

Jayant B Udgaonkar

List of Publications by Year in descending order

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112
papers

4,846
citations

81839

39
h-index

114418

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117
all docs

117
docs citations

117
times ranked

3276
citing authors

#	ARTICLE	IF	CITATIONS
1	NMR evidence for an early framework intermediate on the folding pathway of ribonuclease A. <i>Nature</i> , 1988, 335, 694-699.	13.7	633
2	Thermodynamics of Denaturation of Barstar: Evidence for Cold Denaturation and Evaluation of the Interaction with Guanidine Hydrochloride. <i>Biochemistry</i> , 1995, 34, 3286-3299.	1.2	221
3	Initial hydrophobic collapse in the folding of barstar. <i>Nature</i> , 1995, 377, 754-757.	13.7	215
4	Understanding the Kinetic Roles of the Inducer Heparin and of Rod-like Protofibrils during Amyloid Fibril Formation by Tau Protein. <i>Journal of Biological Chemistry</i> , 2011, 286, 38948-38959.	1.6	122
5	Direct evidence for a dry molten globule intermediate during the unfolding of a small protein. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 12289-12294.	3.3	121
6	Structure is lost incrementally during the unfolding of barstar. <i>Nature Structural Biology</i> , 2001, 8, 799-804.	9.7	109
7	The Folding Mechanism of Barstar: Evidence for Multiple Pathways and Multiple Intermediates. <i>Journal of Molecular Biology</i> , 1995, 247, 1013-1027.	2.0	107
8	Salt-Induced Modulation of the Pathway of Amyloid Fibril Formation by the Mouse Prion Protein. <i>Biochemistry</i> , 2010, 49, 7615-7624.	1.2	101
9	Multiple Routes and Structural Heterogeneity in Protein Folding. <i>Annual Review of Biophysics</i> , 2008, 37, 489-510.	4.5	91
10	Multiple intermediates and transition states during protein unfolding. <i>Nature Structural Biology</i> , 1997, 4, 1016-1024.	9.7	87
11	Continuous dissolution of structure during the unfolding of a small protein. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 11113-11118.	3.3	84
12	Evidence for Stepwise Formation of Amyloid Fibrils by the Mouse Prion Protein. <i>Journal of Molecular Biology</i> , 2008, 382, 1228-1241.	2.0	75
13	How cooperative are protein folding and unfolding transitions?. <i>Protein Science</i> , 2016, 25, 1924-1941.	3.1	70
14	Mechanism of Formation of Amyloid Protofibrils of Barstar from Soluble Oligomers: Evidence for Multiple Steps and Lateral Association Coupled to Conformational Conversion. <i>Journal of Molecular Biology</i> , 2007, 367, 1186-1204.	2.0	57
15	Evidence for the Existence of a Secondary Pathway for Fibril Growth during the Aggregation of Tau. <i>Journal of Molecular Biology</i> , 2012, 421, 296-314.	2.0	57
16	Mechanism of Formation of a Productive Molten Globule Form of Barstar. <i>Biochemistry</i> , 2002, 41, 1710-1716.	1.2	55
17	Osmolytes Induce Structure in an Early Intermediate on the Folding Pathway of Barstar. <i>Journal of Biological Chemistry</i> , 2004, 279, 40303-40313.	1.6	55
18	Development of the Structural Core and of Conformational Heterogeneity during the Conversion of Oligomers of the Mouse Prion Protein to Worm-like Amyloid Fibrils. <i>Journal of Molecular Biology</i> , 2012, 423, 217-231.	2.0	54

