Kenâ€ichiro Matsumoto

List of Publications by Year
in descending order

102 papers	2,952 citations	147566 31 h-index	197535 49 g-index
105 all docs	105 docs citations	105 times ranked	1809 citing authors

#	Article	IF	Citations
1	Biosynthesis of poly(glycolate-co-3-hydroxybutyrate-co-3-hydroxyhexanoate) in Escherichia coli expressing sequence-regulating polyhydroxyalkanoate synthase and medium-chain-length 3-hydroxyalkanoic acid coenzyme A ligase. Bioscience, Biotechnology and Biochemistry, 2022, 86, 217-223.	0.6	4
2	Directed Evolution of Sequence-Regulating Polyhydroxyalkanoate Synthase to Synthesize a Medium-Chain-Lengthâ€“Short-Chain-Length (MCLâ€“SCL) Block Copolymer. Biomacromolecules, 2022, 23, 1221-1231.	2.6	10
3	Versatile aliphatic polyester biosynthesis system for producing random and block copolymers composed of 2-, 3-, 4-, 5-, and 6-hydroxyalkanoates using the sequence-regulating polyhydroxyalkanoate synthase PhaCAR. Microbial Cell Factories, 2022, 21, 84.	1.9	7
4	Evolution of polyhydroxyalkanoate synthesizing systems toward a sustainable plastic industry. Polymer Journal, 2021, 53, 67-79.	1.3	32
5	Artificial polyhydroxyalkanoate poly[2-hydroxybutyrate-block-3-hydroxybutyrate] elastomer-like material. Scientific Reports, 2021, 11, 22446.	1.6	12
6	Synergy of valine and threonine supplementation on poly(2-hydroxybutyrate-block-3-hydroxybutyrate) synthesis in engineered Escherichia coli expressing chimeric polyhydroxyalkanoate synthase. Journal of Bioscience and Bioengineering, 2020, 129, 302-306.	1.1	9
7	characterization of d-LA homo-oligomer degradation by the isolated strains. Polymer Degradation and Stability, 2020, 179, 109231.	2.7	11
8	Biosynthesis of Random-Homo Block Copolymer Poly[Glycolate-ran-3-Hydroxybutyrate (3HB)]-b-Poly(3HB) Using Sequence-Regulating Chimeric Polyhydroxyalkanoate Synthase in Escherichia coli. Frontiers in Bioengineering and Biotechnology, 2020, 8, 612991.	2.0	4
9	Increased Production and Molecular Weight of Artificial Polyhydroxyalkanoate Poly(2-hydroxybutyrate) Above the Glass Transition Temperature Threshold. Frontiers in Bioengineering and Biotechnology, 2019, 7, 177.	2.0	10
10	Ribulose-1,5-bisphosphate carboxylase/oxygenase (RuBisCO)-mediated de novo synthesis of glycolate-based polyhydroxyalkanoate in Escherichia coli. Journal of Bioscience and Bioengineering, 2019, 128, 302-306.	1.1	12
11	Biosynthesis of novel lactate-based polymers containing medium-chain-length 3-hydroxyalkanoates by recombinant Escherichia coli strains from glucose. Journal of Bioscience and Bioengineering, 2019, 128, 191-197.	1.1	10
12	Enhancement of lactate fraction in poly(lactate-co-3-hydroxybutyrate) synthesized by Escherichia coli harboring the D-lactate dehydrogenase gene from Lactobacillus acetotolerans HT. Journal of General and Applied Microbiology, 2019, 65, 204-208.	0.4	10
13	Influence of Unusual Co-substrates on the Biosynthesis of Medium-Chain-Length Polyhydroxyalkanoates Produced in Multistage Chemostat. Frontiers in Bioengineering and Biotechnology, 2019, 7, 301.	2.0	6
14	High-cell density culture of poly(lactate-co-3-hydroxybutyrate)-producing Escherichia coli by using glucose/xylose-switching fed-batch jar fermentation. Journal of Bioscience and Bioengineering, 2019, 127, 721-725.	1.1	20
15	Enhanced production of lactate-based polyesters in Escherichia coli from a mixture of glucose and xylose by Mlc-mediated catabolite derepression. Journal of Bioscience and Bioengineering, 2018, 125, 365-370.	1.1	8
