Martin Caffrey

List of Publications by Year
in descending order

116 papers	13,602 citations	30070 54 h-index	22166 113 g-index
117 all docs	117 docs citations	117 times ranked	11228 citing authors

#	Article	IF	Citations
1	Crystal structure of the Î²2 adrenergic receptorâ€“Gs protein complex. Nature, 2011, 477, 549-555.	27.8	2,712
2	Structure and function of an irreversible agonist-Î²2 adrenoceptor complex. Nature, 2011, 469, 236-240.	27.8	741
3	Crystal structure of rhodopsin bound to arrestin by femtosecond X-ray laser. Nature, 2015, 523, 561-567.	27.8	683
4	Crystallizing membrane proteins using lipidic mesophases. Nature Protocols, 2009, 4, 706-731.	12.0	622
5	The phase diagram of the monoolein/water system: metastability and equilibrium aspects. Biomaterials, 2000, 21, 223-234.	11.4	584
6	Lipidic cubic phase injector facilitates membrane protein serial femtosecond crystallography. Nature Communications, 2014, 5, 3309.	12.8	505
7	Serial Femtosecond Crystallography of G Proteinâ€“Coupled Receptors. Science, 2013, 342, 1521-1524.	12.6	424
8	Membrane protein crystallization. Journal of Structural Biology, 2003, 142, 108-132.	2.8	309
9	MemProtMD: Automated Insertion of Membrane Protein Structures into Explicit Lipid Membranes. Structure, 2015, 23, 1350-1361.	3.3	257
10	Room to Move: Crystallizing Membrane Proteins in Swollen Lipidic Mesophases. Journal of Molecular Biology, 2006, 357, 1605-1618.	4.2	254
11	Fluorescence quenching of model membranes. 3. Relationship between calcium adenosinetriphosphatase enzyme activity and the affinity of the protein for phosphatidylcholines with different acyl chain characteristics. Biochemistry, 1981, 20, 1949-1961.	2.5	242
12	A comprehensive review of the lipid cubic phase or<i>in meso</i>method for crystallizing membrane and soluble proteins and complexes. Acta Crystallographica Section F, Structural Biology Communications, 2015, 71, 3-18.	0.8	217
13	The Temperature-Composition Phase Diagram and Mesophase Structure Characterization of the Monoolein/Water System. Journal De Physique II, 1996, 6, 723-751.	0.9	204
14	Crystallizing Membrane Proteins for Structure Determination: Use of Lipidic Mesophases. Annual Review of Biophysics, 2009, 38, 29-51.	10.0	203
15	Phases and phase transitions of the hydrated phosphatidylethanolamines. Chemistry and Physics of Lipids, 1994, 69, 1-34.	3.2	191
16	A lipidâ€™s eye view of membrane protein crystallization in mesophases. Current Opinion in Structural Biology, 2000, 10, 486-497.	5.7	171
17	Lipid-Sugar Interactions. Plant Physiology, 1988, 86, 754-758.	4.8	169
18	A simple mechanical mixer for small viscous lipid-containing samples. Chemistry and Physics of Lipids, 1998, 95, 11-21.	3.2	152

