Irene A Chen

List of Publications by Year
in descending order

64 papers	4,556 citations	201674 27 h-index	128289 60 g-index
76 all docs	76 docs citations	76 times ranked	5103 citing authors

#	Article	IF	Citations
1	Dissecting Temporal and Spatial Control of Cytokinesis with a Myosin II Inhibitor. Science, 2003, 299, 1743-1747.	12.6	1,259
2	The Emergence of Competition Between Model Protocells. Science, 2004, 305, 1474-1476.	12.6	373
3	Spontaneous network formation among cooperative RNA replicators. Nature, 2012, 491, 72-77.	27.8	299
4	RNA Catalysis in Model Protocell Vesicles. Journal of the American Chemical Society, 2005, 127, 13213-13219.	13.7	242
5	A Kinetic Study of the Growth of Fatty Acid Vesicles. Biophysical Journal, 2004, 87, 988-998.	0.5	211
6	From Self-Assembled Vesicles to Protocells. Cold Spring Harbor Perspectives in Biology, 2010, 2, a002170-a002170.	5.5	205
7	Membrane growth can generate a transmembrane pH gradient in fatty acid vesicles. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 7965-7970.	7.1	143
8	Comprehensive experimental fitness landscape and evolutionary network for small RNA. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 14984-14989.	7.1	137
9	The RNA World as a Model System to Study the Origin of Life. Current Biology, 2015, 25, R953-R963.	3.9	114
10	Effect of Stalling after Mismatches on the Error Catastrophe in Nonenzymatic Nucleic Acid Replication. Journal of the American Chemical Society, 2010, 132, 5880-5885.	13.7	106
11	Rapid Colorimetric Detection of Bacterial Species through the Capture of Gold Nanoparticles by Chimeric Phages. ACS Nano, 2019, 13, 1244-1252.	14.6	92
12	Microbial predictors of healing and short-term effect of debridement on the microbiome of chronic wounds. Npj Biofilms and Microbiomes, 2020, 6, 21.	6.4	86
13	Controlled phage therapy by photothermal ablation of specific bacterial species using gold nanorods targeted by chimeric phages. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 1951-1961.	7.1	86
14	Inhibition of Bacterial Conjugation by Phage M13 and Its Protein g3p: Quantitative Analysis and Model. PLoS ONE, 2011, 6, e19991.	2.5	76
15	A Strategically Positioned Cation Is Crucial for Efficient Catalysis by Chorismate Mutase. Journal of Biological Chemistry, 2000, 275, 36832-36838.	3.4	67
16	The prebiotic evolutionary advantage of transferring genetic information from RNA to DNA. Nucleic Acids Research, 2011, 39, 8135-8147.	14.5	67
17	Mapping a Systematic Ribozyme Fitness Landscape Reveals a Frustrated Evolutionary Network for Self-Aminoacylating RNA. Journal of the American Chemical Society, 2019, 141, 6213-6223.	13.7	67
18	Cascade of Reduced Speed and Accuracy after Errors in Enzyme-Free Copying of Nucleic Acid Sequences. Journal of the American Chemical Society, 2013, 135, 354-366.	13.7	64

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19	Lipid vesicles chaperone an encapsulated RNA aptamer. Nature Communications, 2018, 9, 2313.	12.8	47
20	Prebiotically plausible mechanisms increase compositional diversity of nucleic acid sequences. Nucleic Acids Research, 2012, 40, 4711-4722.	14.5	46
21	From Prelife to Life: How Chemical Kinetics Become Evolutionary Dynamics. Accounts of Chemical Research, 2012, 45, 2088-2096.	15.6	43
22	Molecular Crowding and Early Evolution. Origins of Life and Evolution of Biospheres, 2014, 44, 319-324.	1.9	41
23	Molecular Fitness Landscapes from High-Coverage Sequence Profiling. Annual Review of Biophysics, 2019, 48, 1-18.	10.0	40
24	Analysis of Evolutionarily Independent Protein-RNA Complexes Yields a Criterion to Evaluate the Relevance of Prebiotic Scenarios. Current Biology, 2018, 28, 526-537.e5.	3.9	39
25	Treatment of Wound Infections in a Mouse Model Using Zn²⁺-Releasing Phage Bound to Gold Nanorods. ACS Nano, 2022, 16, 4756-4774.	14.6	38
26	GE PRIZE-WINNING ESSAY: The Emergence of Cells During the Origin of Life. Science, 2006, 314, 1558-1559.	12.6	36
27	The Paradox of Dual Roles in the RNA World: Resolving the Conflict Between Stable Folding and Templating Ability. Journal of Molecular Evolution, 2013, 77, 55-63.	1.8	36
28	Chimeric Phage Nanoparticles for Rapid Characterization of Bacterial Pathogens: Detection in Complex Biological Samples and Determination of Antibiotic Sensitivity. ACS Sensors, 2020, 5, 1491-1499.	7.8	33
29	Genetic Drift Suppresses Bacterial Conjugation in Spatially Structured Populations. Biophysical Journal, 2014, 106, 944-954.	0.5	31
30	Phage engineering and the evolutionary arms race. Current Opinion in Biotechnology, 2021, 68, 23-29.	6.6	30
31	Selection for Replicases in Protocells. PLoS Computational Biology, 2013, 9, e1003051.	3.2	27
32	Experimental fitness landscapes to understand the molecular evolution of RNA-based life. Current Opinion in Chemical Biology, 2014, 22, 35-39.	6.1	27
33	Shrink-Wrap Vesicles. Langmuir, 2005, 21, 12124-12129.	3.5	25
34	Analysis of in vitro evolution reveals the underlying distribution of catalytic activity among random sequences. Nucleic Acids Research, 2017, 45, 8167-8179.	14.5	24
35	Promiscuous Ribozymes and Their Proposed Role in Prebiotic Evolution. Chemical Reviews, 2020, 120, 4879-4897.	47.7	22
36	Encapsulation of ribozymes inside model protocells leads to faster evolutionary adaptation. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	22