16	In Vitro Analysis of <scp>d</scp>-Lactyl-CoA-Polymerizing Polyhydroxyalkanoate Synthase in Polylactate and Poly(lactate-co-3-hydroxybutyrate) Syntheses. Biomacromolecules, 2018, 19, 2889-2895.	2.6	18
17	Dynamic Changes of Intracellular Monomer Levels Regulate Block Sequence of Polyhydroxyalkanoates in Engineered Escherichia coli. Biomacromolecules, 2018, 19, 662-671.	2.6	27
18	Site-directed saturation mutagenesis of polyhydroxylalkanoate synthase for efficient microbial production of poly[(R)-2-hydroxybutyrate]. Journal of Bioscience and Bioengineering, 2018, 125, 632-636.	1.1	9

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19	Microbial Secretion of D-Lactate-Based Oligomers. ACS Sustainable Chemistry and Engineering, 2017, 5, 2360-2367.	3.2	24
20	Xylose-based hydrolysate from eucalyptus extract as feedstock for poly(lactate-co-3-hydroxybutyrate) production in engineered Escherichia coli. Process Biochemistry, 2017, 54, 102-105.	1.8	19
21	Genome-wide screening of transcription factor deletion targets in Escherichia coli for enhanced production of lactate-based polyesters. Journal of Bioscience and Bioengineering, 2017, 123, 535-539.	1.1	7
22	Microbial secretion of lactate-enriched oligomers for efficient conversion into lactide: A biological shortcut to polylactide. Journal of Bioscience and Bioengineering, 2017, 124, 204-208.	1.1	14
23	Effect of monomeric composition on the thermal, mechanical and crystalline properties of poly[(R)-lactate-co-(R)-3-hydroxybutyrate]. Polymer, 2017, 122, 169-173.	1.8	16
24	Effect of acetate as a co-feedstock on the production of poly(lactate-co-3-hydroxyalkanoate) by pflA-deficient Escherichia coli RSC10. Journal of Bioscience and Bioengineering, 2017, 123, 547-554.	1.1	10
25	In vivo target exploration of apidaecin based on Acquired Resistance induced by Gene Overexpression (ARGO assay). Scientific Reports, 2017, 7, 12136.	1.6	14
26	Investigation of the Escherichia coli membrane transporters involved in the secretion of d-lactate-based oligomers by loss-of-function screening. Journal of Bioscience and Bioengineering, 2017, 124, 635-640.	1.1	11
27	Synthesis of lactate (LA)-based poly(ester-urethane) using hydroxyl-terminated LA-based oligomers from a microbial secretion system. Journal of Polymer Research, 2017, 24, 1.	1.2	13
28	Incorporation of Glycolate Units Promotes Hydrolytic Degradation in Flexible Poly(glycolate-co-3-hydroxybutyrate) Synthesized by Engineered Escherichia coli. ACS Biomaterials Science and Engineering, 2017, 3, 3058-3063.	2.6	15
29	Sucrose supplementation suppressed the growth inhibition in polyhydroxyalkanoate-producing plants. Plant Biotechnology, 2017, 34, 39-43.	0.5	2
30	Consolidated bioprocessing of poly(lactate-co-3-hydroxybutyrate) from xylan as a sole feedstock by genetically-engineered Escherichia coli. Journal of Bioscience and Bioengineering, 2016, 122, 406-414.	1.1	23
31	Co-crystallization phenomena in biosynthesized isotactic poly[(R)-lactate-co-(R)-2-hydroxybutyrate]s with various lactate unit ratios. Polymer Degradation and Stability, 2016, 132, 137-144.	2.7	12
32	Microbial production of poly(lactate-co-3-hydroxybutyrate) from hybrid Miscanthus-derived sugars. Bioscience, Biotechnology and Biochemistry, 2016, 80, 818-820.	0.6	11
33	MtgA Deletion-Triggered Cell Enlargement of Escherichia coli for Enhanced Intracellular Polyester Accumulation. PLoS ONE, 2015, 10, e0125163.	1.1	19