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19	Detergent-free mass spectrometry of membrane protein complexes. Nature Methods, 2013, 10, 1206-1208.	19.0	152
20	Membrane Protein Crystallization In Meso: Lipid Type-Tailoring of the Cubic Phase. Biophysical Journal, 2002, 83, 3393-3407.	0.5	151
21	Molecular Organization of Cholesterol in Polyunsaturated Membranes: Microdomain Formation. Biophysical Journal, 2002, 82, 285-298.	0.5	146
22	Order from disorder, corralling cholesterol with chaotic lipidsThe role of polyunsaturated lipids in membrane raft formation. Chemistry and Physics of Lipids, 2004, 132, 79-88.	3.2	145
23	Kinetics and mechanism of transitions involving the lamellar, cubic, inverted hexagonal and fluid isotropic phases of hydrated monoacylglycerides monitored by time-resolved x-ray diffraction. Biochemistry, 1987, 26, 6349-6363.	2.5	144
24	Specific Radiation Damage Can Be Used to Solve Macromolecular Crystal Structures. Structure, 2003, 11, 217-224.	3.3	141
25	A robotic system for crystallizing membrane and soluble proteins in lipidic mesophases. Acta Crystallographica Section D: Biological Crystallography, 2004, 60, 1795-1807.	2.5	132
26	Fast native-SAD phasing for routine macromolecular structure determination. Nature Methods, 2015, 12, 131-133.	19.0	120
27	Structural insights into electron transfer in caa3-type cytochrome oxidase. Nature, 2012, 487, 514-518.	27.8	119
28	Structural basis for polyspecificity in the <scp>POT</scp> family of protonâ€coupled oligopeptide transporters. EMBO Reports, 2014, 15, 886-893.	4.5	118
29	LIPIDAT: A database of lipid phase transition temperatures and enthalpy changes. DMPC data subset analysis. Chemistry and Physics of Lipids, 1992, 61, 1-109.	3.2	117
30	The curvature elastic-energy function of the lipidâ€“water cubic mesophase. Nature, 1994, 368, 224-226.	27.8	112
31	Structural basis of lipoprotein signal peptidase II action and inhibition by the antibiotic globomycin. Science, 2016, 351, 876-880.	12.6	111
32	Membrane Protein Structure Determination Using Crystallography and Lipidic Mesophases: Recent Advances and Successes. Biochemistry, 2012, 51, 6266-6288.	2.5	106
33	<i>In meso in situ</i> serial X-ray crystallography of soluble and membrane proteins. Acta Crystallographica Section D: Biological Crystallography, 2015, 71, 1238-1256.	2.5	103
34	Molecular mechanism for the crystallization of bacteriorhodopsin in lipidic cubic phases. FEBS Letters, 2001, 504, 179-186.	2.8	99
35	Gating Topology of the Proton-Coupled Oligopeptide Symporters. Structure, 2015, 23, 290-301.	3.3	98
36	An index of lipid phase diagrams. Chemistry and Physics of Lipids, 2002, 115, 107-219.	3.2	96

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37	Lyotropic and Thermotropic Phase Behavior of Hydrated Monoacylglycerols:â€‰ Structure Characterization of Monovaccenin. Journal of Physical Chemistry B, 1998, 102, 4819-4829.	2.6	95
38	Crystal structure of the integral membrane diacylglycerol kinase. Nature, 2013, 497, 521-524.	27.8	93
39	<i>In meso in situ</i>serial X-ray crystallography of soluble and membrane proteins at cryogenic temperatures. Acta Crystallographica Section D: Structural Biology, 2016, 72, 93-112.	2.3	91
40	Crystallization Screens: Compatibility with the Lipidic Cubic Phase for in Meso Crystallization of Membrane Proteins. Biophysical Journal, 2001, 81, 225-242.	0.5	89
41	Membrane Protein Crystallization in Lipidic Mesophases with Tailored Bilayers. Structure, 2004, 12, 2113-2124.	3.3	89
42	Molecular Organization of Cholesterol in Unsaturated Phosphatidylethanolamines:Â X-ray Diffraction and Solid State2H NMR Reveal Differences with Phosphatidylcholines. Journal of the American Chemical Society, 2006, 128, 5375-5383.	13.7	83
43	Insights into the Mode of Action of a Putative Zinc Transporter CzrB in Thermus thermophilus. Structure, 2008, 16, 1378-1388.	3.3	83
44	Proton movement and coupling in the POT family of peptide transporters. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 13182-13187.	7.1	81
45	Ultrafast Hydration Dynamics in the Lipidic Cubic Phase:Â Discrete Water Structures in Nanochannels. Journal of Physical Chemistry B, 2006, 110, 21994-22000.	2.6	75
46	Rational design of lipid for membrane protein crystallization. Journal of Structural Biology, 2004, 148, 169-175.	2.8	72
47	Structural studies of membranes and surface layers up to 1,000 Å... thick using X-ray standing waves. Nature, 1991, 354, 377-380.	27.8	65
48	On the Mechanism of Membrane Protein Crystallization in Lipidic Mesophases. Crystal Growth and Design, 2008, 8, 4244-4254.	3.0	65
49	Unit-cell volume change as a metric ofÂradiation damage in crystals of macromolecules. Journal of Synchrotron Radiation, 2002, 9, 355-360.	2.4	63
50	Crystal structure of the human 5-HT1B serotonin receptor bound to an inverse agonist. Cell Discovery, 2018, 4, 12.	6.7	63
51	Lipid cubic phase as a membrane mimetic for integral membrane protein enzymes. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 8639-8644.	7.1	62
52	Phases and phase transitions of the glycoglycerolipids. Chemistry and Physics of Lipids, 1994, 69, 181-207.	3.2	61
53	Crystallizing Membrane Proteins in the Lipidic Mesophase. Experience with Human Prostaglandin E2 Synthase 1 and an Evolving Strategy. Crystal Growth and Design, 2014, 14, 2034-2047.	3.0	61
54	Nano-volume plates with excellent optical properties for fast, inexpensive crystallization screening of membrane proteins. Journal of Applied Crystallography, 2003, 36, 1372-1377.	4.5	58

