

Stefan Becker

List of Publications by Year in descending order

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124
papers

7,273
citations

76326

40
h-index

62596

80
g-index

136
all docs

136
docs citations

136
times ranked

8756
citing authors

#	ARTICLE	IF	CITATIONS
1	Recognition Dynamics Up to Microseconds Revealed from an RDC-Derived Ubiquitin Ensemble in Solution. <i>Science</i> , 2008, 320, 1471-1475.	12.6	963
2	Molecular-level secondary structure, polymorphism, and dynamics of full-length $\hat{\alpha}$ -synuclein fibrils studied by solid-state NMR. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 15871-15876.	7.1	589
3	Pre-fibrillar $\hat{\alpha}$ -synuclein variants with impaired $\hat{\beta}$ -structure increase neurotoxicity in Parkinson's disease models. <i>EMBO Journal</i> , 2009, 28, 3256-3268.	7.8	411
4	Toxin-induced conformational changes in a potassium channel revealed by solid-state NMR. <i>Nature</i> , 2006, 440, 959-962.	27.8	396
5	Optimized ratiometric calcium sensors for functional in vivo imaging of neurons and T lymphocytes. <i>Nature Methods</i> , 2014, 11, 175-182.	19.0	319
6	Structural Properties of Pore-Forming Oligomers of $\hat{\alpha}$ -Synuclein. <i>Journal of the American Chemical Society</i> , 2009, 131, 17482-17489.	13.7	191
7	Predictive Atomic Resolution Descriptions of Intrinsically Disordered hTau40 and $\hat{\alpha}$ -Synuclein in Solution from NMR and Small Angle Scattering. <i>Structure</i> , 2014, 22, 238-249.	3.3	171
8	Structural heterogeneity of $\hat{\alpha}$ -synuclein fibrils amplified from patient brain extracts. <i>Nature Communications</i> , 2019, 10, 5535.	12.8	153
9	A Concept for Rapid Protein-Structure Determination by Solid-State NMR Spectroscopy. <i>Angewandte Chemie - International Edition</i> , 2005, 44, 2089-2092.	13.8	144
10	Nuclear localization and phosphorylation modulate pathological effects of alpha-synuclein. <i>Human Molecular Genetics</i> , 2019, 28, 31-50.	2.9	131
11	Fasudil attenuates aggregation of $\hat{\alpha}$ -synuclein in models of Parkinson's disease. <i>Acta Neuropathologica Communications</i> , 2016, 4, 39.	5.2	123
12	The mechanism of sirtuin 2-mediated exacerbation of alpha-synuclein toxicity in models of Parkinson disease. <i>PLoS Biology</i> , 2017, 15, e2000374.	5.6	114
13	A Ligand-Induced Switch in the Periplasmic Domain of Sensor Histidine Kinase CitA. <i>Journal of Molecular Biology</i> , 2008, 377, 512-523.	4.2	110
14	High-resolution structure of the Shigella type-III secretion needle by solid-state NMR and cryo-electron microscopy. <i>Nature Communications</i> , 2014, 5, 4976.	12.8	110
15	Functional dynamics in the voltage-dependent anion channel. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 22546-22551.	7.1	97
16	Coupling of activation and inactivation gate in a K ⁺ -channel: potassium and ligand sensitivity. <i>EMBO Journal</i> , 2009, 28, 2825-2834.	7.8	94
17	Small molecule-mediated stabilization of vesicle-associated helical $\hat{\alpha}$ -synuclein inhibits pathogenic misfolding and aggregation. <i>Nature Communications</i> , 2014, 5, 5857.	12.8	91
18	Conkunitzin-S1 Is the First Member of a New Kunitz-type Neurotoxin Family. <i>Journal of Biological Chemistry</i> , 2005, 280, 23766-23770.	3.4	88

