James R Swartz

List of Publications by Year in descending order

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118 papers	7,648 citations	44069 48 h-index	56724 83 g-index
121 all docs	121 docs citations	121 times ranked	5274 citing authors

#	Article	IF	Citations
1	Advances in Escherichia coli production of therapeutic proteins. Current Opinion in Biotechnology, 2001, 12, 195-201.	6.6	389
2	Mimicking the Escherichia coli cytoplasmic environment activates longâ€lived and efficient cellâ€free protein synthesis. Biotechnology and Bioengineering, 2004, 86, 19-26.	3.3	376
3	An integrated cellâ€free metabolic platform for protein production and synthetic biology. Molecular Systems Biology, 2008, 4, 220.	7.2	313
4	Virusâ€like particles: Nextâ€generation nanoparticles for targeted therapeutic delivery. Bioengineering and Translational Medicine, 2017, 2, 43-57.	7.1	256
5	Regeneration of adenosine triphosphate from glycolytic intermediates for cellâ€free protein synthesis. Biotechnology and Bioengineering, 2001, 74, 309-316.	3.3	208
6	Prolonging cell-free protein synthesis with a novel ATP regeneration system. Biotechnology and Bioengineering, 1999, 66, 180-188.	3.3	201
7	Production and stabilization of the trimeric influenza hemagglutinin stem domain for potentially broadly protective influenza vaccines. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 125-130.	7.1	184
8	Site-Specific Incorporation of p-Propargyloxyphenylalanine in a Cell-Free Environment for Direct Proteinâ^'Protein Click Conjugation. Bioconjugate Chemistry, 2010, 21, 255-263.	3.6	178
9	Escherichia coliâ€based cellâ€free synthesis of virusâ€like particles. Biotechnology and Bioengineering, 2008, 100, 28-37.	3.3	158
10	Energizing cell-free protein synthesis with glucose metabolism. Biotechnology and Bioengineering, 2005, 90, 606-613.	3.3	155
11	High-Yield Expression of Heterologous [FeFe] Hydrogenases in Escherichia coli. PLoS ONE, 2010, 5, e15491.	2.5	144
12	Prolonging Cell-Free Protein Synthesis by Selective Reagent Additions. Biotechnology Progress, 2000, 16, 385-390.	2.6	141
13	Efficient production of a bioactive, multiple disulfide-bonded protein using modified extracts ofEscherichia coli. Biotechnology and Bioengineering, 2004, 85, 122-129.	3.3	139
14	Surface Functionalization of Virus-Like Particles by Direct Conjugation Using Azideâ^'Alkyne Click Chemistry. Bioconjugate Chemistry, 2011, 22, 376-387.	3.6	136
15	In Vitroandin VivoRedox States of theEscherichia coliPeriplasmic Oxidoreductases DsbA and DsbC. Biochemistry, 1997, 36, 10067-10072.	2.5	132
16	Expression of Active Human Tissue-Type Plasminogen Activator in Escherichia coli. Applied and Environmental Microbiology, 1998, 64, 4891-4896.	3.1	129
17	Development of cellâ€free protein synthesis platforms for disulfide bonded proteins. Biotechnology and Bioengineering, 2008, 99, 351-367.	3.3	126
18	Enhancing multiple disulfide bonded protein folding in a cell-free system. Biotechnology and Bioengineering, 2004, 86, 188-195.	3.3	125

