Vincent Noireaux

List of Publications by Year
in descending order

78 papers	9,760 citations	87723 38 h-index	69108 77 g-index
89 all docs	89 docs citations	89 times ranked	7747 citing authors

#	Article	IF	Citations
1	In Vivo Imaging of Quantum Dots Encapsulated in Phospholipid Micelles. Science, 2002, 298, 1759-1762.	6.0	2,961
2	A vesicle bioreactor as a step toward an artificial cell assembly. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 17669-17674.	3.3	1,045
3	An <i>E. coli</i> Cell-Free Expression Toolbox: Application to Synthetic Gene Circuits and Artificial Cells. ACS Synthetic Biology, 2012, 1, 29-41.	1.9	381
4	The All <i>E. coli</i> TX-TL Toolbox 2.0: A Platform for Cell-Free Synthetic Biology. ACS Synthetic Biology, 2016, 5, 344-355.	1.9	359
5	Linear DNA for Rapid Prototyping of Synthetic Biological Circuits in an <i>Escherichia coli</i> Based TX-TL Cell-Free System. ACS Synthetic Biology, 2014, 3, 387-397.	1.9	302
6	Protocols for Implementing an Escherichia coli Based TX-TL Cell-Free Expression System for Synthetic Biology. Journal of Visualized Experiments, 2013, , e50762.	0.2	280
7	Development of an artificial cell, from self-organization to computation and self-reproduction. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 3473-3480.	3.3	270
8	Principles of cell-free genetic circuit assembly. Proceedings of the National Academy of Sciences of the United States of America, 2003, 100, 12672-12677.	3.3	248
9	Programmable on-chip DNA compartments as artificial cells. Science, 2014, 345, 829-832.	6.0	237
10	Synthesis of 2.3Âmg/ml of protein with an all Escherichia coli cell-free transcriptionâ€“translation system. Biochimie, 2014, 99, 162-168.	1.3	219
11	Efficient cell-free expression with the endogenous E. Coli RNA polymerase and sigma factor 70. Journal of Biological Engineering, 2010, 4, 8.	2.0	199
12	Gene Circuit Performance Characterization and Resource Usage in a Cell-Free â€œBreadboardâ€. ACS Synthetic Biology, 2014, 3, 416-425.	1.9	174
13	Rapid and Scalable Characterization of CRISPR Technologies Using an E.Âcoli Cell-Free Transcription-Translation System. Molecular Cell, 2018, 69, 146-157.e3.	4.5	165
14	Rapidly Characterizing the Fast Dynamics of RNA Genetic Circuitry with Cell-Free Transcriptionâ€“Translation (TX-TL) Systems. ACS Synthetic Biology, 2015, 4, 503-515.	1.9	154
15	Toward an artificial cell based on gene expression in vesicles. Physical Biology, 2005, 2, P1-P8.	0.8	138
16	Genome Replication, Synthesis, and Assembly of the Bacteriophage T7 in a Single Cell-Free Reaction. ACS Synthetic Biology, 2012, 1, 408-413.	1.9	134
17	Coarse-Grained Dynamics of Protein Synthesis in a Cell-Free System. Physical Review Letters, 2011, 106, 048104.	2.9	116
18	ActA and human zyxin harbour Arp2/3-independent actin-polymerization activity. Nature Cell Biology, 2001, 3, 699-707.	4.6	113