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19	Effect of Zinc Binding on β^2 -Amyloid Structure and Dynamics: Implications for $A\beta^2$ Aggregation. <i>Biophysical Journal</i> , 2011, 101, 1202-1211.	0.5	87
20	β -Synuclein interacts with the switch region of Rab8a in a Ser129 phosphorylation-dependent manner. <i>Neurobiology of Disease</i> , 2014, 70, 149-161.	4.4	84
21	Plasticity of the PAS domain and a potential role for signal transduction in the histidine kinase DcuS. <i>Nature Structural and Molecular Biology</i> , 2008, 15, 1031-1039.	8.2	82
22	High-Resolution Solid-State NMR Studies on Uniformly $[^{13}C,^{15}N]$ -Labeled Ubiquitin. <i>ChemBioChem</i> , 2005, 6, 1638-1647.	2.6	79
23	Cryogenic optical localization provides 3D protein structure data with Angstrom resolution. <i>Nature Methods</i> , 2017, 14, 141-144.	19.0	79
24	Structure of the NCoA-1/SRC-1 PAS-B Domain Bound to the LXXLL Motif of the STAT6 Transactivation Domain. <i>Journal of Molecular Biology</i> , 2004, 336, 319-329.	4.2	69
25	Toxins from cone snails: properties, applications and biotechnological production. <i>Applied Microbiology and Biotechnology</i> , 2008, 79, 1-9.	3.6	69
26	Interdomain Dynamics Explored by Paramagnetic NMR. <i>Journal of the American Chemical Society</i> , 2013, 135, 17111-17120.	13.7	68
27	The Native Conformation of the Human VDAC1 N-terminus. <i>Angewandte Chemie - International Edition</i> , 2010, 49, 1882-1885.	13.8	67
28	Backbone assignment of perdeuterated proteins by solid-state NMR using proton detection and ultrafast magic-angle spinning. <i>Nature Protocols</i> , 2017, 12, 764-782.	12.0	65
29	Atomic-resolution structure of cytoskeletal bactofilin by solid-state NMR. <i>Science Advances</i> , 2015, 1, e1501087.	10.3	64
30	3D NMR spectroscopy for resonance assignment and structure elucidation of proteins under MAS: novel pulse schemes and sensitivity considerations. <i>Journal of Magnetic Resonance</i> , 2005, 173, 64-74.	2.1	61
31	Structural Comparison of Mouse and Human β -Synuclein Amyloid Fibrils by Solid-State NMR. <i>Journal of Molecular Biology</i> , 2012, 420, 99-111.	4.2	61
32	Allosteric switch regulates protein-protein binding through collective motion. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, 3269-3274.	7.1	57
33	A Novel SNCA A30G Mutation Causes Familial Parkinson's Disease. <i>Movement Disorders</i> , 2021, 36, 1624-1633.	3.9	54
34	Interplay between tau and β -synuclein liquid-liquid phase separation. <i>Protein Science</i> , 2021, 30, 1326-1336.	7.6	53
35	Anle138b and related compounds are aggregation specific fluorescence markers and reveal high affinity binding to β -synuclein aggregates. <i>Biochimica Et Biophysica Acta - General Subjects</i> , 2015, 1850, 1884-1890.	2.4	52
36	High resolution observed in 800 MHz DNP spectra of extremely rigid type III secretion needles. <i>Journal of Biomolecular NMR</i> , 2016, 65, 121-126.	2.8	49