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19	Assessing sequence plasticity of a virus-like nanoparticle by evolution toward a versatile scaffold for vaccines and drug delivery. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 12360-12365.	7.1	117
20	Cell-free production of scFv fusion proteins: an efficient approach for personalized lymphoma vaccines. Blood, 2007, 109, 3393-3399.	1.4	116
21	Quantitative polysome analysis identifies limitations in bacterial cell-free protein synthesis. Biotechnology and Bioengineering, 2005, 91, 425-435.	3.3	113
22	An Economical Method for Cell-Free Protein Synthesis using Glucose and Nucleoside Monophosphates. Biotechnology Progress, 2008, 21, 1146-1153.	2.6	109
23	The HydG Enzyme Generates an Fe(CO) ₂ (CN) Synthon in Assembly of the FeFe Hydrogenase H-Cluster. Science, 2014, 343, 424-427.	12.6	109
24	Highâ€level cellâ€free synthesis yields of proteins containing siteâ€specific nonâ€natural amino acids. Biotechnology and Bioengineering, 2009, 102, 400-416.	3.3	107
25	A Radical Intermediate in Tyrosine Scission to the CO and CN ^{â˙} Ligands of FeFe Hydrogenase. Science, 2013, 342, 472-475.	12.6	107
26	Streamlining Escherichia Coli S30 Extract Preparation for Economical Cell-Free Protein Synthesis. Biotechnology Progress, 2008, 21, 460-465.	2.6	106
27	Substrate replenishment extends protein synthesis with an in vitro translation system designed to mimic the cytoplasm. Biotechnology and Bioengineering, 2004, 87, 465-471.	3.3	105
28	Cell-free synthesis and maturation of [FeFe] hydrogenases. Biotechnology and Bioengineering, 2008, 99, 59-67.	3.3	104
29	Transforming biochemical engineering with cellâ€free biology. AICHE Journal, 2012, 58, 5-13.	3.6	104
30	High yield cell-free production of integral membrane proteins without refolding or detergents. Biochimica Et Biophysica Acta - Biomembranes, 2008, 1778, 1237-1250.	2.6	101
31	Cellâ€free synthesis of functional aquaporin Z in synthetic liposomes. Biotechnology and Bioengineering, 2009, 104, 40-49.	3.3	99
32	Total amino acid stabilization during cell-free protein synthesis reactions. Journal of Biotechnology, 2006, 123, 193-203.	3.8	98
33	X-ray crystallographic and EPR spectroscopic analysis of HydG, a maturase in [FeFe]-hydrogenase H-cluster assembly. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 1362-1367.	7.1	97
34	Cell-free co-production of an orthogonal transfer RNA activates efficient site-specific non-natural amino acid incorporation. Nucleic Acids Research, 2013, 41, 5949-5963.	14.5	96
35	Efficient disulfide bond formation in virus-like particles. Journal of Biotechnology, 2011, 154, 230-239.	3.8	91
36	Multiply mutated Gaussia luciferases provide prolonged and intense bioluminescence. Biochemical and Biophysical Research Communications, 2009, 389, 563-568.	2.1	84

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37	Cell-free H-cluster Synthesis and [FeFe] Hydrogenase Activation: All Five CO and CNâ^' Ligands Derive from Tyrosine. PLoS ONE, 2011, 6, e20346.	2.5	79
38	Efficient and scalable method for scaling up cell free protein synthesis in batch mode. Biotechnology and Bioengineering, 2005, 91, 516-521.	3.3	78
39	Development of an In Vitro Compartmentalization Screen for High-Throughput Directed Evolution of [FeFe] Hydrogenases. PLoS ONE, 2010, 5, e15275.	2.5	78
40	Cell-free metabolic engineering promotes high-level production of bioactive Gaussia princeps luciferase. Metabolic Engineering, 2008, 10, 187-200.	7.0	75
41	Cell-Free Protein Synthesis With Prokaryotic Combined Transcription-Translation. , 2004, 267, 169-182.		72
42	Rapid expression of vaccine proteins for B-cell lymphoma in a cell-free system. Biotechnology and Bioengineering, 2005, 89, 503-511.	3.3	71
43	New Insights into [FeFe] Hydrogenase Activation and Maturase Function. PLoS ONE, 2012, 7, e45850.	2.5	66
44	Cell-free biomanufacturing. Current Opinion in Chemical Engineering, 2018, 22, 177-183.	7.8	65
45	Rapid Expression and Purification of 100 nmol Quantities of Active Protein Using Cell-Free Protein Synthesis. Biotechnology Progress, 2008, 20, 102-109.	2.6	63
46	Tyrosine, Cysteine, and S-Adenosyl Methionine Stimulate In Vitro [FeFe] Hydrogenase Activation. PLoS ONE, 2009, 4, e7565.	2.5	63
47	Continued Protein Synthesis at Low [ATP] and [GTP] Enables Cell Adaptation during Energy Limitation. Journal of Bacteriology, 2009, 191, 1083-1091.	2.2	60
48	Cysteine as a ligand platform in the biosynthesis of the FeFe hydrogenase H cluster. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 11455-11460.	7.1	60
49	Effect of Sequences of the Active-Site Dipeptides of DsbA and DsbC on In Vivo Folding of Multidisulfide Proteins in Escherichia coli. Journal of Bacteriology, 2001, 183, 980-988.	2.2	52
50	Evolution of an [FeFe] hydrogenase with decreased oxygen sensitivity. International Journal of Hydrogen Energy, 2012, 37, 2965-2976.	7.1	52
51	Expanding biological applications using cell-free metabolic engineering: An overview. Metabolic Engineering, 2018, 50, 156-172.	7.0	52
52	Escherichia coliâ€based cell free production of flagellin and ordered flagellin display on virusâ€like particles. Biotechnology and Bioengineering, 2013, 110, 2073-2085.	3.3	49
53	Direct Polymerization of Proteins. ACS Synthetic Biology, 2014, 3, 353-362.	3.8	49
54	Simplifying and streamlining Escherichia coliâ€based cellâ€free protein synthesis. Biotechnology Progress, 2012, 28, 413-420.	2.6	48

