Seiichi Taguchi

List of Publications by Year
in descending order

66 papers	1,886 citations	304743 22 h-index	276875 41 g-index
71 all docs	71 docs citations	71 times ranked	977 citing authors

#	Article	IF	Citations
1	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.	7.1	261
2	Evolution of Polyhydroxyalkanoate (PHA) Production System by â€œEnzyme Evolutionâ€ Successful Case Studies of Directed Evolution. Macromolecular Bioscience, 2004, 4, 145-156.	4.1	137
3	Enhanced Synthesis of Poly(3-hydroxybutyrate) in Recombinant Escherichia coli by Means of Error-Prone PCR Mutagenesis, Saturation Mutagenesis, and In Vitro Recombination of the Type II Polyhydroxyalkanoate Synthase Gene. Journal of Biochemistry, 2003, 133, 139-145.	1.7	119
4	PHA synthase engineering toward superbiocatalysts for custom-made biopolymers. Applied Microbiology and Biotechnology, 2007, 73, 969-979.	3.6	118
5	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.	5.4	108
6	Engineered Corynebacterium glutamicum as an endotoxin-free platform strain for lactate-based polyester production. Applied Microbiology and Biotechnology, 2012, 93, 1917-1925.	3.6	85
7	Microbial Production of Lactate-Enriched Poly[(<i>R</i>)-lactate-<i>co</i>-(<i>R</i>)-3-hydroxybutyrate] with Novel Thermal Properties. Biomacromolecules, 2009, 10, 677-681.	5.4	83
8	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.	3.8	58
9	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.	3.8	46
10	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.	5.4	43
11	PHA synthase (PhaC): interpreting the functions of bioplastic-producing enzyme from a structural perspective. Applied Microbiology and Biotechnology, 2019, 103, 1131-1141.	3.6	43
12	Biosynthetic polyesters consisting of 2-hydroxyalkanoic acids: current challenges and unresolved questions. Applied Microbiology and Biotechnology, 2013, 97, 8011-8021.	3.6	38
13	One-Pot Microbial Production, Mechanical Properties, and Enzymatic Degradation of Isotactic P[(<i>R</i>)-2-hydroxybutyrate] and Its Copolymer with (<i>R</i>)-Lactate. Biomacromolecules, 2013, 14, 1913-1918.	5.4	37
14	Microbial Production of Biodegradable Lactate-Based Polymers and Oligomeric Building Blocks From Renewable and Waste Resources. Frontiers in Bioengineering and Biotechnology, 2020, 8, 618077.	4.1	34
15	Evolution of polyhydroxyalkanoate synthesizing systems toward a sustainable plastic industry. Polymer Journal, 2021, 53, 67-79.	2.7	32
16	Dynamic Changes of Intracellular Monomer Levels Regulate Block Sequence of Polyhydroxyalkanoates in Engineered <i>Escherichia coli</i>. Biomacromolecules, 2018, 19, 662-671.	5.4	27
17	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.	5.0	26
18	Advances and needs for endotoxin-free production strains. Applied Microbiology and Biotechnology, 2015, 99, 9349-9360.	3.6	26

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19	InÂvitro synthesis of polyhydroxyalkanoates using thermostable acetyl-CoA synthetase, CoA transferase, and PHA synthase from thermotorelant bacteria. Journal of Bioscience and Bioengineering, 2016, 122, 660-665.	2.2	25
20	Indirect positive effects of a sigma factor RpoN deletion on the lactate-based polymer production in<i>Escherichia coli</i>. Bioengineered, 2015, 6, 307-311.	3.2	24
21	Microbial Secretion of D-Lactate-Based Oligomers. ACS Sustainable Chemistry and Engineering, 2017, 5, 2360-2367.	6.7	24
22	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.	2.2	23
23	Improved production of poly(lactic acid)-like polyester based on metabolite analysis to address the rate-limiting step. AMB Express, 2014, 4, 83.	3.0	22
24	Structures of AzrA and of AzrC complexed with substrate or inhibitor: insight into substrate specificity and catalytic mechanism. Acta Crystallographica Section D: Biological Crystallography, 2014, 70, 553-564.	2.5	21
25	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.	2.2	20
26	An extra large insertion in the polyhydroxyalkanoate synthase fromDelftia acidovoransDS-17: its deletion effects and relation to cellular proteolysis. FEMS Microbiology Letters, 2004, 231, 77-83.	1.8	19
27	MtgA Deletion-Triggered Cell Enlargement of Escherichia coli for Enhanced Intracellular Polyester Accumulation. PLoS ONE, 2015, 10, e0125163.	2.5	19
28	In Vitro Analysis of <scp>d</scp>-Lactyl-CoA-Polymerizing Polyhydroxyalkanoate Synthase in Polylactate and Poly(lactate-<i>co</i>-3-hydroxybutyrate) Syntheses. Biomacromolecules, 2018, 19, 2889-2895.	5.4	18
29	Targeted Engineering of the Antibacterial Peptide Apidaecin, Based on an In Vivo Monitoring Assay System. Applied and Environmental Microbiology, 2009, 75, 1460-1464.	3.1	16
30	Quick and efficient method for genetic transformation of biopolymerâ€producing bacteria. Journal of Chemical Technology and Biotechnology, 2010, 85, 775-778.	3.2	16
31	Effect of monomeric composition on the thermal, mechanical and crystalline properties of poly[(R)-lactate-co-(R)-3-hydroxybutyrate]. Polymer, 2017, 122, 169-173.	3.8	16
32	Superior thermal stability and fast crystallization behavior of a novel, biodegradable Î±-methylated bacterial polyester. NPG Asia Materials, 2021, 13, .	7.9	16
33	Incorporation of Glycolate Units Promotes Hydrolytic Degradation in Flexible Poly(glycolate-<i>co</i>-3-hydroxybutyrate) Synthesized by Engineered <i>Escherichia coli</i>. ACS Biomaterials Science and Engineering, 2017, 3, 3058-3063.	5.2	15
34	Kinetic Analysis of Engineered Polyhydroxyalkanoate Synthases with Broad Substrate Specificity. Polymer Journal, 2009, 41, 237-240.	2.7	14
35	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.	2.2	14
36	In vivo target exploration of apidaecin based on Acquired Resistance induced by Gene Overexpression (ARGO assay). Scientific Reports, 2017, 7, 12136.	3.3	14