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19	Increasing Stability Reduces Conformational Heterogeneity in a Protein Folding Intermediate Ensemble. <i>Journal of Molecular Biology</i> , 2004, 337, 699-711.	2.0	53
20	Rational Stabilization of Helix 2 of the Prion Protein Prevents Its Misfolding and Oligomerization. <i>Journal of the American Chemical Society</i> , 2014, 136, 16704-16707.	6.6	53
21	Molecular Mechanism of the Misfolding and Oligomerization of the Prion Protein: Current Understanding and Its Implications. <i>Biochemistry</i> , 2015, 54, 4431-4442.	1.2	53
22	Characterization of the Unfolding of Ribonuclease A by a Pulsed Hydrogen Exchange Study: Evidence for Competing Pathways for Unfolding. <i>Biochemistry</i> , 2002, 41, 2641-2654.	1.2	52
23	Polypeptide chain collapse and protein folding. <i>Archives of Biochemistry and Biophysics</i> , 2013, 531, 24-33.	1.4	52
24	Dependence of the Size of the Initially Collapsed Form During the Refolding of Barstar on Denaturant Concentration: Evidence for a Continuous Transition. <i>Journal of Molecular Biology</i> , 2005, 353, 704-718.	2.0	51
25	Dissecting the Non-specific and Specific Components of the Initial Folding Reaction of Barstar by Multi-site FRET Measurements. <i>Journal of Molecular Biology</i> , 2007, 370, 385-405.	2.0	51
26	Mechanistic Studies Unravel the Complexity Inherent in Tau Aggregation Leading to Alzheimer's Disease and the Tauopathies. <i>Biochemistry</i> , 2013, 52, 4107-4126.	1.2	51
27	Dissection of Conformational Conversion Events during Prion Amyloid Fibril Formation Using Hydrogen Exchange and Mass Spectrometry. <i>Journal of Molecular Biology</i> , 2013, 425, 3510-3521.	2.0	49
28	Quantitative analysis of the kinetics of denaturation and renaturation of barstar in the folding transition zone. <i>Protein Science</i> , 1994, 3, 1409-1417.	3.1	48
29	Unfolding Rates of Barstar Determined in Native and Low Denaturant Conditions Indicate the Presence of Intermediates. <i>Biochemistry</i> , 2002, 41, 1568-1578.	1.2	48
30	Conformational Conversion May Precede or Follow Aggregate Elongation on Alternative Pathways of Amyloid Protofibril Formation. <i>Journal of Molecular Biology</i> , 2009, 385, 1266-1276.	2.0	48
31	Structurally Distinct Amyloid Protofibrils Form on Separate Pathways of Aggregation of a Small Protein. <i>Biochemistry</i> , 2009, 48, 6441-6449.	1.2	47
32	Observation of Multistate Kinetics during the Slow Folding and Unfolding of Barstar. <i>Biochemistry</i> , 1999, 38, 9158-9168.	1.2	46
33	The slow folding reaction of barstar: the core tryptophan region attains tight packing before substantial secondary and tertiary structure formation and final compaction of the polypeptide chain 1 Edited by C. R. Matthews. <i>Journal of Molecular Biology</i> , 2000, 302, 479-495.	2.0	46
34	Characterization of the Folding and Unfolding Reactions of Single-Chain Monellin: Evidence for Multiple Intermediates and Competing Pathways. <i>Biochemistry</i> , 2007, 46, 11727-11743.	1.2	46
35	Differential Salt-induced Stabilization of Structure in the Initial Folding Intermediate Ensemble of Barstar. <i>Journal of Molecular Biology</i> , 2002, 324, 331-347.	2.0	43
36	Characterization of Intra-molecular Distances and Site-specific Dynamics in Chemically Unfolded Barstar: Evidence for Denaturant-dependent Non-random Structure. <i>Journal of Molecular Biology</i> , 2006, 359, 174-189.	2.0	42