34	Enhanced poly(3-hydroxybutyrate) production in transgenic tobacco BY-2 cells using engineered acetoacetyl-CoA reductase. Bioscience, Biotechnology and Biochemistry, 2015, 79, 986-988.	0.6	6
35	Indirect positive effects of a sigma factor RpoN deletion on the lactate-based polymer production inEscherichia coli. Bioengineered, 2015, 6, 307-311.	1.4	24
36	Molecular weight-dependent degradation of d-lactate-containing polyesters by polyhydroxyalkanoate depolymerases from Variovorax sp. C34 and Alcaligenes faecalis T1. Applied Microbiology and Biotechnology, 2015, 99, 9555-9563.	1.7	12

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37	Enhanced cellular content and lactate fraction of the poly(lactate-co-3-hydroxybutyrate) polyester produced in recombinant Escherichia coli by the deletion of Ïƒ factor RpoN. Journal of Bioscience and Bioengineering, 2015, 119, 427-429.	1.1	9
38	Microbial Factory for the Production of Polyesters: A New Platform of Corynebacterium glutamicum. , 2015, , 139-150.		1
39	Deletion of thepflAgene inEscherichia coliLS5218 and its effects on the production of polyhydroxyalkanoates using beechwood xylan as a feedstock. Bioengineered, 2014, 5, 284-287.	1.4	18
40	Improved production of poly(lactic acid)-like polyester based on metabolite analysis to address the rate-limiting step. AMB Express, 2014, 4, 83.	1.4	22
41	Enhanced production of poly(lactate-co-3-hydroxybutyrate) from xylose in engineered Escherichia coli overexpressing a galactitol transporter. Applied Microbiology and Biotechnology, 2014, 98, 2453-2460.	1.7	31
42	Engineering Escherichia coli for Improved Production of Short-Chain-Length-co-Medium-Chain-Length Poly[(R)-3-hydroxyalkanoate] (SCL-co-MCL PHA) Copolymers from Renewable Nonfatty Acid Feedstocks. ACS Sustainable Chemistry and Engineering, 2014, 2, 1879-1887.	3.2	31
43	Enzymatic characterization of a depolymerase from the isolated bacterium Variovorax sp. C34 that degrades poly(enriched lactate-co-3-hydroxybutyrate). Polymer Degradation and Stability, 2014, 110, 44-49.	2.7	15
44	Engineering of class I lactate-polymerizing polyhydroxyalkanoate synthases from Ralstonia eutropha that synthesize lactate-based polyester with a block nature. Applied Microbiology and Biotechnology, 2013, 97, 3441-3447.	1.7	24
45	Efficient (R)-3-hydroxybutyrate production using acetyl CoA-regenerating pathway catalyzed by coenzyme A transferase. Applied Microbiology and Biotechnology, 2013, 97, 205-210.	1.7	27
46	Effectiveness of xylose utilization for high yield production of lactate-enriched P(lactate-co-3-hydroxybutyrate) using a lactate-overproducing strain of Escherichia coli and an evolved lactate-polymerizing enzyme. Metabolic Engineering, 2013, 15, 159-166.	3.6	54
47	Biosynthetic polyesters consisting of 2-hydroxyalkanoic acids: current challenges and unresolved questions. Applied Microbiology and Biotechnology, 2013, 97, 8011-8021.	1.7	38
48	Single-step production of polyhydroxybutyrate from starch by using Î±-amylase cell-surface displaying system of Corynebacterium glutamicum. Journal of Bioscience and Bioengineering, 2013, 115, 12-14.	1.1	39
49	Enzyme and metabolic engineering for the production of novel biopolymers: crossover of biological and chemical processes. Current Opinion in Biotechnology, 2013, 24, 1054-1060.	3.3	43
50	One-Pot Microbial Production, Mechanical Properties, and Enzymatic Degradation of Isotactic P[(R)-2-hydroxybutyrate] and Its Copolymer with (R)-Lactate. Biomacromolecules, 2013, 14, 1913-1918.	2.6	37