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37	Local and Global Dynamics in Intrinsically Disordered Synuclein. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 15262-15266.	13.8	49
38	Molecular Basis of Small-Molecule Binding to Î±-Synuclein. <i>Journal of the American Chemical Society</i> , 2022, 144, 2501-2510.	13.7	48
39	Endogenous oligodendroglial alpha-synuclein and TPPP/p25Î± orchestrate alpha-synuclein pathology in experimental multiple system atrophy models. <i>Acta Neuropathologica</i> , 2019, 138, 415-441.	7.7	45
40	Proton Detected Solid-State NMR of Membrane Proteins at 28 Tesla (1.2 GHz) and 100 kHz Magic-Angle Spinning. <i>Biomolecules</i> , 2021, 11, 752.	4.0	43
41	Insights into the molecular mechanism of amyloid filament formation: Segmental folding of Î±-synuclein on lipid membranes. <i>Science Advances</i> , 2021, 7, .	10.3	43
42	Human cyclophilin 40 unravels neurotoxic amyloids. <i>PLoS Biology</i> , 2017, 15, e2001336.	5.6	43
43	The PIP2 binding mode of the C2 domains of rabphilinâ€³A. <i>Protein Science</i> , 2008, 17, 1025-1034.	7.6	42
44	Correlating Calcium Binding, FÃ¶rster Resonance Energy Transfer, and Conformational Change in the Biosensor TN-XXL. <i>Biophysical Journal</i> , 2012, 102, 2401-2410.	0.5	42
45	Block of K_v1.7 potassium currents increases glucoseâ€stimulated insulin secretion. <i>EMBO Molecular Medicine</i> , 2012, 4, 424-434.	6.9	42
46	Structure and DNA-binding properties of the cytolysin regulator CylR2 from <i>Enterococcus faecalis</i> . <i>EMBO Journal</i> , 2004, 23, 3632-3642.	7.8	37
47	Cold denaturation of a protein dimer monitored at atomic resolution. <i>Nature Chemical Biology</i> , 2013, 9, 264-270.	8.0	37
48	Proton-detected MAS NMR experiments based on dipolar transfers for backbone assignment of highly deuterated proteins. <i>Journal of Magnetic Resonance</i> , 2014, 242, 180-188.	2.1	37
49	A fusion protein system for the recombinant production of short disulfide bond rich cystine knot peptides using barnase as a purification handle. <i>Protein Expression and Purification</i> , 2005, 39, 82-89.	1.3	36
50	Molecular Plasticity of the Human Voltage-Dependent Anion Channel Embedded Into a Membrane. <i>Structure</i> , 2016, 24, 585-594.	3.3	36
51	Structural Determinants for Ca ²⁺ and Phosphatidylinositol 4,5-Bisphosphate Binding by the C2A Domain of Rabphilin-3A. <i>Journal of Biological Chemistry</i> , 2008, 283, 35918-35928.	3.4	34
52	Conserved core of amyloid fibrils of wild type and A30P mutant Î±â€synuclein. <i>Protein Science</i> , 2011, 20, 387-395.	7.6	34
53	A nanobody-based fluorescent reporter reveals human Î±-synuclein in the cell cytosol. <i>Nature Communications</i> , 2020, 11, 2729.	12.8	33
54	Structural Integrity of the A147T Polymorph of Mammalian TSPO. <i>ChemBioChem</i> , 2015, 16, 1483-1489.	2.6	32