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55	A Cell-Free Microtiter Plate Screen for Improved [FeFe] Hydrogenases. PLoS ONE, 2010, 5, e10554.	2.5	47
56	A vaccine directed to B cells and produced by cell-free protein synthesis generates potent antilymphoma immunity. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 14526-14531.	7.1	47
57	Energy Systems for ATP Regeneration in Cell-Free Protein Synthesis Reactions. , 2007, 375, 3-17.		46
58	The Radical SAM Enzyme HydG Requires Cysteine and a Dangler Iron for Generating an Organometallic Precursor to the [FeFe]-Hydrogenase H-Cluster. Journal of the American Chemical Society, 2016, 138, 1146-1149.	13.7	46
59	Cell-free synthesis of proteins that require disulfide bonds using glucose as an energy source. Biotechnology and Bioengineering, 2007, 97, 901-908.	3.3	45
60	Title is missing!. Biotechnology Letters, 2000, 22, 1537-1542.	2.2	41
61	Expression of Active Murine Granulocyte-Macrophage Colony-Stimulating Factor in an Escherichia coli Cell-Free System. Biotechnology Progress, 2004, 20, 1689-1696.	2.6	41
62	Protein Folding Activities of Escherichia coli Protein Disulfide Isomerase. Biochemistry, 1994, 33, 4231-4236.	2.5	40
63	Functional properties of flagellin as a stimulator of innate immunity. Scientific Reports, 2016, 6, 18379.	3.3	40
64	The Cyanide Ligands of [FeFe] Hydrogenase: Pulse EPR Studies of 13C and 15N-Labeled H-Cluster. Journal of the American Chemical Society, 2014, 136, 12237-12240.	13.7	37
65	Rapid Expression of Functional Genomic Libraries. Journal of Proteome Research, 2006, 5, 3288-3300.	3.7	36
66	Cellâ€free production of transducible transcription factors for nuclear reprogramming. Biotechnology and Bioengineering, 2009, 104, 1047-1058.	3.3	36
67	Chemical lysis of cyanobacteria. Journal of Biological Engineering, 2015, 9, 10.	4.7	35
68	Nuclear Resonance Vibrational Spectroscopy and Electron Paramagnetic Resonance Spectroscopy of ⁵⁷Fe-Enriched [FeFe] Hydrogenase Indicate Stepwise Assembly of the H-Cluster. Biochemistry, 2013, 52, 818-826.	2.5	33
69	Measurement of cell mass concentration with a continuous-flow viscometer. Biotechnology and Bioengineering, 1979, 21, 519-523.	3.3	29
70	Cellâ€free production of trimeric influenza hemagglutinin head domain proteins as vaccine antigens. Biotechnology and Bioengineering, 2012, 109, 2962-2969.	3.3	29
71	Development of a synthetic pathway to convert glucose to hydrogen using cell free extracts. International Journal of Hydrogen Energy, 2015, 40, 9113-9124.	7.1	28
72	Generation of hydrogen from NADPH using an [FeFe] hydrogenase. International Journal of Hydrogen Energy, 2012, 37, 2977-2983.	7.1	27

