Geraldâ€F Joyce

List of Publications by Year
in descending order

79 papers	11,533 citations	81900 39 h-index	60623 81 g-index
88 all docs	88 docs citations	88 times ranked	6674 citing authors

#	Article	IF	Citations
1	Selection in vitro of an RNA enzyme that specifically cleaves single-stranded DNA. Nature, 1990, 344, 467-468.	27.8	1,249
2	A DNA enzyme that cleaves RNA. Chemistry and Biology, 1994, 1, 223-229.	6.0	1,242
3	The antiquity of RNA-based evolution. Nature, 2002, 418, 214-221.	27.8	914
4	A 1.7-kilobase single-stranded DNA that folds into a nanoscale octahedron. Nature, 2004, 427, 618-621.	27.8	912
5	RNA evolution and the origins of life. Nature, 1989, 338, 217-224.	27.8	599
6	Self-Sustained Replication of an RNA Enzyme. Science, 2009, 323, 1229-1232.	12.6	556
7	Directed Evolution of Nucleic Acid Enzymes. Annual Review of Biochemistry, 2004, 73, 791-836.	11.1	476
8	Mechanism and Utility of an RNA-Cleaving DNA Enzymeâ€. Biochemistry, 1998, 37, 13330-13342.	2.5	419
9	A DNA enzyme with Mg2+-dependent RNA phosphoesterase activity. Chemistry and Biology, 1995, 2, 655-660.	6.0	393
10	The Origins of the RNA World. Cold Spring Harbor Perspectives in Biology, 2012, 4, a003608-a003608.	5.5	383
11	RNA Cleavage by a DNA Enzyme with Extended Chemical Functionality. Journal of the American Chemical Society, 2000, 122, 2433-2439.	13.7	352
12	Forty Years of In Vitro Evolution. Angewandte Chemie - International Edition, 2007, 46, 6420-6436.	13.8	280
13	A self-replicating ligase ribozyme. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 12733-12740.	7.1	220
14	Evolution in vitro of an RNA enzyme with altered metal dependence. Nature, 1993, 361, 182-185.	27.8	209
15	Continuous in Vitro Evolution of Catalytic Function. Science, 1997, 276, 614-617.	12.6	198
16	Amplification of RNA by an RNA polymerase ribozyme. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 9786-9791.	7.1	190
17	Protocells and RNA Self-Replication. Cold Spring Harbor Perspectives in Biology, 2018, 10, a034801.	5.5	190
18	Amplification, mutation and selection of catalytic RNA. Gene, 1989, 82, 83-87.	2.2	168

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19	Crystal structure of an 82-nucleotide RNA-DNA complex formed by the 10-23 DNA enzyme. Nature Structural Biology, 1999, 6, 151-156.	9.7	165
20	A cross-chiral RNA polymerase ribozyme. Nature, 2014, 515, 440-442.	27.8	153
21	Minimal self-replicating systems. Current Opinion in Chemical Biology, 2004, 8, 634-639.	6.1	127
22	Selective Derivatization and Sequestration of Ribose from a Prebiotic Mix. Journal of the American Chemical Society, 2004, 126, 9578-9583.	13.7	111
23	Cross-Catalytic Replication of an RNA Ligase Ribozyme. Chemistry and Biology, 2004, 11, 1505-1512.	6.0	103
24	The effect of cytidine on the structure and function of an RNA ligase ribozyme. Rna, 2001, 7, 395-404.	3.5	99
25	A ribozyme composed of only two different nucleotides. Nature, 2002, 420, 841-844.	27.8	98
26	A ribozyme that lacks cytidine. Nature, 1999, 402, 323-325.	27.8	91
27	The Expanding View of RNA and DNA Function. Chemistry and Biology, 2014, 21, 1059-1065.	6.0	87
28	Highly Efficient Self-Replicating RNA Enzymes. Chemistry and Biology, 2014, 21, 238-245.	6.0	85
29	An RNA polymerase ribozyme that synthesizes its own ancestor. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 2906-2913.	7.1	81
30	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
31	Microfluidic Serial Dilution Circuit. Analytical Chemistry, 2006, 78, 7522-7527.	6.5	60
32	Binding of a Structured <scp>d</scp>-RNA Molecule by an <scp>l</scp>-RNA Aptamer. Journal of the American Chemical Society, 2013, 135, 13290-13293.	13.7	59
33	Microfluidic Compartmentalized Directed Evolution. Chemistry and Biology, 2010, 17, 717-724.	6.0	58
34	Autocatalytic aptazymes enable ligand-dependent exponential amplification of RNA. Nature Biotechnology, 2009, 27, 288-292.	17.5	57
35	Continuous In Vitro Evolution of a Ribozyme that Catalyzes Three Successive Nucleotidyl Addition Reactions. Chemistry and Biology, 2002, 9, 585-596.	6.0	51
36	Self-Incorporation of coenzymes by ribozymes. Journal of Molecular Evolution, 1995, 40, 551-558.	1.8	50