51	Microbial Plastic Factory: Synthesis and Properties of the New Lactate-Based Biopolymers. ACS Symposium Series, 2013, , 175-197.	0.5	2
52	Directed Evolution and Structural Analysis of NADPH-Dependent Acetoacetyl Coenzyme A (Acetoacetyl-CoA) Reductase from Ralstonia eutropha Reveals Two Mutations Responsible for Enhanced Kinetics. Applied and Environmental Microbiology, 2013, 79, 6134-6139.	1.4	43
53	Metabolic Chemistry of Microbial Production of Lactic Acid and Lactate-based Polyesters. Kagaku To Seibutsu, 2013, 51, 448-456.	0.0	0
54	Development of Integrated Process for Microbial Bioplastic Production from Plant Biomass. Kobunshi Ronbunshu, 2013, 70, 675-683.	0.2	0

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55	Biological Lactate-Polymers Synthesized by One-Pot Microbial Factory: Enzyme and Metabolic Engineering. ACS Symposium Series, 2012, , 213-235.	0.5	8
56	Polyhydroxyalkanoates production from cellulose hydrolysate in Escherichia coli LS5218 with superior resistance to 5-hydroxymethylfurfural. Journal of Bioscience and Bioengineering, 2012, 113, 70-72.	1.1	45
57	Flavin-binding of azoreductase: Direct evidences for dual-binding property of apo-azoreductase with FMN and FAD. Journal of Molecular Catalysis B: Enzymatic, 2012, 74, 204-208.	1.8	7
58	Engineered Corynebacterium glutamicum as an endotoxin-free platform strain for lactate-based polyester production. Applied Microbiology and Biotechnology, 2012, 93, 1917-1925.	1.7	85
59	Biosynthesis of glycolate-based polyesters containing medium-chain-length 3-hydroxyalkanoates in recombinant Escherichia coli expressing engineered polyhydroxyalkanoate synthase. Journal of Biotechnology, 2011, 156, 214-217.	1.9	46
60	One-pot Production of Lactate-Based Polyesters Using Engineered Microbes Expressing Lactate-Polymerizing Enzyme. Kobunshi Ronbunshu, 2011, 68, 271-280.	0.2	2
61	Production of Polyhydroxyalkanoate Copolymers in Transgenic Plants Expressing Engineered Enzymes. Kobunshi Ronbunshu, 2011, 68, 562-569.	0.2	0
62	Improved polyhydroxybutyrate (PHB) production in transgenic tobacco by enhancing translation efficiency of bacterial PHB biosynthetic genes. Journal of Bioscience and Bioengineering, 2011, 111, 485-488.	1.1	19
63	Chemo-enzymatic synthesis of polyhydroxyalkanoate (PHA) incorporating 2-hydroxybutyrate by wild-type class I PHA synthase from Ralstonia eutropha. Applied Microbiology and Biotechnology, 2011, 92, 509-517.	1.7	42
64	Chemo-microbial conversion of cellulose into polyhydroxybutyrate through ruthenium-catalyzed hydrolysis of cellulose into glucose. Bioresource Technology, 2011, 102, 3564-3567.	4.8	38
65	Production of poly(3-hydroxybutyrate-co-3-hydroxyvalerate) in recombinant Corynebacterium glutamicum using propionate as a precursor. Journal of Biotechnology, 2011, 152, 144-146.	1.9	27
66	Lactate fraction dependent mechanical properties of semitransparent poly(lactate-co-3-hydroxybutyrate)s produced by control of lactyl-CoA monomer fluxes in recombinant Escherichia coli. Journal of Biotechnology, 2011, 154, 255-260.	1.9	58
67	Biosynthesis of a lactate (LA)-based polyester with a 96 mol% LA fraction and its application to stereocomplex formation. Polymer Degradation and Stability, 2011, 96, 499-504.	2.7	50
68	A New Pathway for Poly(3-hydroxybutyrate) Production inEscherichia coliandCorynebacterium glutamicumby Functional Expression of a New Acetoacetyl-coenzyme A Synthase. Bioscience, Biotechnology and Biochemistry, 2011, 75, 364-366.	0.6	17