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37	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.	2.4	13
38	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.	3.6	12
39	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.	2.2	12
40	Effect of introducing a disulfide bridge on the thermostability of microbial transglutaminase from Streptomyces mobaraensis. Applied Microbiology and Biotechnology, 2021, 105, 2737-2745.	3.6	12
41	Microbial production of poly(lactate-<i>co</i>-3-hydroxybutyrate) from hybrid <i>Miscanthus</i>-derived sugars. Bioscience, Biotechnology and Biochemistry, 2016, 80, 818-820.	1.3	11
42	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.	2.2	11
43	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.	2.2	10
44	Microbial Secretion Platform for 3â€Hydroxybutyrate Oligomer and Its Endâ€Capped Forms Using Chain Transfer Reactionâ€Mediated Polyhydroxyalkanoate Synthases. Biotechnology Journal, 2019, 14, 1900201.	3.5	10
45	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.	2.2	10
46	Enhancement of lactate fraction in poly(lactate-<i>co</i>-3-hydroxybutyrate) synthesized by <i>Escherichia coli</i> harboring the D-lactate dehydrogenase gene from <i>Lactobacillus acetotolerans</i> HT. Journal of General and Applied Microbiology, 2019, 65, 204-208.	0.7	10
47	Bioconversion of biphenyl to a polyhydroxyalkanoate copolymer by Alcaligenes denitrificans A41. AMB Express, 2020, 10, 155.	3.0	10
48	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.	2.2	9
49	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.	2.2	9
50	The influence of medium composition on the microbial secretory production of hydroxyalkanoate oligomers. Journal of General and Applied Microbiology, 2021, 67, 134-141.	0.7	9
51	Biological Lactate-Polymers Synthesized by One-Pot Microbial Factory: Enzyme and Metabolic Engineering. ACS Symposium Series, 2012, , 213-235.	0.5	8
52	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.	2.2	8
53	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.	2.2	7
54	Microbial oversecretion of (R)-3-hydroxybutyrate oligomer with diethylene glycol terminal as a macromonomer for polyurethane synthesis. International Journal of Biological Macromolecules, 2021, 167, 1290-1296.	7.5	7

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55	Designer enzyme for green materials innovation: Lactate-polymerizing enzyme as a key catalyst. Frontiers of Chemical Science and Engineering, 2017, 11, 139-142.	4.4	6
56	Microbial Production and Properties of LA-based Polymers and Oligomers from Renewable Feedstock. Biofuels and Biorefineries, 2019, , 361-390.	0.5	6
57	Changed bacterial community in the river water samples upon introduction of biodegradable poly(3-hydroxybutyrate). Polymer Degradation and Stability, 2020, 176, 109144.	5.8	5
58	Crystal structure and kinetic analyses of a hexameric form of (<i>S</i>)-3-hydroxybutyryl-CoA dehydrogenase from<i>Clostridium acetobutylicum</i>. Acta Crystallographica Section F, Structural Biology Communications, 2018, 74, 733-740.	0.8	4
59	Biosynthesis, Properties, and Biodegradation of Lactate-Based Polymers. ACS Symposium Series, 2015, , 113-131.	0.5	3
60	Microbial Plastic Factory: Synthesis and Properties of the New Lactate-Based Biopolymers. ACS Symposium Series, 2013, , 175-197.	0.5	2
61	Sucrose supplementation suppressed the growth inhibition in polyhydroxyalkanoate-producing plants. Plant Biotechnology, 2017, 34, 39-43.	1.0	2
62	Microbial Secretion System of Lactate-Based Oligomers and Its Application. ACS Symposium Series, 2018, , 41-60.	0.5	2
63	Synthesis of Polyesters III: Acyltransferase as Catalyst. Green Chemistry and Sustainable Technology, 2019, , 199-231.	0.7	2
64	Optimization of Culture Conditions for Secretory Production of 3-Hydroxybutyrate Oligomers Using Recombinant Escherichia coli. Frontiers in Bioengineering and Biotechnology, 2022, 10, 829134.	4.1	2
65	Enhanced Production of (R)-3-Hydroxybutyrate Oligomers by Coexpression of Molecular Chaperones in Recombinant Escherichia coli Harboring a Polyhydroxyalkanoate Synthase Derived from Bacillus cereus YB-4. Microorganisms, 2022, 10, 458.	3.6	1
66	Editorial: Microbial Production of Biopolyesters and Their Building Blocks: Opportunities and Challenges. Frontiers in Bioengineering and Biotechnology, 2021, 9, 777265.	4.1	1