chemistry B, 2022, 126, 2990-2999.	1.2	7
190	Synthesis of cross-linked tannin-gelatin hydrogels. Russian Chemical Bulletin, 2022, 71, 557-563.	0.4	3
191	Quaternary Ammonium Compounds as Candidate Photoprotective Compounds in Reef-Building Corals. Frontiers in Marine Science, 2022, 9, .	1.2	1
192	Deep sea osmolytes in action: their effect on proteinâ€“ligand binding under high pressure stress. Physical Chemistry Chemical Physics, 2022, 24, 17966-17978.	1.3	8
193	Zwitterionic Osmolytes Revive Surface Charges under Salt Stress via Dual Mechanisms. Journal of Physical Chemistry Letters, 2022, 13, 5660-5668.	2.1	4
194	A simple theory for interfacial properties of dilute solutions. Journal of Chemical Physics, 0, , .	1.2	2
195	Ionic liquid solvation of proteins in native and denatured states. Journal of Molecular Liquids, 2022, 363, 119953.	2.3	5
196	Cosolvent Exclusion Drives Protein Stability in Trimethylamine<i>N</i>-Oxide and Betaine Solutions. Journal of Physical Chemistry Letters, 2022, 13, 7980-7986.	2.1	7
197	Urea counteracts trimethylamine N-oxide (TMAO) compaction of lipid membranes by modifying van der Waals interactions. Journal of Colloid and Interface Science, 2023, 629, 165-172.	5.0	2
198	The influence of cross-interactions between dilute cosolutes upon liquid interfaces. Journal of Chemical Physics, 0, , .	1.2	0
199	Dehydration does not affect lipid-based hydration lubrication. Nanoscale, 2022, 14, 18241-18252.	2.8	2
200	Does Urea Preferentially Interact with Amide Moieties or Nonpolar Sidechains? A Question Answered Through a Judicious Selection of Model Systems. ChemPhysChem, 2023, 24, .	1.0	1
201	Direct calculation of the temperature dependence of 2D-IR spectra: Urea in water. Journal of Chemical Physics, 2023, 158, .	1.2	1