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37	Exploring the Cooperativity of the Fast Folding Reaction of a Small Protein Using Pulsed Thiol Labeling and Mass Spectrometry. <i>Journal of Biological Chemistry</i> , 2007, 282, 37479-37491.	1.6	42
38	Evidence for Initial Non-specific Polypeptide Chain Collapse During the Refolding of the SH3 Domain of PI3 Kinase. <i>Journal of Molecular Biology</i> , 2010, 403, 430-445.	2.0	42
39	Partially Unfolded Forms of the Prion Protein Populated under Misfolding-promoting Conditions. <i>Journal of Biological Chemistry</i> , 2015, 290, 25227-25240.	1.6	42
40	Dynamics of the Core Tryptophan during the Formation of a Productive Molten Globule Intermediate of Barstar. <i>Biochemistry</i> , 2003, 42, 7986-8000.	1.2	41
41	Folding of Tryptophan Mutants of Barstar: Evidence for an Initial Hydrophobic Collapse on the Folding Pathway. <i>Biochemistry</i> , 1997, 36, 8602-8610.	1.2	39
42	Unfolding of a Small Protein Proceeds via Dry and Wet Globules and a Solvated Transition State. <i>Biophysical Journal</i> , 2013, 105, 2392-2402.	0.2	39
43	Surface Expansion Is Independent of and Occurs Faster than Core Solvation during the Unfolding of Barstar. <i>Biochemistry</i> , 2003, 42, 1551-1563.	1.2	37
44	Diffusional Barrier in the Unfolding of a Small Protein. <i>Journal of Molecular Biology</i> , 2007, 366, 1016-1028.	2.0	37
45	Mechanism of aggregation and membrane interactions of mammalian prion protein. <i>Biochimica Et Biophysica Acta - Biomembranes</i> , 2018, 1860, 1927-1935.	1.4	37
46	A five-residue motif for the design of domain swapping in proteins. <i>Nature Communications</i> , 2019, 10, 452.	5.8	37
47	Native state dynamics drive the unfolding of the SH3 domain of PI3 kinase at high denaturant concentration. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 20711-20716.	3.3	36
48	Unraveling the Molecular Mechanism of pH-Induced Misfolding and Oligomerization of the Prion Protein. <i>Journal of Molecular Biology</i> , 2016, 428, 1345-1355.	2.0	36
49	pH-Jump-Induced Folding and Unfolding Studies of Barstar: Evidence for Multiple Folding and Unfolding Pathways. <i>Biochemistry</i> , 2001, 40, 15267-15279.	1.2	35
50	Two structural subdomains of barstar detected by rapid mixing NMR measurement of amide hydrogen exchange. , 1998, 30, 295-308.		34
51	Resonance Raman Spectroscopic Measurements Delineate the Structural Changes that Occur during Tau Fibril Formation. <i>Biochemistry</i> , 2014, 53, 6550-6565.	1.2	34
52	Structural Effects of Multiple Pathogenic Mutations Suggest a Model for the Initiation of Misfolding of the Prion Protein. <i>Angewandte Chemie - International Edition</i> , 2015, 54, 7529-7533.	7.2	34
53	Folding subdomains of thioredoxin characterized by native-state hydrogen exchange. <i>Protein Science</i> , 2003, 12, 1719-1731.	3.1	29
54	Protein dynamics control proton transfer from bulk solvent to protein interior: A case study with a green fluorescent protein. <i>Protein Science</i> , 2005, 14, 1787-1799.	3.1	29

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55	Barrierless evolution of structure during the submillisecond refolding reaction of a small protein. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 7998-8003.	3.3	29
56	Native and nonnative conformational preferences in the urea-unfolded state of barstar. Protein Science, 2009, 13, 3085-3091.	3.1	28
57	Defining the Pathway of Worm-like Amyloid Fibril Formation by the Mouse Prion Protein by Delineation of the Productive and Unproductive Oligomerization Reactions. Biochemistry, 2011, 50, 1153-1161.	1.2	28
58	Identification of Multiple Folding Pathways of Monellin Using Pulsed Thiol Labeling and Mass Spectrometry. Biochemistry, 2011, 50, 3062-3074.	1.2	28
59	High-Energy Intermediates in Protein Unfolding Characterized by Thiol Labeling under Nativelike Conditions. Biochemistry, 2014, 53, 3608-3620.	1.2	28
60	Microsecond Rearrangements of Hydrophobic Clusters in an Initially Collapsed Globule Prime Structure Formation during the Folding of a Small Protein. Journal of Molecular Biology, 2016, 428, 3102-3117.	2.0	28
61	Modulation of the extent of structural heterogeneity in α -synuclein fibrils by the small molecule thioflavin T. Journal of Biological Chemistry, 2017, 292, 16891-16903.	1.6	28
62	Thermodynamic Characterization of the Unfolding of the Prion Protein. Biophysical Journal, 2014, 106, 410-420.	0.2	26
63	Tuning Cooperativity on the Free Energy Landscape of Protein Folding. Biochemistry, 2015, 54, 3431-3441.	1.2	26
64	Salt-Mediated Oligomerization of the Mouse Prion Protein Monitored by Real-Time NMR. Journal of Molecular Biology, 2017, 429, 1852-1872.	2.0	26
65	HX-ESI-MS and Optical Studies of the Unfolding of Thioredoxin Indicate Stabilization of a Partially Unfolded, Aggregation-Competent Intermediate at Low pH. Biochemistry, 2006, 45, 11226-11238.	1.2	25
66	Heterogeneity in Protein Folding and Unfolding Reactions. Chemical Reviews, 2022, 122, 8911-8935.	23.0	25
67	Revealing a Concealed Intermediate that Forms after the Rate-limiting Step of Refolding of the SH3 Domain of PI3 Kinase. Journal of Molecular Biology, 2009, 387, 348-362.	2.0	24
68	Effect of Salt on the Urea-Unfolded Form of Barstar Probed by Value Measurements. Biochemistry, 2004, 43, 11393-11402.	1.2	23
69	Critical Evaluation of the Two-State Model Describing the Equilibrium Unfolding of the PI3K SH3 Domain by Time-Resolved Fluorescence Resonance Energy Transfer. Biochemistry, 2013, 52, 9482-9496.	1.2	23
70	Multistage Unfolding of an SH3 Domain: An Initial Urea-Filled Dry Molten Globule Precedes a Wet Molten Globule with Non-Native Structure. Journal of Physical Chemistry B, 2014, 118, 6380-6392.	1.2	23
71	Multiple Kinetic Intermediates Accumulate during the Unfolding of Horse Cytochrome c in the Oxidized State. Biochemistry, 1998, 37, 9147-9155.	1.2	22
72	Identification and Structural Characterization of the Precursor Conformation of the Prion Protein which Directly Initiates Misfolding and Oligomerization. Journal of Molecular Biology, 2017, 429, 886-899.	2.0	22

