

Tomoaki Matsuura

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117
papers

2,596
citations

28
h-index

47
g-index

121
ext. papers

3,013
ext. citations

5.8
avg, IF

5.03
L-index

#	Paper	IF	Citations
117	Replication of genetic information with self-encoded replicase in liposomes. <i>ChemBioChem</i> , 2008 , 9, 2403-10	3.8	137
116	Coupling of the fusion and budding of giant phospholipid vesicles containing macromolecules. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2012 , 109, 5942-7	11.5	121
115	Darwinian evolution in a translation-coupled RNA replication system within a cell-like compartment. <i>Nature Communications</i> , 2013 , 4, 2494	17.4	115
114	In vitro evolution of Ehemolysin using a liposome display. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013 , 110, 16796-801	11.5	102
113	Liposome display for in vitro selection and evolution of membrane proteins. <i>Nature Protocols</i> , 2014 , 9, 1578-91	18.8	96
112	Cell-free protein synthesis inside giant unilamellar vesicles analyzed by flow cytometry. <i>Langmuir</i> , 2012 , 28, 8426-32	4	93
111	Femtoliter compartment in liposomes for in vitro selection of proteins. <i>Analytical Biochemistry</i> , 2006 , 357, 128-36	3.1	90
110	Quantitative study of the structure of multilamellar giant liposomes as a container of protein synthesis reaction. <i>Langmuir</i> , 2008 , 24, 13540-8	4	79
109	Population analysis of structural properties of giant liposomes by flow cytometry. <i>Langmuir</i> , 2009 , 25, 10439-43	4	78
108	Evolutionary molecular engineering by random elongation mutagenesis. <i>Nature Biotechnology</i> , 1999 , 17, 58-61	44.5	75
107	CRISPR/Cas-mediated targeted mutagenesis in <i>Daphnia magna</i> . <i>PLoS ONE</i> , 2014 , 9, e98363	3.7	70
106	In vitro membrane protein synthesis inside cell-sized vesicles reveals the dependence of membrane protein integration on vesicle volume. <i>ACS Synthetic Biology</i> , 2014 , 3, 372-9	5.7	59
105	Computational design of transmembrane pores. <i>Nature</i> , 2020 , 585, 129-134	50.4	56
104	Cellular compartment model for exploring the effect of the lipidic membrane on the kinetics of encapsulated biochemical reactions. <i>Langmuir</i> , 2010 , 26, 8544-51	4	54
103	Programmed vesicle fusion triggers gene expression. <i>Langmuir</i> , 2011 , 27, 13082-90	4	52
102	Quantifying epistatic interactions among the components constituting the protein translation system. <i>Molecular Systems Biology</i> , 2009 , 5, 297	12.2	51
101	In vitro evolution of proteins. <i>Journal of Bioscience and Bioengineering</i> , 2006 , 101, 449-56	3.3	48

100	Importance of parasite RNA species repression for prolonged translation-coupled RNA self-replication. <i>Chemistry and Biology</i> , 2012 , 19, 478-87		45
99	Detection of association and fusion of giant vesicles using a fluorescence-activated cell sorter. <i>Langmuir</i> , 2010 , 26, 15098-103	4	45
98	Synthesis of milligram quantities of proteins using a reconstituted in vitro protein synthesis system. <i>Journal of Bioscience and Bioengineering</i> , 2014 , 118, 554-7	3.3	42
97	Selection based on the folding properties of proteins with ribosome display. <i>FEBS Letters</i> , 2003 , 539, 24-8	3.8	42
96	Programmable Artificial Cells Using Histamine-Responsive Synthetic Riboswitch. <i>Journal of the American Chemical Society</i> , 2019 , 141, 11103-11114	16.4	41
95	Betaproteobacteria Limnohabitans strains increase fecundity in the crustacean <i>Daphnia magna</i> : symbiotic relationship between major bacterioplankton and zooplankton in freshwater ecosystem. <i>Environmental Microbiology</i> , 2016 , 18, 2366-74	5.2	37
94	Constructing partial models of cells. <i>Cold Spring Harbor Perspectives in Biology</i> , 2010 , 2, a004945	10.2	33
93	Genomic integration and germline transmission of plasmid injected into crustacean <i>Daphnia magna</i> eggs. <i>PLoS ONE</i> , 2012 , 7, e45318	3.7	33
92	Comprehensive analysis of the effects of <i>Escherichia coli</i> ORFs on protein translation reaction. <i>Molecular and Cellular Proteomics</i> , 2008 , 7, 1530-40	7.6	31
91	Reaction dynamics analysis of a reconstituted protein translation system by computational modeling. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, E1336-E1344	11.5	30
90	Compartmentalization in a water-in-oil emulsion repressed the spontaneous amplification of RNA by Q beta replicase. <i>Biochemistry</i> , 2010 , 49, 1809-13	3.2	30
89	Nascent chain, mRNA, and ribosome complexes generated by a pure translation system. <i>Biochemical and Biophysical Research Communications</i> , 2007 , 352, 372-7	3.4	28
88	Importance of compartment formation for a self-encoding system. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2002 , 99, 7514-7	11.5	27
87	CRISPR/Cas-mediated knock-in via non-homologous end-joining in the crustacean <i>Daphnia magna</i> . <i>PLoS ONE</i> , 2017 , 12, e0186112	3.7	27
86	Heterodimeric TALENs induce targeted heritable mutations in the crustacean <i>Daphnia magna</i> . <i>Biology Open</i> , 2015 , 4, 364-9	2.2	26
85	Cell-free protein synthesis from a single copy of DNA in a glass microchamber. <i>Lab on A Chip</i> , 2012 , 12, 2704-11	7.2	25
84	Effects of compartment size on the kinetics of intracompartamental multimeric protein synthesis. <i>ACS Synthetic Biology</i> , 2012 , 1, 431-7	5.7	24
83	Kinetic analysis of β galactosidase and β glucuronidase tetramerization coupled with protein translation. <i>Journal of Biological Chemistry</i> , 2011 , 286, 22028-34	5.4	24