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73	A sequential expression system for highâ€throughput functional genomic analysis. Proteomics, 2007, 7, 3870-3879.	2.2	26
74	Comparing the functional properties of the Hsp70 chaperones, DnaK and BiP. Biophysical Chemistry, 2010, 149, 58-66.	2.8	25
75	Biosynthesis of the [FeFe] Hydrogenase H Cluster: A Central Role for the Radical SAM Enzyme HydG. Inorganic Chemistry, 2016, 55, 478-487.	4.0	24
76	Universal cell-free protein synthesis. Nature Biotechnology, 2009, 27, 731-732.	17.5	23
77	Streamlined circular proximity ligation assay provides high stringency and compatibility with low-affinity antibodies. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E925-E933.	7.1	23
78	Thermodynamic evaluation of microbial growth. Biotechnology and Bioengineering, 1976, 18, 1811-1814.	3.3	22
79	Cell-free production of Gaussia princeps luciferase â€“ antibody fragment bioconjugates for ex vivo detection of tumor cells. Biochemical and Biophysical Research Communications, 2009, 390, 971-976.	2.1	22
80	Cell-Free Synthesis of the H-Cluster: A Model for the In Vitro Assembly of Metalloprotein Metal Centers. Methods in Molecular Biology, 2014, 1122, 49-72.	0.9	21
81	E. coli-Based In Vitro Transcription/Translation: In Vivo-Specific Synthesis Rates and High Yields in a Batch System. BioTechniques, 1998, 24, 862-868.	1.8	20
82	Simultaneous expression and maturation of the iron-sulfur protein ferredoxin in a cell-free system. Biotechnology and Bioengineering, 2006, 94, 128-138.	3.3	20
83	System analysis and improved [FeFe] hydrogenase O2 tolerance suggest feasibility for photosynthetic H2 production. Metabolic Engineering, 2018, 49, 21-27.	7.0	19
84	Cell-free production of activeE. colithioredoxin reductase and glutathione reductase. FEBS Letters, 2004, 559, 66-70.	2.8	18
85	Using E. coli-based cell-free protein synthesis to evaluate the kinetic performance of an orthogonal tRNA and aminoacyl-tRNA synthetase pair. Biochemical and Biophysical Research Communications, 2013, 431, 291-295.	2.1	17
86	Highâ€Throughput Screening of Catalytic H₂ Production. Angewandte Chemie - International Edition, 2017, 56, 1012-1016.	13.8	17
87	Characterization of [FeFe] Hydrogenase O2 Sensitivity Using a New, Physiological Approach. Journal of Biological Chemistry, 2016, 291, 21563-21570.	3.4	15
88	Cell-free technologies for biopharmaceutical research and production. Current Opinion in Biotechnology, 2022, 76, 102719.	6.6	15
89	Bacterial Cell-Free System for Highly Efficient Protein Synthesis. , 0, , 83-97.		13
90	Genetic Analysis of Disulfide Isomerization in Escherichia coli : Expression of DsbC Is Modulated by RNase E-Dependent mRNA Processing. Journal of Bacteriology, 2004, 186, 654-660.	2.2	12