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55	Imidazoleâ€“Imidazole Hydrogen Bonding in the pH-Sensing Histidine Side Chains of Influenza A M2. <i>Journal of the American Chemical Society</i> , 2020, 142, 2704-2708.	13.7	32
56	High-Resolution 3D Structure Determination of Kaliotoxin by Solid-State NMR Spectroscopy. <i>PLoS ONE</i> , 2008, 3, e2359.	2.5	32
57	High-resolution structure determination of the CylR2 homodimer using paramagnetic relaxation enhancement and structure-based prediction of molecular alignment. <i>Journal of Biomolecular NMR</i> , 2008, 40, 1-13.	2.8	31
58	Hybrid Structure of the Typeâ€“1 Pilus of Uropathogenic <i>Escherichia coli</i> . <i>Angewandte Chemie - International Edition</i> , 2015, 54, 11691-11695.	13.8	30
59	Structure of sulfamidase provides insight into the molecular pathology of mucopolysaccharidosis IIIA. <i>Acta Crystallographica Section D: Biological Crystallography</i> , 2014, 70, 1321-1335.	2.5	29
60	Yeast reveals similar molecular mechanisms underlying alpha- and beta-synuclein toxicity. <i>Human Molecular Genetics</i> , 2016, 25, 275-290.	2.9	29
61	Amantadine inhibits known and novel ion channels encoded by SARS-CoV-2 in vitro. <i>Communications Biology</i> , 2021, 4, 1347.	4.4	29
62	Cooperative structure of the heterotrimeric pre-mRNA retention and splicing complex. <i>Nature Structural and Molecular Biology</i> , 2014, 21, 911-918.	8.2	28
63	Dynamic tuning of FRET in a green fluorescent protein biosensor. <i>Science Advances</i> , 2019, 5, eaaw4988.	10.3	28
64	Structure, gating and interactions of the voltage-dependent anion channel. <i>European Biophysics Journal</i> , 2021, 50, 159-172.	2.2	28
65	Tripartite phase separation of two signal effectors with vesicles priming B cell responsiveness. <i>Nature Communications</i> , 2020, 11, 848.	12.8	27
66	Sensory domain contraction in histidine kinase CitA triggers transmembrane signaling in the membrane-bound sensor. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017, 114, 3115-3120.	7.1	26
67	Probing Membrane Protein Insertion into Lipid Bilayers by Solidâ€“State NMR. <i>ChemPhysChem</i> , 2019, 20, 302-310.	2.1	24
68	Integrated analysis of the conformation of a protein-linked spin label by crystallography, EPR and NMR spectroscopy. <i>Journal of Biomolecular NMR</i> , 2011, 49, 111-119.	2.8	23
69	Conformational Flexibility in the Transmembrane Protein TSPO. <i>Chemistry - A European Journal</i> , 2015, 21, 16555-16563.	3.3	23
70	Molecular Basis of the Dynamic Structure of the TIM23 Complex in the Mitochondrial Intermembrane Space. <i>Structure</i> , 2014, 22, 1501-1511.	3.3	22
71	Pathophysiological Consequences of Neuronal α -Synuclein Overexpression: Impacts on Ion Homeostasis, Stress Signaling, Mitochondrial Integrity, and Electrical Activity. <i>Frontiers in Molecular Neuroscience</i> , 2018, 11, 49.	2.9	22
72	Production of recombinant Konkunitzin-S1 in <i>Escherichia coli</i> . <i>Protein Expression and Purification</i> , 2006, 47, 640-644.	1.3	21

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73	Fractional deuteration applied to biomolecular solid-state NMR spectroscopy. <i>Journal of Biomolecular NMR</i> , 2012, 52, 91-101.	2.8	21
74	Rapidly Signal-Enhanced Metabolites for Atomic Scale Monitoring of Living Cells with Magnetic Resonance. <i>Chemistry Methods</i> , 2022, 2, .	3.8	21
75	The Molecular Basis of the Interaction of Cyclophilin-A with α -Synuclein. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 5643-5646.	13.8	20
76	Synthesis and characterization of mu-conotoxin IIIa. <i>FEBS Journal</i> , 1989, 185, 79-84.	0.2	19
77	Alpha protons as NMR probes in deuterated proteins. <i>Journal of Biomolecular NMR</i> , 2019, 73, 81-91.	2.8	19
78	The adaptor protein CIN85 assembles intracellular signaling clusters for B cell activation. <i>Science Signaling</i> , 2016, 9, ra66.	3.6	18
79	Catalysis of proline isomerization and molecular chaperone activity in a tug-of-war. <i>Nature Communications</i> , 2020, 11, 6046.	12.8	18
80	Macromolecular assembly of the adaptor SLP-65 at intracellular vesicles in resting B cells. <i>Science Signaling</i> , 2014, 7, ra79.	3.6	17
81	The C2A-C2B Linker Defines the High Affinity Ca ²⁺ Binding Mode of Rabphilin-3A. <i>Journal of Biological Chemistry</i> , 2007, 282, 5015-5025.	3.4	16
82	Insights into Cholesterol/Membrane Protein Interactions Using Paramagnetic Solid-State NMR. <i>Chemistry - A European Journal</i> , 2018, 24, 17606-17611.	3.3	16
83	Small-Molecule-Induced Soluble Oligomers of α -Synuclein with Helical Structure. <i>Chemistry - A European Journal</i> , 2017, 23, 13010-13014.	3.3	14
84	Comparison of the 3D structures of mouse and human α -synuclein fibrils by solid-state NMR and STEM. <i>Journal of Structural Biology</i> , 2019, 206, 43-48.	2.8	14
85	Multiple Protective Roles of Nanoliposome-Incorporated Baicalein against Alpha-Synuclein Aggregates. <i>Advanced Functional Materials</i> , 2021, 31, 2007765.	14.9	14
86	Proline/arginine dipeptide repeat polymers derail protein folding in amyotrophic lateral sclerosis. <i>Nature Communications</i> , 2021, 12, 3396.	12.8	14
87	Structure and Gating Behavior of the Human Integral Membrane Protein VDAC1 in a Lipid Bilayer. <i>Journal of the American Chemical Society</i> , 2022, 144, 2953-2967.	13.7	14
88	Fast High-Resolution Protein Structure Determination by Using Unassigned NMR Data. <i>Angewandte Chemie - International Edition</i> , 2007, 46, 1176-1179.	13.8	13
89	Sensitivity-Enhanced Four-Dimensional Amide-Amide Correlation NMR Experiments for Sequential Assignment of Proline-Rich Disordered Proteins. <i>Journal of the American Chemical Society</i> , 2018, 140, 3518-3522.	13.7	13
90	A litmus test for classifying recognition mechanisms of transiently binding proteins. <i>Nature Communications</i> , 2022, 13, .	12.8	13