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55	Membrane protein crystallization in lipidic mesophases. A mechanism study using X-ray microdiffraction. Faraday Discussions, 2007, 136, 195.	3.2	54
56	Structural insights into the mechanism of the membrane integral N-acyltransferase step in bacterial lipoprotein synthesis. Nature Communications, 2017, 8, 15952.	12.8	52
57	Crystallizing Membrane Proteins in Lipidic Mesophases. A Host Lipid Screen. Crystal Growth and Design, 2011, 11, 530-537.	3.0	48
58	Why GPCRs behave differently in cubic and lamellar lipidic mesophases. Journal of the American Chemical Society, 2012, 134, 15858-15868.	13.7	47
59	Crystal structure of undecaprenyl-pyrophosphate phosphatase and its role in peptidoglycan biosynthesis. Nature Communications, 2018, 9, 1078.	12.8	47
60	A conformational landscape for alginate secretion across the outer membrane of<i>Pseudomonas aeruginosa</i>. Acta Crystallographica Section D: Biological Crystallography, 2014, 70, 2054-2068.	2.5	46
61	Crystallizing Transmembrane Peptides in Lipidic Mesophases. Biophysical Journal, 2010, 99, L23-L25.	0.5	45
62	Phase behavior of the monoerucin/water system. Chemistry and Physics of Lipids, 1999, 100, 55-79.	3.2	43
63	Crystallizing membrane proteins for structureâ€"function studies using lipidic mesophases. Biochemical Society Transactions, 2011, 39, 725-732.	3.4	42
64	Data-collection strategy for challenging native SAD phasing. Acta Crystallographica Section D: Structural Biology, 2016, 72, 421-429.	2.3	42
65	Interactions of Tryptophan, Tryptophan Peptides, and Tryptophan Alkyl Esters at Curved Membrane Interfacesâ€. Biochemistry, 2006, 45, 11713-11726.	2.5	41
66	Crystallizing Membrane Proteins for Structure Determination using Lipidic Mesophases. Journal of Visualized Experiments, 2010, , .	0.3	41
67	Structural basis for ion selectivity revealed by high-resolution crystal structure of Mg2+ channel MgtE. Nature Communications, 2014, 5, 5374.	12.8	41
68	In meso crystal structure and docking simulations suggest an alternative proteoglycan binding site in the OpcA outer membrane adhesin. Proteins: Structure, Function and Bioinformatics, 2008, 71, 24-34.	2.6	40
69	Harvesting and Cryo-cooling Crystals of Membrane Proteins Grown in Lipidic Mesophases for Structure Determination by Macromolecular Crystallography. Journal of Visualized Experiments, 2012, , e4001.	0.3	40
70	Use of a Robot for High-throughput Crystallization of Membrane Proteins in Lipidic Mesophases. Journal of Visualized Experiments, 2012, , e4000.	0.3	39
71	Fast two-dimensional grid and transmission X-ray microscopy scanning methods for visualizing and characterizing protein crystals. Journal of Applied Crystallography, 2016, 49, 944-952.	4.5	38
72	Too hot to handle? Synchrotron X-ray damage of lipid membranes and mesophases. Journal of Synchrotron Radiation, 2002, 9, 333-341.	2.4	37