#	ARTICLE	IF	CITATIONS
19	Characterizing and prototyping genetic networks with cell-free transcriptionâ€“translation reactions. Methods, 2015, 86, 60-72.	1.9	112
20	Integration of biological parts toward the synthesis of a minimal cell. Current Opinion in Chemical Biology, 2014, 22, 85-91.	2.8	106
21	Assembly of MreB Filaments on Liposome Membranes: A Synthetic Biology Approach. ACS Synthetic Biology, 2012, 1, 53-59.	1.9	100
22	Synchrony and pattern formation of coupled genetic oscillators on a chip of artificial cells. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 11609-11614.	3.3	89
23	Propagating gene expression fronts in a one-dimensional coupled system of artificial cells. Nature Physics, 2015, 11, 1037-1041.	6.5	81
24	A cost-effective polyphosphate-based metabolism fuels an all E. coli cell-free expression system. Metabolic Engineering, 2015, 27, 29-37.	3.6	80
25	Short DNA containing Ï‡ sites enhances DNA stability and gene expression in <i>E. coli</i> cellâ€free transcriptionâ€“translation systems. Biotechnology and Bioengineering, 2017, 114, 2137-2141.	1.7	80
26	Cell-free TXTL synthesis of infectious bacteriophage T4 in a single test tube reaction. Synthetic Biology, 2018, 3, ysy002.	1.2	77
27	Cell-free gene expression. Nature Reviews Methods Primers, 2021, 1, .	11.8	71
28	The living interface between synthetic biology and biomaterial design. Nature Materials, 2022, 21, 390-397.	13.3	68
29	Î±-Hemolysin pore formation into a supported phospholipid bilayer using cell-free expression. Biochimica Et Biophysica Acta - Biomembranes, 2011, 1808, 271-278.	1.4	66
30	Cell-sized mechanosensitive and biosensing compartment programmed with DNA. Chemical Communications, 2017, 53, 7349-7352.	2.2	66
31	Study of messenger RNA inactivation and protein degradation in an Escherichia coli cell-free expression system. Journal of Biological Engineering, 2010, 4, 9.	2.0	65
32	Cell-free transcriptionâ€“translation: engineering biology from the nanometer to the millimeter scale. Current Opinion in Biotechnology, 2019, 58, 19-27.	3.3	60
33	In vitro implementation of robust gene regulation in a synthetic biomolecular integral controller. Nature Communications, 2019, 10, 5760.	5.8	54
34	Multiplex transcriptional characterizations across diverse bacterial species using cellâ€free systems. Molecular Systems Biology, 2019, 15, e8875.	3.2	54
35	An Adaptive Synthetic Cell Based on Mechanosensing, Biosensing, and Inducible Gene Circuits. ACS Synthetic Biology, 2019, 8, 1913-1920.	1.9	53
36	The all-E. coliTXTL toolbox 3.0: new capabilities of a cell-free synthetic biology platform. Synthetic Biology, 2021, 6, ysab017.	1.2	50

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37	The New Age of Cell-Free Biology. Annual Review of Biomedical Engineering, 2020, 22, 51-77.	5.7	48
38	Membrane molecular crowding enhances MreB polymerization to shape synthetic cells from spheres to rods. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 1902-1909.	3.3	46
39	Quantitative modeling of transcription and translation of an all-E. coli cell-free system. Scientific Reports, 2019, 9, 11980.	1.6	45
40	Genetically expanded cellâ€free protein synthesis using endogenous pyrrolysyl orthogonal translation system. Biotechnology and Bioengineering, 2015, 112, 1663-1672.	1.7	44
41	Preparation of amino acid mixtures for cell-free expression systems. BioTechniques, 2015, 58, 40-43.	0.8	44
42	Cell-free expression with the toxic amino acid canavanine. Bioorganic and Medicinal Chemistry Letters, 2015, 25, 3658-3660.	1.0	44
43	Mathematical Modeling of RNA-Based Architectures for Closed Loop Control of Gene Expression. ACS Synthetic Biology, 2018, 7, 1219-1228.	1.9	42
44	Distinct timescales of RNA regulators enable the construction of a genetic pulse generator. Biotechnology and Bioengineering, 2019, 116, 1139-1151.	1.7	40
45	Characterization of the allâ€<scp><i>E. coli</i></scp> transcriptionâ€translation system myTXTL by mass spectrometry. Rapid Communications in Mass Spectrometry, 2019, 33, 1036-1048.	0.7	38
46	A detailed cell-free transcription-translation-based assay to decipher CRISPR protospacer-adjacent motifs. Methods, 2018, 143, 48-57.	1.9	36
47	Preparation of Tethered-Lipid Bilayers on Gold Surfaces for the Incorporation of Integral Membrane Proteins Synthesized by Cell-Free Expression. Langmuir, 2014, 30, 3132-3141.	1.6	34
48	An educational module to explore CRISPR technologies with a cell-free transcription-translation system. Synthetic Biology, 2019, 4, ysz005.	1.2	34
49	Compartmentalization of an all-<i>E. coli</i> Cell-Free Expression System for the Construction of a Minimal Cell. Artificial Life, 2016, 22, 185-195.	1.0	32
50	Anomalous Scaling of Gene Expression in Confined Cell-Free Reactions. Scientific Reports, 2018, 8, 7364.	1.6	28
51	Synthetic Biology with an All E. coli TXTL System: Quantitative Characterization of Regulatory Elements and Gene Circuits. Methods in Molecular Biology, 2018, 1772, 61-93.	0.4	24
52	Protecting Linear DNA Templates in Cell-Free Expression Systems from Diverse Bacteria. ACS Synthetic Biology, 2020, 9, 2851-2855.	1.9	24
53	Synthesis of Infectious Bacteriophages in an E. coli-based Cell-free Expression System. Journal of Visualized Experiments, 2017, , .	0.2	23
54	Tuning of Recombinant Protein Expression in <i>Escherichia coli</i>by Manipulating Transcription, Translation Initiation Rates, and Incorporation of Noncanonical Amino Acids. ACS Synthetic Biology, 2017, 6, 1076-1085.	1.9	22