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91	A facile oxygen-17 NMR method to determine effective viscosity in dilute, molecularly crowded and confined aqueous media. <i>Chemical Communications</i> , 2019, 55, 12404-12407.	4.1	12
92	Enhancing NMR derived ensembles with kinetics on multiple timescales. <i>Journal of Biomolecular NMR</i> , 2020, 74, 27-43.	2.8	12
93	Towards a native environment: structure and function of membrane proteins in lipid bilayers by NMR. <i>Chemical Science</i> , 2021, 12, 14332-14342.	7.4	12
94	Pore-bound Water at the Key Residue Histidine 37 in Influenza M2. <i>Angewandte Chemie - International Edition</i> , 2021, 60, 24075-24079.	13.8	12
95	Cln5 represents a new type of cysteine-based <i>S</i> -depalmitoylase linked to neurodegeneration. <i>Science Advances</i> , 2022, 8, eabj8633.	10.3	12
96	Brain iron enrichment attenuates α -synuclein spreading after injection of preformed fibrils. <i>Journal of Neurochemistry</i> , 2021, 159, 554-573.	3.9	11
97	Insight into the molecular recognition mechanism of the coactivator NCoA1 by STAT6. <i>Scientific Reports</i> , 2017, 7, 16845.	3.3	10
98	Autophagy mediates the clearance of oligodendroglial SNCA/alpha-synuclein and TPPP/p25A in multiple system atrophy models. <i>Autophagy</i> , 2022, 18, 2104-2133.	9.1	10
99	Specific ¹³ C labeling of leucine, valine and isoleucine methyl groups for unambiguous detection of long-range restraints in protein solid-state NMR studies. <i>Journal of Magnetic Resonance</i> , 2015, 252, 10-19.	2.1	9
100	Protein resonance assignment by BSH-based 3D solid-state NMR experiments: A practical guide. <i>Magnetic Resonance in Chemistry</i> , 2020, 58, 445-465.	1.9	9
101	Biomolecular phase separation through the lens of sodium-23 NMR. <i>Protein Science</i> , 2021, 30, 1315-1325.	7.6	9
102	Modest Offset Difference Internuclear Selective Transfer via Homonuclear Dipolar Coupling. <i>Journal of Physical Chemistry Letters</i> , 2022, , 1540-1546.	4.6	9
103	Structure of the C2A domain of rabphilin-3A. <i>Acta Crystallographica Section D: Biological Crystallography</i> , 2006, 62, 793-799.	2.5	8
104	Asynchronous through-bond homonuclear isotropic mixing: application to carbon-carbon transfer in perdeuterated proteins under MAS. <i>Journal of Biomolecular NMR</i> , 2015, 63, 245-253.	2.8	8
105	Proton Transverse Relaxation as a Sensitive Probe for Structure Determination in Solid Proteins. <i>ChemPhysChem</i> , 2015, 16, 3791-3796.	2.1	8
106	Non-equilibrium hydrogen exchange for determination of H-bond strength and water accessibility in solid proteins. <i>Journal of Biomolecular NMR</i> , 2017, 68, 7-17.	2.8	8
107	Utilizing dipole-dipole cross-correlated relaxation for the measurement of angles between pairs of opposing C-H...C-H bonds in anti-parallel β -sheets. <i>Methods</i> , 2018, 138-139, 85-92.	3.8	8
108	Expression, purification, crystallization and preliminary crystallographic studies of the <i>Enterococcus faecalis</i> cytolysin repressor CylR2. <i>Acta Crystallographica Section D: Biological Crystallography</i> , 2004, 60, 746-748.	2.5	7