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91	Escherichia coli-based production of a tumor idiotype antibody fragment â€“ tetanus toxin fragment C fusion protein vaccine for B cell lymphoma. Protein Expression and Purification, 2011, 75, 15-20.	1.3	12
92	Evidence for an additional disulfide reduction pathway in Escherichia coli. Journal of Bioscience and Bioengineering, 2007, 103, 373-376.	2.2	11
93	Single-Step Solubilization and Folding of IGF-1 Aggregates from Escherichia coli. ACS Symposium Series, 1993, , 178-188.	0.5	10
94	Discovery of Improved EGF Agonists Using a Novel In Vitro Screening Platform. Journal of Molecular Biology, 2011, 413, 406-415.	4.2	9
95	Solubility partner IF2 Domain I enables high yield synthesis of transducible transcription factors in Escherichia coli. Protein Expression and Purification, 2011, 80, 145-151.	1.3	9
96	Localization of BiP to translating ribosomes increases soluble accumulation of secreted eukaryotic proteins in an Escherichia coli cellâ€free system. Biotechnology and Bioengineering, 2011, 108, 1739-1748.	3.3	9
97	The exciting potential of modular nanoparticles for rapid development of highly effective vaccines. Current Opinion in Chemical Engineering, 2018, 19, 1-8.	7.8	9
98	A filter microplate assay for quantitative analysis of DNA binding proteins using fluorescent DNA. Analytical Biochemistry, 2011, 415, 168-174.	2.4	8
99	Large-Scale Batch Reactions for Cell-Free Protein Synthesis. , 0, , 207-235.		7
100	Broadening Horizons and Teaching Basic Biology Through Cell-Free Synthesis of Green Fluorescent Protein in a High School Laboratory Course. Journal of Science Education and Technology, 2013, 22, 963-973.	3.9	7
101	Cell-Free Protein Synthesis Systems: Historical Landmarks, Classification, and General Methods. , 0, , 1-34.		6
102	The Use of theEscherichia coli Cell-Free Protein Synthesis for Structural Biology and Structural Proteomics. , 0, , 99-109.		6
103	Affinity Purification of Lipid Vesicles. Biotechnology Progress, 2008, 20, 262-268.	2.6	6
104	Regeneration of adenosine triphosphate from glycolytic intermediates for cellâ€free protein synthesis. Biotechnology and Bioengineering, 2001, 74, 309-316.	3.3	4
105	Purification of Acetate Kinase by Affinity Chromatography. Preparative Biochemistry and Biotechnology, 1978, 8, 479-502.	0.5	3
106	The Wheat Germ Cell-Free Protein Synthesis System. , 0, , 111-139.		3
107	Highâ€Throughput Screening of Catalytic H₂ Production. Angewandte Chemie, 2017, 129, 1032-1036.	2.0	3
108	Novel Techniques using PCR and Cell-Free Protein Synthesis Systems for Combinatorial Bioengineering. , 0, , 179-189.		2

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109	Cell-Free Expression of Integral Membrane Proteins for Structural Studies. , 0, , 141-164.		2
110	Cell-Free Production of Membrane Proteins in the Presence of Detergents. , 0, , 165-178.		1
111	Pluripotency transcription factor Sox2 is strongly adsorbed by heparin but requires a protein transduction domain for cell internalization. Biochemical and Biophysical Research Communications, 2013, 431, 641-645.	2.1	1
112	Gene Cloning and Expression in Molecular Colonies. , 0, , 191-206.		0
113	Functional Genomic Analysis using Sequential Cell-Free Protein Synthesis. , 0, , 51-67.		0
114	Cell-Free Technology for Rapid Production of Patient-Specific Fusion Protein Vaccines. , 0, , 69-82.		0
115	The Constructive Approach for Cell-Free Translation. , 0, , 35-50.		0
116	Improved Composition and Energy Supply for Bacterial Batch Systems. , 2002, , 41-52.		0
117	A Novel Method for Producing Custom-Made Idiotype Vaccines for Lymphoma Immunotherapy Using a Cell-Free Expression System.. Blood, 2004, 104, 1410-1410.	1.4	0
118	Novel Anti-CD19/Idiotype Bispecific Diabody Vaccine for B-Cell Lymphoma.. Blood, 2009, 114, 2712-2712.	1.4	0