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37	Cell Division: Breaking Up Is Easy toÂDo. Current Biology, 2009, 19, R327-R328.	3.9	21
38	The basic reproductive ratio of life. Journal of Theoretical Biology, 2010, 263, 317-327.	1.7	18
39	PacBio sequencing output increased through uniform and directional fivefold concatenation. Scientific Reports, 2021, 11, 18065.	3.3	18
40	Self-cleaving ribozymes: substrate specificity and synthetic biology applications. RSC Chemical Biology, 2021, 2, 1370-1383.	4.1	18
41	Improved single-swab sample preparation for recovering bacterial and phage DNA from human skin and wound microbiomes. BMC Microbiology, 2019, 19, 214.	3.3	14
42	EasyDIVER: A Pipeline for Assembling and Counting High-Throughput Sequencing Data from In Vitro Evolution of Nucleic Acids or Peptides. Journal of Molecular Evolution, 2020, 88, 477-481.	1.8	14
43	The Chronic Wound Phageome: Phage Diversity and Associations with Wounds and Healing Outcomes. Microbiology Spectrum, 2022, 10, e0277721.	3.0	14
44	Protocells. Current Biology, 2020, 30, R482-R485.	3.9	12
45	Vesicle encapsulation stabilizes intermolecular association and structure formation of functional RNA and DNA. Current Biology, 2022, 32, 86-96.e6.	3.9	12
46	Origin of Life: Protocells Red in Tooth and Claw. Current Biology, 2015, 25, R1175-R1177.	3.9	11
47	Kinetic sequencing (k-Seq) as a massively parallel assay for ribozyme kinetics: utility and critical parameters. Nucleic Acids Research, 2021, 49, e67-e67.	14.5	11
48	Emergent properties as by-products of prebiotic evolution of aminoacylation ribozymes. Nature Communications, 2022, 13, .	12.8	11
49	Computational analysis of fitness landscapes and evolutionary networks from in vitro evolution experiments. Methods, 2016, 106, 86-96.	3.8	10
50	Effect of UV Radiation on Fluorescent RNA Aptamersâ€™ Functional and Templating Ability. ChemBioChem, 2019, 20, 2609-2617.	2.6	9
51	High throughput sequencing of in vitro selections of mRNA-displayed peptides: data analysis and applications. Physical Chemistry Chemical Physics, 2020, 22, 6492-6506.	2.8	8
52	Quadruplet codons: One small step for a ribosome, one giant leap for proteins. BioEssays, 2010, 32, 650-654.	2.5	7
53	Replicating towards complexity. Nature Chemistry, 2015, 7, 191-192.	13.6	4
54	From underwear to non-equilibrium thermodynamics: physical chemistry informs the origin of life. Physical Chemistry Chemical Physics, 2016, 18, 20005-20006.	2.8	4

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55	From soup to peptides. Nature Chemistry, 2019, 11, 763-764.	13.6	4
56	A Bayesian Nonparametric Analysis for Zero-Inflated Multivariate Count Data with Application to Microbiome Study. Journal of the Royal Statistical Society Series C: Applied Statistics, 2021, 70, 961-979.	1.0	4
57	Phage therapy administered noninvasively could be effective in thin tubes subject to episodic flow despite washout: a simulation study. Physical Biology, 2019, 16, 054001.	1.8	3
58	Life: The Physical Underpinnings of Replication. , 2013, , 271-306.		2
59	Connections Between Mathematical Models of Prebiotic Evolution and Homochirality. Nucleic Acids and Molecular Biology, 2018, , 245-261.	0.2	2
60	Mathematical Models of Prebiotic Replication of Informational Molecules. Cellular Origin and Life in Extreme Habitats, 2012, , 67-88.	0.3	0
61	Quantitative Analysis of Synthesized Nucleic Acid Pools. SEMA SIMAI Springer Series, 2016, , 19-41.	0.7	0
62	Hispanic Mothers' Experiences with School-Based Emotional Health Curriculum and Perspectives of Their Own Mental Health Needs. Issues in Mental Health Nursing, 2019, 40, 720-724.	1.2	0
63	Functional and Templating Ability of Fluorescent RNA Aptamers in Possible Prebiotic Conditions. Biophysical Journal, 2020, 118, 70a.	0.5	0
64	InÂvitro evolution: From monsters to mobs. Current Biology, 2022, 32, R580-R583.	3.9	0