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109	Structures of intermediates during RES complex assembly. <i>Scientific Reports</i> , 2015, 5, 12545.	3.3	7
110	High-power ¹ H composite pulse decoupling provides artifact free exchange-mediated saturation transfer (EST) experiments. <i>Journal of Magnetic Resonance</i> , 2016, 269, 65-69.	2.1	7
111	Direct Detection of Bound Ammonium Ions in the Selectivity Filter of Ion Channels by Solid-State NMR. <i>Journal of the American Chemical Society</i> , 2022, 144, 4147-4157.	13.7	7
112	Characterization of H/D exchange in type 1 pili by proton-detected solid-state NMR and molecular dynamics simulations. <i>Journal of Biomolecular NMR</i> , 2019, 73, 281-291.	2.8	5
113	Measurement of backbone hydrogen-deuterium exchange in the type III secretion system needle protein PrgI by solid-state NMR. <i>Journal of Magnetic Resonance</i> , 2017, 283, 110-116.	2.1	4
114	Low-Expressing Synucleinopathy Mouse Models Based on Oligomer-Forming Mutations and C-Terminal Truncation of I \pm -Synuclein. <i>Frontiers in Neuroscience</i> , 2021, 15, 643391.	2.8	4
115	Early Divergence in Misfolding Pathways of Amyloid β Peptides. <i>ChemPhysChem</i> , 2021, 22, 2158-2163.	2.1	4
116	Combined High-Pressure and Multiquantum NMR and Molecular Simulation Propose a Role for N-Terminal Salt Bridges in Amyloid-Beta. <i>Journal of Physical Chemistry Letters</i> , 2021, 12, 9933-9939.	4.6	4
117	The calcium-free form of atorvastatin inhibits amyloid- β (1 \rightarrow 42) aggregation in vitro. <i>Journal of Biological Chemistry</i> , 2022, 298, 101662.	3.4	4
118	Membrane-embedded TSPO: an NMR view. <i>European Biophysics Journal</i> , 2021, 50, 173-180.	2.2	3
119	NMR-Based Detection of Hydrogen/Deuterium Exchange in Liposome-Embedded Membrane Proteins. <i>PLoS ONE</i> , 2014, 9, e112374.	2.5	3
120	¹ H, ¹⁵ N, and ¹³ C Resonance Assignment of the C2A Domain of Rabphilin3A. <i>Journal of Biomolecular NMR</i> , 2006, 36, 20-20.	2.8	2
121	Backbone Torsion Angle Determination Using Proton Detected Magic-Angle Spinning Nuclear Magnetic Resonance. <i>Journal of Physical Chemistry Letters</i> , 2022, 13, 18-24.	4.6	2
122	Proton Transverse Relaxation as a Sensitive Probe for Structure Determination in Solid Proteins. <i>ChemPhysChem</i> , 2015, 16, 3743-3743.	2.1	1
123	Three-dimensional angstrom resolution in fluorescence microscopy: Insight into protein structure. , 2017, , .		0
124	The Molecular Basis of the Interaction of Cyclophilin ϵ ...A with I \pm -Synuclein. <i>Angewandte Chemie</i> , 2020, 132, 5692-5695.	2.0	0