82	A 5RUTR-Overlapping LncRNA Activates the Male-Determining Gene doublesex1 in the Crustacean <i>Daphnia magna</i> . <i>Current Biology</i> , 2018 , 28, 1811-1817.e4	6.3	24
81	Symbiotic bacteria contribute to increasing the population size of a freshwater crustacean, <i>Daphnia magna</i> . <i>Environmental Microbiology Reports</i> , 2015 , 7, 364-72	3.7	23
80	Synthesis of functional proteins within liposomes. <i>Methods in Molecular Biology</i> , 2010 , 607, 243-56	1.4	23
79	Importance of translation-replication balance for efficient replication by the self-encoded replicase. <i>ChemBioChem</i> , 2008 , 9, 3023-8	3.8	23
78	Kinetic analysis of the entire RNA amplification process by Qbeta replicase. <i>Journal of Biological Chemistry</i> , 2007 , 282, 15516-27	5.4	23
77	Construction of an in Vitro Gene Screening System of the E. coli EmrE Transporter Using Liposome Display. <i>Analytical Chemistry</i> , 2016 , 88, 12028-12035	7.8	22
76	Construction of a gene screening system using giant unilamellar liposomes and a fluorescence-activated cell sorter. <i>Analytical Chemistry</i> , 2012 , 84, 5017-24	7.8	22
75	Functional Qbeta replicase genetically fusing essential subunits EF-Ts and EF-Tu with beta-subunit. <i>Journal of Bioscience and Bioengineering</i> , 2006 , 101, 421-6	3.3	22
74	Cell-free protein synthesis in a microchamber revealed the presence of an optimum compartment volume for high-order reactions. <i>ACS Synthetic Biology</i> , 2014 , 3, 347-52	5.7	20
73	Origin of lognormal-like distributions with a common width in a growth and division process. <i>Physical Review E</i> , 2011 , 83, 031118	2.4	20
72	Mapping the expression of the sex determining factor Doublesex1 in <i>Daphnia magna</i> using a knock-in reporter. <i>Scientific Reports</i> , 2017 , 7, 13521	4.9	19
71	In vitro membrane protein synthesis inside Sec translocon-reconstituted cell-sized liposomes. <i>Scientific Reports</i> , 2016 , 6, 36466	4.9	19
70	Co-option of the bZIP transcription factor Vrille as the activator of Doublesex1 in environmental sex determination of the crustacean <i>Daphnia magna</i> . <i>PLoS Genetics</i> , 2017 , 13, e1006953	6	17
69	Construction and characterization of protein libraries composed of secondary structure modules. <i>Protein Science</i> , 2002 , 11, 2631-43	6.3	17
68	TALEN-mediated homologous recombination in <i>Daphnia magna</i> . <i>Scientific Reports</i> , 2015 , 5, 18312	4.9	17
67	TALEN-mediated knock-in via non-homologous end joining in the crustacean <i>Daphnia magna</i> . <i>Scientific Reports</i> , 2016 , 6, 36252	4.9	16
66	Identification of giant unilamellar vesicles with permeability to small charged molecules. <i>RSC Advances</i> , 2014 , 4, 35224	3.7	16
65	Directed Evolution of Proteins through In Vitro Protein Synthesis in Liposomes. <i>Journal of Nucleic Acids</i> , 2012 , 2012, 923214	2.3	15