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73	Amyloid Fibril Formation by the Chain B Subunit of Monellin Occurs by a Nucleation-Dependent Polymerization Mechanism. <i>Biochemistry</i> , 2014, 53, 1206-1217.	1.2	21
74	Pathogenic Mutations within the Disordered Palindromic Region of the Prion Protein Induce Structure Therein and Accelerate the Formation of Misfolded Oligomers. <i>Journal of Molecular Biology</i> , 2016, 428, 3935-3947.	2.0	21
75	Site-specific time-resolved FRET reveals local variations in the unfolding mechanism in an apparently two-state protein unfolding transition. <i>Physical Chemistry Chemical Physics</i> , 2018, 20, 3216-3232.	1.3	21
76	The Osmolyte TMAO Modulates Protein Folding Cooperativity by Altering Global Protein Stability. <i>Biochemistry</i> , 2018, 57, 5851-5863.	1.2	21
77	Equilibrium Unfolding Studies of Monellin: The Double-Chain Variant Appears To Be More Stable Than the Single-Chain Variant. <i>Biochemistry</i> , 2011, 50, 2434-2444.	1.2	20
78	Rise of the Helix from a Collapsed Globule during the Folding of Monellin. <i>Biochemistry</i> , 2015, 54, 5356-5365.	1.2	20
79	The Pathogenic Mutation T182A Converts the Prion Protein into a Molten Globule-like Conformation Whose Misfolding to Oligomers but Not to Fibrils Is Drastically Accelerated. <i>Biochemistry</i> , 2016, 55, 459-469.	1.2	20
80	The G126V Mutation in the Mouse Prion Protein Hinders Nucleation-Dependent Fibril Formation by Slowing Initial Fibril Growth and by Increasing the Critical Concentration. <i>Biochemistry</i> , 2017, 56, 5931-5942.	1.2	20
81	Structural mechanisms of oligomer and amyloid fibril formation by the prion protein. <i>Chemical Communications</i> , 2018, 54, 6230-6242.	2.2	20
82	Binding-induced folding under unfolding conditions: Switching between induced fit and conformational selection mechanisms. <i>Journal of Biological Chemistry</i> , 2019, 294, 16942-16952.	1.6	19
83	Kinetic Studies of the Folding of Heterodimeric Monellin: Evidence for Switching between Alternative Parallel Pathways. <i>Journal of Molecular Biology</i> , 2012, 420, 235-250.	2.0	18
84	Secondary Structural Change Can Occur Diffusely and Not Modularly during Protein Folding and Unfolding Reactions. <i>Journal of the American Chemical Society</i> , 2016, 138, 5866-5878.	6.6	18
85	Mechanistic and Structural Origins of the Asymmetric Barrier to Prion-like Cross-Seeding between Tau-3R and Tau-4R. <i>Journal of Molecular Biology</i> , 2018, 430, 5304-5312.	2.0	18
86	Monitoring site-specific conformational changes in real-time reveals a misfolding mechanism of the prion protein. <i>ELife</i> , 2019, 8, .	2.8	18
87	Heterologous expression, purification and characterization of heterodimeric monellin. <i>Protein Expression and Purification</i> , 2011, 76, 248-253.	0.6	17
88	Four-State Folding of a SH3 Domain: Salt-Induced Modulation of the Stabilities of the Intermediates and Native State. <i>Biochemistry</i> , 2012, 51, 4723-4734.	1.2	17
89	Transient Non-Native Burial of a Trp Residue Occurs Initially during the Unfolding of a SH3 Domain. <i>Biochemistry</i> , 2012, 51, 8226-8234.	1.2	16
90	Ruggedness in the Free Energy Landscape Dictates Misfolding of the Prion Protein. <i>Journal of Molecular Biology</i> , 2019, 431, 807-824.	2.0	16