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37	RNA Cleavage by the 10-23 DNA Enzyme. Methods in Enzymology, 2001, 341, 503-517.	1.0	49
38	Emergence of a fast-reacting ribozyme that is capable of undergoing continuous evolution. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 15288-15293.	7.1	48
39	RNA-Catalyzed RNA Ligation on an External RNA Template. Chemistry and Biology, 2002, 9, 297-307.	6.0	46
40	A reverse transcriptase ribozyme. ELife, 2017, 6, .	6.0	46
41	Toward an Alternative Biology. Science, 2012, 336, 307-308.	12.6	40
42	Conversion of a Ribozyme to a Deoxyribozyme through In Vitro Evolution. Chemistry and Biology, 2006, 13, 329-338.	6.0	39
43	Specific Inhibition of MicroRNA Processing Using <scp>l</scp>-RNA Aptamers. Journal of the American Chemical Society, 2015, 137, 16032-16037.	13.7	38
44	Bit by Bit: The Darwinian Basis of Life. PLoS Biology, 2012, 10, e1001323.	5.6	37
45	Ligand-Dependent Exponential Amplification of a Self-Replicating <scp>l</scp>-RNA Enzyme. Journal of the American Chemical Society, 2012, 134, 8050-8053.	13.7	35
46	Darwinian Evolution on a Chip. PLoS Biology, 2008, 6, e85.	5.6	34
47	Thermal Habitat for RNA Amplification and Accumulation. Physical Review Letters, 2020, 125, 048104.	7.8	34
48	Continuous In Vitro Evolution of Ribozymes That Operate Under Conditions of Extreme pH. Journal of Molecular Evolution, 2003, 57, 292-298.	1.8	33
49	Nucleoglycoconjugates: Design and Synthesis of a New Class of DNAâ€"Carbohydrate Conjugates. Angewandte Chemie - International Edition, 2000, 39, 3660-3663.	13.8	32
50	Booting up life. Nature, 2002, 420, 278-279.	27.8	32
51	The Promise and Peril of Continuous In Vitro Evolution. Journal of Molecular Evolution, 2005, 61, 253-263.	1.8	29
52	A DNA-Templated Aldol Reaction as a Model for the Formation of Pentose Sugars in the RNA World. Angewandte Chemie - International Edition, 2005, 44, 7580-7583.	13.8	28
53	Niche partitioning in the coevolution of 2 distinct RNA enzymes. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 7780-7785.	7.1	28
54	Kinetic Properties of an RNA Enzyme That Undergoes Self-Sustained Exponential Amplification. Biochemistry, 2013, 52, 1227-1235.	2.5	28

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55	Origin and Ancestor: Separate Environments. Science, 1999, 283, 791c-791.	12.6	25
56	A molecular description of the evolution of resistance. Chemistry and Biology, 1999, 6, 881-889.	6.0	24
57	Limits of Neutral Drift: Lessons From the In Vitro Evolution of Two Ribozymes. Journal of Molecular Evolution, 2014, 79, 75-90.	1.8	24
58	An Isothermal System that Couples Ligand-Dependent Catalysis to Ligand-Independent Exponential Amplification. Journal of the American Chemical Society, 2011, 133, 3191-3197.	13.7	23
59	An L-RNA Aptamer that Binds and Inhibits RNase. Chemistry and Biology, 2015, 22, 1437-1441.	6.0	22
60	3â€²-End labeling of nucleic acids by a polymerase ribozyme. Nucleic Acids Research, 2018, 46, e103-e103.	14.5	22
61	STRUCTURAL BIOLOGY: A Glimpse of Biology's First Enzyme. Science, 2007, 315, 1507-1508.	12.6	19
62	RNA-Catalyzed Polymerization of Deoxyribose, Threose, and Arabinose Nucleic Acids. ACS Synthetic Biology, 2019, 8, 955-961.	3.8	19
63	Synthetic Evolving Systems that Implement a User-Specified Genetic Code of Arbitrary Design. Chemistry and Biology, 2012, 19, 1324-1332.	6.0	17
64	Witnessing the structural evolution of an RNA enzyme. ELife, 2021, 10, .	6.0	14
65	Substitution of Ribonucleotides in the T7 RNA Polymerase Promoter Element. Journal of Biological Chemistry, 2002, 277, 2987-2991.	3.4	13
66	Real-Time Detection of a Self-Replicating RNA Enzyme. Molecules, 2016, 21, 1310.	3.8	13
67	RNA-Catalyzed Cross-Chiral Polymerization of RNA. Journal of the American Chemical Society, 2020, 142, 15331-15339.	13.7	13
68	Self-replication. Current Biology, 2003, 13, R46.	3.9	12
69	Perfectly Complementary Nucleic Acid Enzymes. Journal of Molecular Evolution, 2003, 56, 711-717.	1.8	11
70	Deep sequencing analysis of mutations resulting from the incorporation of dNTP analogs. Nucleic Acids Research, 2010, 38, 8095-8104.	14.5	10
71	Cross-Chiral, RNA-Catalyzed Exponential Amplification of RNA. Journal of the American Chemical Society, 2021, 143, 19160-19166.	13.7	8
72	Reflections of a Darwinian Engineer. Journal of Molecular Evolution, 2015, 81, 146-149.	1.8	7

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73	Leslie Orgel (1927â€“2007). Nature, 2007, 450, 627-627.	27.8	5
74	Kinetic Effects of Î²,Î³-Modified Deoxynucleoside 5â€²-Triphosphate Analogues on RNA-Catalyzed Polymerization of DNA. Biochemistry, 2021, 60, 1-5.	2.5	3
75	Amide Cleavage by a Ribozyme: Correction. Science, 1996, 272, 18-19.	12.6	3
76	Ligand-Dependent Exponential Amplification of Self-Replicating RNA Enzymes. Methods in Enzymology, 2015, 550, 23-39.	1.0	2
77	The counterforce. Current Biology, 1999, 9, R500-R501.	3.9	1
78	Leslie Eleazer Orgel. 12 January 1927 â€" 27 October 2007. Biographical Memoirs of Fellows of the Royal Society, 2013, 59, 277-289.	0.1	1
79	Amide Cleavage by a Ribozyme: Correction. Science, 1996, 272, 18-19.	12.6	0