64	A novel sequence-specific RNA quantification method using nicking endonuclease, dual-labeled fluorescent DNA probe, and conformation-interchangeable oligo-DNA. <i>Rna</i> , 2008 , 14, 584-92	5.8	15
63	Liposome-Based in Vitro Evolution of Aminoacyl-tRNA Synthetase for Enhanced Pyrrolysine Derivative Incorporation. <i>ChemBioChem</i> , 2015 , 16, 1797-802	3.8	14
62	Robustness of a Reconstituted Escherichia coli Protein Translation System Analyzed by Computational Modeling. <i>ACS Synthetic Biology</i> , 2018 , 7, 1964-1972	5.7	13
61	Visualization of ecdysteroid activity using a reporter gene in the crustacean, Daphnia. <i>Marine Environmental Research</i> , 2014 , 93, 118-22	3.3	13
60	Optimization of mRNA design for protein expression in the crustacean Daphnia magna. <i>Molecular Genetics and Genomics</i> , 2014 , 289, 707-15	3.1	12
59	Early embryonic expression of a putative ecdysteroid-phosphate phosphatase in the water flea, Daphnia magna (Cladocera: Daphniidae). <i>Journal of Insect Science</i> , 2014 , 14, 181	2	12
58	Combinatorial approaches to novel proteins. <i>ChemBioChem</i> , 2004 , 5, 177-82	3.8	11
57	Quantitative analysis of cell-free synthesized membrane proteins at the stabilized droplet interface bilayer. <i>Chemical Communications</i> , 2018 , 54, 12226-12229	5.8	11
56	Effects of symbiotic bacteria on chemical sensitivity of Daphnia magna. <i>Marine Environmental Research</i> , 2017 , 128, 70-75	3.3	10
55	Class III Polyphosphate Kinase 2 Enzymes Catalyze the Pyrophosphorylation of Adenosine-5RMonophosphate. <i>ChemBioChem</i> , 2019 , 20, 2961-2967	3.8	10
54	Kinetic model of double-stranded RNA formation during long RNA replication by Q β replicase. <i>FEBS Letters</i> , 2013 , 587, 2565-71	3.8	10
53	Identification of two forms of Q β replicase with different thermal stabilities but identical RNA replication activity. <i>Journal of Biological Chemistry</i> , 2010 , 285, 37210-7	5.4	9
52	Chapter 2 - Detection and analysis of protein synthesis and RNA replication in giant liposomes. <i>Methods in Enzymology</i> , 2009 , 464, 19-30	1.7	8
51	Kinetic analysis of aptazyme-regulated gene expression in a cell-free translation system: modeling of ligand-dependent and -independent expression. <i>Rna</i> , 2012 , 18, 1458-65	5.8	8
50	Strategies for selection from protein libraries composed of de novo designed secondary structure modules. <i>Origins of Life and Evolution of Biospheres</i> , 2004 , 34, 151-7	1.5	8
49	Generation of white-eyed Daphnia magna mutants lacking scarlet function. <i>PLoS ONE</i> , 2018 , 13, e0205609	3.9	8
48	Membrane Curvature Affects the Formation of β Hemolysin Nanopores. <i>ACS Chemical Biology</i> , 2015 , 10, 1694-701	4.9	7
47	Fractal-shaped microchannel design for a kinetic analysis of biochemical reaction in a delay line. <i>Microfluidics and Nanofluidics</i> , 2012 , 13, 273-278	2.8	7