69	Quick and efficient method for genetic transformation of biopolymerâ€producing bacteria. Journal of Chemical Technology and Biotechnology, 2010, 85, 775-778.	1.6	16
70	Biosynthesis of novel terpolymers poly(lactate-co-3-hydroxybutyrate-co-3-hydroxyvalerate)s in lactate-overproducing mutant Escherichia coli JW0885 by feeding propionate as a precursor of 3-hydroxyvalerate. Applied Microbiology and Biotechnology, 2010, 85, 949-954.	1.7	52
71	Characterization of thermostable FMN-dependent NADH azoreductase from the moderate thermophile Geobacillus stearothermophilus. Applied Microbiology and Biotechnology, 2010, 86, 1431-1438.	1.7	50
72	Enzymatic and whole-cell synthesis of lactate-containing polyesters: toward the complete biological production of polylactate. Applied Microbiology and Biotechnology, 2010, 85, 921-932.	1.7	71

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73	Establishment of a metabolic pathway to introduce the 3-hydroxyhexanoate unit into LA-based polyesters via a reverse reaction of Î²-oxidation in Escherichia coli LS5218. Polymer Degradation and Stability, 2010, 95, 1340-1344.	2.7	29
74	A Novel Factor FLOURY ENDOSPERM2 Is Involved in Regulation of Rice Grain Size and Starch Quality. Plant Cell, 2010, 22, 3280-3294.	3.1	240
75	A New Beneficial Mutation inPseudomonassp. 61-3 Polyhydroxyalkanoate (PHA) Synthase for Enhanced Cellular Content of 3-Hydroxybutyrate-Based PHA Explored Using Its Enzyme Homolog as a Mutation Template. Bioscience, Biotechnology and Biochemistry, 2010, 74, 1710-1712.	0.6	15
76	Production of P(3-hydroxybutyrate-co-3-hydroxyhexanoate-co-3-hydroxyoctanoate) Terpolymers Using a Chimeric PHA Synthase in RecombinantRalstonia eutrophaandPseudomonas putida. Bioscience, Biotechnology and Biochemistry, 2010, 74, 1716-1718.	0.6	11
77	Flow cytometric analysis of the contributing factors for antimicrobial activity enhancement of cell-penetrating type peptides: Case study on engineered apidaecins. Biochemical and Biophysical Research Communications, 2010, 395, 7-10.	1.0	6
78	Adjustable Mutations in Lactate (LA)-Polymerizing Enzyme for the Microbial Production of LA-Based Polyesters with Tailor-Made Monomer Composition. Biomacromolecules, 2010, 11, 815-819.	2.6	67
79	Dual production of poly(3-hydroxybutyrate) and glutamate using variable biotin concentrations in Corynebacterium glutamicum. Journal of Bioscience and Bioengineering, 2009, 107, 409-411.	1.1	17
80	Engineering of polyhydroxyalkanoate synthase by Ser477X/Gln481X saturation mutagenesis for efficient production of 3-hydroxybutyrate-based copolyesters. Applied Microbiology and Biotechnology, 2009, 84, 1117-1124.	1.7	33
81	Kinetic Analysis of Engineered Polyhydroxyalkanoate Synthases with Broad Substrate Specificity. Polymer Journal, 2009, 41, 237-240.	1.3	14
82	The Hydrophobicity in a Chemically Modified Side-Chain of Cysteine Residues of Thanatin Is Related to Antimicrobial Activity againstMicrococcus luteus. Bioscience, Biotechnology and Biochemistry, 2009, 73, 1683-1684.	0.6	5
83	Production of Short-Chain-Length/Medium-Chain-Length Polyhydroxyalkanoate (PHA) Copolymer in the Plastid of Arabidopsis thaliana Using an Engineered 3-Ketoacyl-acyl Carrier Protein Synthase III. Biomacromolecules, 2009, 10, 686-690.	2.6	34
84	Comparative Enzymatic Analysis of Azoreductases fromBacillussp. B29. Bioscience, Biotechnology and Biochemistry, 2009, 73, 1209-1211.	0.6	25