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91	Microsecond sub-domain motions and the folding and misfolding of the mouse prion protein. <i>ELife</i> , 2019, 8, .	2.8	16
92	The Utilization of Competing Unfolding Pathways of Monellin Is Dictated by Enthalpic Barriers. <i>Biochemistry</i> , 2013, 52, 5770-5779.	1.2	15
93	Stopped-flow NMR measurement of hydrogen exchange rates in reduced horse cytochrome c under strongly destabilizing conditions. <i>Proteins: Structure, Function and Bioinformatics</i> , 1998, 32, 241-247.	1.5	14
94	Amino acid composition after loop deletion drives domain swapping. <i>Protein Science</i> , 2017, 26, 1994-2002.	3.1	13
95	Fluoroalcohol-Induced Modulation of the Pathway of Amyloid Protofibril Formation by Barstar. <i>Biochemistry</i> , 2011, 50, 805-819.	1.2	12
96	Difference in Fibril Core Stability between Two Tau Four-Repeat Domain Proteins: A Hydrogen-Deuterium Exchange Coupled to Mass Spectrometry Study. <i>Biochemistry</i> , 2013, 52, 8787-8789.	1.2	11
97	Stepwise Assembly of β^2 -Sheet Structure during the Folding of an SH3 Domain Revealed by a Pulsed Hydrogen Exchange Mass Spectrometry Study. <i>Biochemistry</i> , 2017, 56, 3754-3769.	1.2	11
98	Observation of Continuous Contraction and a Metastable Misfolded State during the Collapse and Folding of a Small Protein. <i>Journal of Molecular Biology</i> , 2019, 431, 3814-3826.	2.0	11
99	Modulation of the Extent of Cooperative Structural Change During Protein Folding by Chemical Denaturant. <i>Journal of Physical Chemistry B</i> , 2017, 121, 8263-8275.	1.2	10
100	Mapping Distinct Sequences of Structure Formation Differentiating Multiple Folding Pathways of a Small Protein. <i>Journal of the American Chemical Society</i> , 2021, 143, 1447-1457.	6.6	9
101	Mechanistic approaches to understand the prion-like propagation of aggregates of the human tau protein. <i>Biochimica Et Biophysica Acta - Proteins and Proteomics</i> , 2019, 1867, 922-932.	1.1	8
102	GroEL Can Unfold Late Intermediates Populated on the Folding Pathways of Monellin. <i>Journal of Molecular Biology</i> , 2009, 389, 759-775.	2.0	6
103	Chemical Denaturants Smoothen Ruggedness on the Free Energy Landscape of Protein Folding. <i>Biochemistry</i> , 2017, 56, 4053-4063.	1.2	6
104	A Dry Transition State More Compact Than the Native State Is Stabilized by Non-Native Interactions during the Unfolding of a Small Protein. <i>Biochemistry</i> , 2017, 56, 3699-3703.	1.2	5
105	Destabilization of polar interactions in the prion protein triggers misfolding and oligomerization. <i>Protein Science</i> , 2021, 30, 2258-2271.	3.1	5
106	The Lys 280 Gln mutation mimicking disease-linked acetylation of Lys 280 in tau extends the structural core of fibrils and modulates their catalytic properties. <i>Protein Science</i> , 2021, 30, 785-803.	3.1	4
107	Expression and purification of single cysteine-containing mutant variants of the mouse prion protein by oxidative refolding. <i>Protein Expression and Purification</i> , 2017, 140, 1-7.	0.6	3
108	Microsecond Dynamics During the Binding-induced Folding of an Intrinsically Disordered Protein. <i>Journal of Molecular Biology</i> , 2021, 433, 167254.	2.0	3

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109	Resolving Site-Specific Heterogeneity of the Unfolded State under Folding Conditions. Journal of Physical Chemistry Letters, 2021, 12, 3295-3302.	2.1	2
110	Structural Characterization of the Cooperativity of Unfolding of a Heterodimeric Protein using Hydrogen Exchange-Mass Spectrometry. Journal of Molecular Biology, 2021, 433, 167268.	2.0	2
111	Elongation of Fibrils Formed by a Tau Fragment is Inhibited by a Transient Dimeric Intermediate. Journal of Physical Chemistry B, 2022, 126, 3385-3397.	1.2	1
112	Introducing the Mechanical Forces in Biochemistry Special Issue. Biochemistry, 2019, 58, 4655-4656.	1.2	0