46	Compensatory evolution of a WW domain variant lacking the strictly conserved Trp residue. <i>Journal of Molecular Evolution</i> , 2008 , 66, 61-71	3.1	7
45	Sequence Conservation and Sexually Dimorphic Expression of the Ftz-F1 Gene in the Crustacean <i>Daphnia magna</i> . <i>PLoS ONE</i> , 2016 , 11, e0154636	3.7	6
44	Two Doublesex1 mutants revealed a tunable gene network underlying intersexuality in <i>Daphnia magna</i> . <i>PLoS ONE</i> , 2020 , 15, e0238256	3.7	6
43	In vitro synthesis of the human calcium transporter Letm1 within cell-sized liposomes and investigation of its lipid dependency. <i>Journal of Bioscience and Bioengineering</i> , 2019 , 127, 544-548	3.3	5
42	Different protein localizations on the inner and outer leaflet of cell-sized liposomes using cell-free protein synthesis. <i>Synthetic Biology</i> , 2018 , 3, ysy007	3.3	5
41	Sense-overlapping lncRNA as a decoy of translational repressor protein for dimorphic gene expression. <i>PLoS Genetics</i> , 2021 , 17, e1009683	6	5
40	Atrazine exposed phytoplankton causes the production of non-viable offspring on <i>Daphnia magna</i> . <i>Marine Environmental Research</i> , 2019 , 145, 177-183	3.3	4
39	Genomic integration and ligand-dependent activation of the human estrogen receptor α in the crustacean <i>Daphnia magna</i> . <i>PLoS ONE</i> , 2018 , 13, e0198023	3.7	4
38	Ribosome display for rapid protein evolution by consecutive rounds of mutation and selection. <i>Methods in Molecular Biology</i> , 2010 , 634, 257-67	1.4	4
37	Mutation of the Cytochrome P450 CYP360A8 Gene Increases Sensitivity to Paraquat in <i>Daphnia magna</i> . <i>Environmental Toxicology and Chemistry</i> , 2021 , 40, 1279-1288	3.8	4
36	Concurrent In Vitro Synthesis and Functional Detection of Nascent Activity of the KcsA Channel under a Membrane Potential. <i>ACS Synthetic Biology</i> , 2018 , 7, 1004-1011	5.7	3
35	Monitoring ecdysteroid activities using genetically encoded reporter gene in <i>Daphnia magna</i> . <i>Marine Environmental Research</i> , 2018 , 140, 375-381	3.3	3
34	Effects of ribosomes on the kinetics of Q β replication. <i>FEBS Letters</i> , 2014 , 588, 117-23	3.8	3
33	In vitro directed evolution of alpha-hemolysin by liposome display. <i>Biophysics (Nagoya-shi, Japan)</i> , 2015 , 11, 67-72		3
32	Complementation in an artificial genome replication system in liposomes. <i>ChemBioChem</i> , 2012 , 13, 2701-6	3.8	3
31	Evolutionary molecular engineering by random elongation mutagenesis. <i>Methods in Molecular Biology</i> , 2002 , 182, 221-30	1.4	3
30	Growth evaluation method by live imaging of <i>Daphnia magna</i> and its application to the estimation of an insect growth regulator. <i>Journal of Applied Toxicology</i> , 2015 , 35, 68-74	4.1	2
29	Bottom-up Creation of an Artificial Cell Covered with the Adhesive Bacterionanofiber Protein AtaA. <i>Journal of the American Chemical Society</i> , 2019 , 141, 19058-19066	16.4	2