85	Microbial Production of Lactate-Enriched Poly[(R)-lactate-co-(R)-3-hydroxybutyrate] with Novel Thermal Properties. Biomacromolecules, 2009, 10, 677-681.	2.6	83
86	A unique post-translational processing of an exo-Î²-1,3-glucanase of Penicillium sp. KH10 expressed in Aspergillus oryzae. Protein Expression and Purification, 2009, 67, 126-131.	0.6	14
87	Chimeric Enzyme Composed of Polyhydroxyalkanoate (PHA) Synthases from Ralstonia eutropha and Aeromonas caviae Enhances Production of PHAs in Recombinant Escherichia coli. Biomacromolecules, 2009, 10, 682-685.	2.6	43
88	FabG Mediates Polyhydroxyalkanoate Production from Both Related and Nonrelated Carbon Sources in Recombinant Escherichia coli LS5218. Biotechnology Progress, 2008, 24, 342-351.	1.3	32
89	A microbial factory for lactate-based polyesters using a lactate-polymerizing enzyme. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 17323-17327.	3.3	261
90	Microbial Factory for the Production of Bioplastics. Journal of Fiber Science and Technology, 2008, 64, P.365-P.370.	0.0	0

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91	Improvement of Poly(3-Hydroxybutyrate) [P(3HB)] Production in Corynebacterium glutamicum by Codon Optimization, Point Mutation and Gene Dosage of P(3HB) Biosynthetic Genes. Journal of Bioscience and Bioengineering, 2007, 104, 457-463.	1.1	57
92	In Vivo and in Vitro Characterization of Ser477X Mutations in Polyhydroxyalkanoate (PHA) Synthase 1 fromPseudomonassp. 61â˜3:Â Effects of Beneficial Mutations on Enzymatic Activity, Substrate Specificity, and Molecular Weight of PHA. Biomacromolecules, 2006, 7, 2436-2442.	2.6	50
93	Synthesis of Short-chain-length/Medium-chain-length Polyhydroxyalkanoate (PHA) Copolymers in Peroxisome of the Transgenic Arabidopsis Thaliana Harboring the PHA Synthase Gene from Pseudomonas sp. 61-3. Journal of Polymers and the Environment, 2006, 14, 369-374.	2.4	26
94	Creation of Eco-friendly Plastics by Biotechnological Application. Oleoscience, 2005, 5, 523-532.	0.0	0
95	Synergistic Effects of Glu130Asp Substitution in the Type II Polyhydroxyalkanoate (PHA) Synthase:Â Enhancement of PHA Production and Alteration of Polymer Molecular Weight. Biomacromolecules, 2005, 6, 99-104.	2.6	60
96	Enhancement of Poly(3-hydroxybutyrate-co-3-hydroxyvalerate) Production in the TransgenicArabidopsisthalianaby the in Vitro Evolved Highly Active Mutants of Polyhydroxyalkanoate (PHA) Synthase fromAeromonascaviae. Biomacromolecules, 2005, 6, 2126-2130.	2.6	31
97	Alteration of Substrate Chain-Length Specificity of Type II Synthase for Polyhydroxyalkanoate Biosynthesis by in Vitro Evolution:Â in Vivo and in Vitro Enzyme Assays. Biomacromolecules, 2004, 5, 480-485.	2.6	108
98	Isolation and Characterization of Polyhydroxyalkanoates Inclusions and Their Associated Proteins inPseudomonassp. 61-3. Biomacromolecules, 2002, 3, 787-792.	2.6	31
99	Direct observation of polyhydroxyalkanoate chains by atomic force microscopy. Ultramicroscopy, 2002, 91, 157-164.	0.8	12
100	Biosynthesis of biodegradable polyesters from renewable carbon sources by recombinant bacteria. Polymer International, 2002, 51, 899-906.	1.6	22
101	Biosynthesis of Poly(3-hydroxybutyrate-co-3-hydroxyalkanoates) Copolymer from Sugars by RecombinantRalstoniaeutrophaHarboring thephaC1Psand thephaGPsGenes ofPseudomonassp. 61-3. Biomacromolecules, 2001, 2, 934-939.	2.6	50
102	Cloning and Characterization of thePseudomonassp. 61-3phaGGene Involved in Polyhydroxyalkanoate Biosynthesis. Biomacromolecules, 2001, 2, 142-147.	2.6	33