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73	Host Lipid and Temperature as Important Screening Variables for Crystallizing Integral Membrane Proteins in Lipidic Mesophases. Trials with Diacylglycerol Kinase. Crystal Growth and Design, 2013, 13, 2846-2857.	3.0	37
74	A simple and inexpensive nanoliter-volume dispenser for highly viscous materials used in membrane protein crystallization. Journal of Applied Crystallography, 2005, 38, 398-400.	4.5	34
75	A fast, simple and robust protocol for growing crystals in the lipidic cubic phase. Journal of Applied Crystallography, 2012, 45, 1330-1333.	4.5	32
76	Cell-free expression and in meso crystallisation of an integral membrane kinase for structure determination. Cellular and Molecular Life Sciences, 2014, 71, 4895-4910.	5.4	32
77	The cubicon method for concentrating membrane proteins in the cubic mesophase. Nature Protocols, 2017, 12, 1745-1762.	12.0	31
78	Ternary structure reveals mechanism of a membrane diacylglycerol kinase. Nature Communications, 2015, 6, 10140.	12.8	30
79	Structures of lipoprotein signal peptidase II from Staphylococcus aureus complexed with antibiotics globomycin and myxovirescin. Nature Communications, 2020, 11, 140.	12.8	29
80	In situ serial crystallography for rapid de novo membrane protein structure determination. Communications Biology, 2018, 1, 124.	4.4	27
81	â€˜Hit and runâ€™ serial femtosecond crystallography of a membrane kinase in the lipid cubic phase. Philosophical Transactions of the Royal Society B: Biological Sciences, 2014, 369, 20130621.	4.0	25
82	X-ray Crystal Structures of the Influenza M2 Proton Channel Drug-Resistant V27A Mutant Bound to a Spiro-Adamantyl Amine Inhibitor Reveal the Mechanism of Adamantane Resistance. Biochemistry, 2020, 59, 627-634.	2.5	23
83	Picolitre-scale crystallization of membrane proteins. Journal of Applied Crystallography, 2006, 39, 604-606.	4.5	22
84	Renaturing Membrane Proteins in the Lipid Cubic Phase, a Nanoporous Membrane Mimetic. Scientific Reports, 2014, 4, 5806.	3.3	22
85	Manipulating Mesophase Behavior of Hydrated DHPE:Â An X-ray Diffraction Study of Temperature and Pressure Effects. The Journal of Physical Chemistry, 1996, 100, 299-306.	2.9	21
86	Experimental phasing for structure determination using membrane-protein crystals grown by the lipid cubic phase method. Acta Crystallographica Section D: Biological Crystallography, 2015, 71, 104-122.	2.5	20
87	Crystal structure and biochemical characterization of the transmembrane PAP2 type phosphatidylglycerol phosphate phosphatase from Bacillus subtilis. Cellular and Molecular Life Sciences, 2017, 74, 2319-2332.	5.4	20
88	Structure and Functional Characterization of Membrane Integral Proteins in the Lipid Cubic Phase. Journal of Molecular Biology, 2020, 432, 5104-5123.	4.2	20
89	A simple apparatus for timeâ€resolved xâ€ray diffraction biostructure studies using static and oscillating pressures and pressure jumps. Review of Scientific Instruments, 1993, 64, 383-389.	1.3	19
90	Interlamellar Transition Mechanism in Model Membranes. The Journal of Physical Chemistry, 1996, 100, 5608-5610.	2.9	19