28	Evolvability and Self-Replication of Genetic Information in Liposomes 2011 , 275-287		2
27	Roles of and cross-talk between ecdysteroid and sesquiterpenoid pathways in embryogenesis of branchiopod crustacean <i>Daphnia magna</i> . <i>PLoS ONE</i> , 2020 , 15, e0239893	3.7	2
26	Caloric restriction upregulates the expression of DNMT3.1, lacking the conserved catalytic domain, in <i>Daphnia magna</i> . <i>Genesis</i> , 2020 , 58, e23396	1.9	2
25	Development of a bicistronic expression system in the branchiopod crustacean <i>Daphnia magna</i> . <i>Genesis</i> , 2017 , 55, e23083	1.9	1
24	The evolutionary enhancement of genotype-phenotype linkages in the presence of multiple copies of genetic material. <i>ChemBioChem</i> , 2014 , 15, 2281-8	3.8	1
23	Constructive Approaches for the Origin of Life. <i>Cellular Origin and Life in Extreme Habitats</i> , 2012 , 289-303		1
22	In vitro selection of proteins that undergo covalent labeling with small molecules by thiol-disulfide exchange by using ribosome display. <i>ChemBioChem</i> , 2011 , 12, 962-9	3.8	1
21	Identification of conditions for efficient cell-sized liposome preparation using commercially available reconstituted in vitro transcription-translation system. <i>Journal of Bioscience and Bioengineering</i> , 2021 ,	3.3	1
20	Production of genome-edited <i>Daphnia</i> for heavy metal detection by fluorescence. <i>Scientific Reports</i> , 2020 , 10, 21490	4.9	1
19	DNMT3.1 controls trade-offs between growth, reproduction, and life span under starved conditions in <i>Daphnia magna</i> . <i>Scientific Reports</i> , 2021 , 11, 7326	4.9	1
18	Cell-Free Synthesis of Human Endothelin Receptors and Its Application to Ribosome Display.. <i>Analytical Chemistry</i> , 2022 ,	7.8	1
17	Reduction of histamine and enhanced spinning behavior of <i>Daphnia magna</i> caused by scarlet mutant. <i>Genesis</i> , 2021 , 59, e23403	1.9	0
16	1P212 Morphological changes of the lipid membrane induced by inliposome membrane protein synthesis(13B. Biological & Artificial membrane: Dynamics,Poster,The 52nd Annual Meeting of the Biophysical Society of Japan(BSJ2014)). <i>Seibutsu Butsuri</i> , 2014 , 54, S176	0	
15	Liposome Display: In Vitro Directed Evolution of Membrane Proteins. <i>Seibutsu Butsuri</i> , 2014 , 54, 146-149	0	
14	1YP1-01 What is the condition of realizing a self-replication system of genetic information in vitro?(1YP1 Early Research in Biophysics Award Candidate Presentations,The 47th Annual Meeting of the Biophysical Society of Japan). <i>Seibutsu Butsuri</i> , 2009 , 49, S1	0	
13	2P-228 What is the condition of realizing a self-replication system of genetic information in vitro?(Origin of life & Evolution,The 47th Annual Meeting of the Biophysical Society of Japan). <i>Seibutsu Butsuri</i> , 2009 , 49, S143	0	
12	1P070 Co-translational folding of beta-galactosidase and beta-glucuronidase in an in vitro translation system(Protein:Property,The 48th Annual Meeting of the Biophysical Society of Japan). <i>Seibutsu Butsuri</i> , 2010 , 50, S31	0	
11	1P291 1H1325 Effects of cell size on internal self-replication of genetic information(Origin of life & Evolution,Oral Presentations,The 48th Annual Meeting of the Biophysical Society of Japan). <i>Seibutsu Butsuri</i> , 2010 , 50, S71	0	

- 10 2P250 Detection of association and fusion of giant vesicles using fluorescence-activated cell sorter(The 48th Annual Meeting of the Biophysical Society of Japan). *Seibutsu Butsuri*, **2010**, 50, S126-S127
- 9 2P102 In vitro selection for covalent binding via disulfide interchange with ribosome display(The 48th Annual Meeting of the Biophysical Society of Japan). *Seibutsu Butsuri*, **2010**, 50, S100
- 8 3P-275 Quantitative analysis of interactions between the phospholipid membrane and encapsulated reaction systems in cell-sized liposomes(The 46th Annual Meeting of the Biophysical Society of Japan). *Seibutsu Butsuri*, **2008**, 48, S170
- 7 2S8-6 Dynamics of structure and internal reactions in liposomes explored by fluorescence-activated cell sorter(2S8 Giant Liposome Research Front Line,The 46th Annual Meeting of the Biophysical Society of Japan). *Seibutsu Butsuri*, **2008**, 48, S13
- 6 2P270 Inner aqueous volume distributions of cell-size liposomes in consideration of the inner-compartmentalization(Native and artificial biomembranes-structure and properties,Poster Presentations). *Seibutsu Butsuri*, **2007**, 47, S180
- 5 3P271 RNA-protein self-replicating system in liposome(The genesis of life, and biological evolution,Poster Presentations). *Seibutsu Butsuri*, **2007**, 47, S270
- 4 3P274 Experimental evolution of a primordial DNA binding protein(Proteins- protein engineering, and evolutionary engineering,Poster Presentations). *Seibutsu Butsuri*, **2007**, 47, S271
- 3 2P438 Strategy to evaluate the effect of individual E. coli protein on the protein translation machinery(48. Bioinformatics, genomics and proteomics (II),Poster Session,Abstract,Meeting Program of EABS & BSJ 2006). *Seibutsu Butsuri*, **2006**, 46, S405
- 2 Investigating Molecular Evolution in the Laboratory. *Seibutsu Butsuri*, **2010**, 50, 270-271
- 1 1C33 Volume Dependence of Cell-free Protein Synthesis Using a Glass Microchamber. *The Proceedings of the Bioengineering Conference Annual Meeting of BED/JSME*, **2014**, 2014.26, 91-92