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55	Membrane Augmented Cell-Free Systems: A New Frontier in Biotechnology. ACS Synthetic Biology, 2021, 10, 670-681.	1.9	22
56	An enhanced assay to characterize anti-CRISPR proteins using a cell-free transcription-translation system. Methods, 2020, 172, 42-50.	1.9	21
57	Biomolecular resource utilization in elementary cell-free gene circuits. , 2013, , .		20
58	Gene Expression in on-Chip Membrane-Bound Artificial Cells. ACS Synthetic Biology, 2019, 8, 1705-1712.	1.9	20
59	Programming multi-protein assembly by gene-brush patterns and two-dimensional compartment geometry. Nature Nanotechnology, 2020, 15, 783-791.	15.6	19
60	TXTL-based approach to synthetic cells. Methods in Enzymology, 2019, 617, 217-239.	0.4	17
61	Phase Separation and Protein Partitioning in Compartmentalized Cell-Free Expression Reactions. Biomacromolecules, 2021, 22, 3451-3459.	2.6	17
62	Semiconductor Nanoplatelets: A New Class of Ultrabright Fluorescent Probes for Cytometric and Imaging Applications. ACS Applied Materials & Interfaces, 2018, 10, 24739-24749.	4.0	15
63	Analysis of Cytoplasmic and Membrane Molecular Crowding in Genetically Programmed Synthetic Cells. Biomacromolecules, 2020, 21, 2808-2817.	2.6	15
64	Multi-layer CRISPRa/i circuits for dynamic genetic programs in cell-free and bacterial systems. Cell Systems, 2022, 13, 215-229.e8.	2.9	15
65	Will biologists become computer scientists?. EMBO Reports, 2018, 19, .	2.0	13
66	Engineering DNA nanotubes for resilience in an E. coli TXTL system. Synthetic Biology, 2018, 3, ysy001.	1.2	11
67	Guiding Ethical Principles in Engineering Biology Research. ACS Synthetic Biology, 2021, 10, 907-910.	1.9	10
68	From deterministic to fuzzy decision-making in artificial cells. Nature Communications, 2020, 11, 5648.	5.8	9
69	Residue-specific Incorporation of Noncanonical Amino Acids into Model Proteins Using an Escherichia coli Cell-free Transcription-translation System. Journal of Visualized Experiments, 2016, , .	0.2	8
70	Membrane functions genetically programmed in synthetic cells: A barrier to conquer. Current Opinion in Systems Biology, 2020, 24, 9-17.	1.3	6
71	Complex dependence of CRISPR-Cas9 binding strength on guide RNA spacer lengths. Physical Biology, 2021, 18, 056003.	0.8	6
72	Cell-free expression and synthesis of viruses and bacteriophages: applications to medicine and nanotechnology. Current Opinion in Systems Biology, 2021, 28, 100373.	1.3	6

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73	Tailor-made genetic codes. Nature Chemistry, 2016, 8, 291-292.	6.6	5
74	Rapid Testing of CRISPR Nucleases and GuideÂRNAs in an E.Âcoli Cell-Free Transcription-Translation System. STAR Protocols, 2020, 1, 100003.	0.5	5
75	Some Remarks on Robust Gene Regulation in a Biomolecular Integral Controller. , 2019, , .		3
76	Propelling soft objects. Comptes Rendus Physique, 2003, 4, 275-280.	0.3	2
77	A Comparative Study of Î±-Hemolysin Expression in Supported Lipid Bilayers of Synthetic and Enriched Complex Bacterial Lipid. BioNanoScience, 2014, 4, 104-110.	1.5	2
78	A Methylation-Directed, Synthetic Pap Switch Based on Self-Complementary Regulatory DNA Reconstituted in an All E. coli Cell-Free Expression System. ACS Synthetic Biology, 2021, 10, 2725-2739.	1.9	1