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91	Membrane Protein Crystallization in Lipidic Mesophases. Hosting Lipid Effects on the Crystallization and Structure of a Transmembrane Peptide. Crystal Growth and Design, 2011, 11, 1182-1192.	3.0	19
92	Protein and Lipid Interactions Driving Molecular Mechanisms of <i>in meso</i> Crystallization. Journal of the American Chemical Society, 2014, 136, 3271-3284.	13.7	17
93	Cell-Free Production of Membrane Proteins in Escherichia coli Lysates for Functional and Structural Studies. Methods in Molecular Biology, 2016, 1432, 1-21.	0.9	17
94	Membrane (and Soluble) Protein Stability and Binding Measurements in the Lipid Cubic Phase Using Label-Free Differential Scanning Fluorimetry. Analytical Chemistry, 2018, 90, 12152-12160.	6.5	16
95	Bacterial Lipoprotein Posttranslational Modifications. New Insights and Opportunities for Antibiotic and Vaccine Development. Frontiers in Microbiology, 2021, 12, 788445.	3.5	10
96	<i>In meso</i> crystallogenesis. Compatibility of the lipid cubic phase with the synthetic digitonin analogue, glyco-diosgenin. Journal of Applied Crystallography, 2020, 53, 530-535.	4.5	9
97	Preparation of 1â€Monoacylglycerols via the Suzukiâ€Miyaura Reaction: 2,3â€Dihydroxypropyl (<scp>) Tj ETQq1 1 0.784314 rgBT /Ove		7
98	3D-printed holders for<i>in meso in situ</i>fixed-target serial X-ray crystallography. Journal of Applied Crystallography, 2020, 53, 854-859.	4.5	7
99	Interaction of Polyunsaturated Fatty Acids with Cholesterol: A Role in Lipid Raft Phase Separation. Macromolecular Symposia, 2005, 219, 73-84.	0.7	6
100	Undecaprenol kinase: Function, mechanism and substrate specificity of a potential antibiotic target. European Journal of Medicinal Chemistry, 2021, 210, 113062.	5.5	6
101	Structural basis of the membrane intramolecular transacylase reaction responsible for lyso-form lipoprotein synthesis. Nature Communications, 2021, 12, 4254.	12.8	6
102	Xâ€ray standing waves as probes of surface structure: Incident beam energy effects. Journal of Applied Physics, 1995, 78, 2311-2322.	2.5	5
103	From plant to probe: semi-synthesis of labelled undecaprenol analogues allows rapid access to probes for antibiotic targets. Chemical Communications, 2020, 56, 8603-8606.	4.1	5
104	Cloning, expression, purification, crystallization and preliminary X-ray diffraction of a lysine-specific permease fromPseudomonas aeruginosa. Acta Crystallographica Section F, Structural Biology Communications, 2014, 70, 1362-1367.	0.8	4
105	9.8 MAG: A New Host Lipid for <i>In Meso</i> (Lipid Cubic Phase) Crystallization of Integral Membrane Proteins. Crystal Growth and Design, 2021, 21, 490-500.	3.0	4
106	Overview of the 13th International Conference on the Crystallization of Biological Macromolecules. Crystal Growth and Design, 2011, 11, 4723-4730.	3.0	3
107	The lipid cubic phase orin mesomethod for crystallizing proteins. Bushings for better manual dispensing. Journal of Applied Crystallography, 2014, 47, 1804-1806.	4.5	3
108	Effects of 2-monoacylglycerol on <i>in meso</i> crystallization and the crystal structures of integral membrane proteins. Crystal Growth and Design, 2020, 20, 5444-5454.	3.0	3

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109	In Meso In Situ Serial X-Ray Crystallography (IMISX): A Protocol for Membrane Protein Structure Determination at the Swiss Light Source. Methods in Molecular Biology, 2020, 2127, 293-319.	0.9	3
110	Structure and Function of Bacterial Cytochrome c Oxidases. Advances in Photosynthesis and Respiration, 2016, , 307-329.	1.0	2
111	Crystallizing Membrane Proteins for Structure-Function Studies Using Lipidic Mesophases. NATO Science for Peace and Security Series A: Chemistry and Biology, 2013, , 33-46.	0.5	2
112	J D Bernal and the genesis of structural biology. Journal of Physics: Conference Series, 2007, 57, 17-28.	0.4	1
113	Quantitative Comparison of GPCR Interactions with the Lipid Bilayer of the Cubic and Lamellar Mesophases. Biophysical Journal, 2012, 102, 467a-468a.	0.5	1
114	Low-dose <i>in situ</i> prelocation of protein microcrystals by 2D X-ray phase-contrast imaging for serial crystallography. IUCrJ, 2020, 7, 1131-1141.	2.2	1
115	Editorial overview: Membranes. Current Opinion in Structural Biology, 2017, 45, vii-ix.	5.7	0
116	The Lipid Cubic Phase as a Medium for the Growth of Membrane Protein Microcrystals. , 2018, , 87-107.		0