

Seiichi Taguchi

List of Publications by Year in descending order

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66
papers

1,886
citations

304602

22
h-index

276775

41
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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.	3.3	261
2	Evolution of Polyhydroxyalkanoate(PHA) Production System by "Enzyme Evolution" Successful Case Studies of Directed Evolution. Macromolecular Bioscience, 2004, 4, 145-156.	2.1	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.	0.9	119
4	PHA synthase engineering toward superbicatalysts for custom-made biopolymers. Applied Microbiology and Biotechnology, 2007, 73, 969-979.	1.7	118
5	Alteration of Substrate Chain-Length Specificity of Type II Synthase for Polyhydroxyalkanoate Biosynthesis by in Vitro Evolution: A in Vivo and in Vitro Enzyme Assays. Biomacromolecules, 2004, 5, 480-485.	2.6	108
6	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
7	Microbial Production of Lactate-Enriched Poly[(R)-lactate-co-(R)-3-hydroxybutyrate] with Novel Thermal Properties. Biomacromolecules, 2009, 10, 677-681.	2.6	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.	1.9	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.	1.9	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.	2.6	43
11	PHA synthase (PhaC): interpreting the functions of bioplastic-producing enzyme from a structural perspective. Applied Microbiology and Biotechnology, 2019, 103, 1131-1141.	1.7	43
12	Biosynthetic polyesters consisting of 2-hydroxyalkanoic acids: current challenges and unresolved questions. Applied Microbiology and Biotechnology, 2013, 97, 8011-8021.	1.7	38
13	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
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.	2.0	34
15	Evolution of polyhydroxyalkanoate synthesizing systems toward a sustainable plastic industry. Polymer Journal, 2021, 53, 67-79.	1.3	32
16	Dynamic Changes of Intracellular Monomer Levels Regulate Block Sequence of Polyhydroxyalkanoates in Engineered Escherichia coli. Biomacromolecules, 2018, 19, 662-671.	2.6	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.	2.4	26
18	Advances and needs for endotoxin-free production strains. Applied Microbiology and Biotechnology, 2015, 99, 9349-9360.	1.7	26

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19	InÂvitro synthesis of polyhydroxyalkanoates using thermostable acetyl-CoA synthetase, CoA transferase, and PHA synthase from thermotolerant bacteria. <i>Journal of Bioscience and Bioengineering</i> , 2016, 122, 660-665.	1.1	25
20	Indirect positive effects of a sigma factor RpoN deletion on the lactate-based polymer production in <i>Escherichia coli</i> . <i>Bioengineered</i> , 2015, 6, 307-311.	1.4	24
21	Microbial Secretion of D-Lactate-Based Oligomers. <i>ACS Sustainable Chemistry and Engineering</i> , 2017, 5, 2360-2367.	3.2	24
22	Consolidated bioprocessing of poly(lactate-co-3-hydroxybutyrate) from xylan as a sole feedstock by genetically-engineered <i>Escherichia coli</i> . <i>Journal of Bioscience and Bioengineering</i> , 2016, 122, 406-414.	1.1	23
23	Improved production of poly(lactic acid)-like polyester based on metabolite analysis to address the rate-limiting step. <i>AMB Express</i> , 2014, 4, 83.	1.4	22
24	Structures of AzrA and of AzrC complexed with substrate or inhibitor: insight into substrate specificity and catalytic mechanism. <i>Acta Crystallographica Section D: Biological Crystallography</i> , 2014, 70, 553-564.	2.5	21
25	High-cell density culture of poly(lactate-co-3-hydroxybutyrate)-producing <i>Escherichia coli</i> by using glucose/xylose-switching fed-batch jar fermentation. <i>Journal of Bioscience and Bioengineering</i> , 2019, 127, 721-725.	1.1	20
26	An extra large insertion in the polyhydroxyalkanoate synthase from <i>Delftia acidovorans</i> DS-17: its deletion effects and relation to cellular proteolysis. <i>FEMS Microbiology Letters</i> , 2004, 231, 77-83.	0.7	19
27	MtgA Deletion-Triggered Cell Enlargement of <i>Escherichia coli</i> for Enhanced Intracellular Polyester Accumulation. <i>PLoS ONE</i> , 2015, 10, e0125163.	1.1	19
28	In Vitro Analysis of σ^{D} -Lactyl-CoA-Polymerizing Polyhydroxyalkanoate Synthase in Polylactate and Poly(lactate-co-3-hydroxybutyrate) Syntheses. <i>Biomacromolecules</i> , 2018, 19, 2889-2895.	2.6	18
29	Targeted Engineering of the Antibacterial Peptide Apidaecin, Based on an In Vivo Monitoring Assay System. <i>Applied and Environmental Microbiology</i> , 2009, 75, 1460-1464.	1.4	16
30	Quick and efficient method for genetic transformation of biopolymer-producing bacteria. <i>Journal of Chemical Technology and Biotechnology</i> , 2010, 85, 775-778.	1.6	16
31	Effect of monomeric composition on the thermal, mechanical and crystalline properties of poly[(R)-lactate-co-(R)-3-hydroxybutyrate]. <i>Polymer</i> , 2017, 122, 169-173.	1.8	16
32	Superior thermal stability and fast crystallization behavior of a novel, biodegradable β -methylated bacterial polyester. <i>NPG Asia Materials</i> , 2021, 13, .	3.8	16
33	Incorporation of Glycolate Units Promotes Hydrolytic Degradation in Flexible Poly(glycolate-co-3-hydroxybutyrate) Synthesized by Engineered <i>Escherichia coli</i> . <i>ACS Biomaterials Science and Engineering</i> , 2017, 3, 3058-3063.	2.6	15
34	Kinetic Analysis of Engineered Polyhydroxyalkanoate Synthases with Broad Substrate Specificity. <i>Polymer Journal</i> , 2009, 41, 237-240.	1.3	14
35	Microbial secretion of lactate-enriched oligomers for efficient conversion into lactide: A biological shortcut to polylactide. <i>Journal of Bioscience and Bioengineering</i> , 2017, 124, 204-208.	1.1	14
36	In vivo target exploration of apidaecin based on Acquired Resistance induced by Gene Overexpression (ARGO assay). <i>Scientific Reports</i> , 2017, 7, 12136.	1.6	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. <i>Journal of Polymer Research</i> , 2017, 24, 1.	1.2	13
38	Molecular weight-dependent degradation of d-lactate-containing polyesters by polyhydroxyalkanoate depolymerases from <i>Variovorax</i> sp. C34 and <i>Alcaligenes faecalis</i> T1. <i>Applied Microbiology and Biotechnology</i> , 2015, 99, 9555-9563.	1.7	12
39	Ribulose-1,5-bisphosphate carboxylase/oxygenase (RuBisCO)-mediated de novo synthesis of glycolate-based polyhydroxyalkanoate in <i>Escherichia coli</i> . <i>Journal of Bioscience and Bioengineering</i> , 2019, 128, 302-306.	1.1	12
40	Effect of introducing a disulfide bridge on the thermostability of microbial transglutaminase from <i>Streptomyces mobaraensis</i> . <i>Applied Microbiology and Biotechnology</i> , 2021, 105, 2737-2745.	1.7	12
41	Microbial production of poly(lactate-co-3-hydroxybutyrate) from hybrid <i>Miscanthus</i> -derived sugars. <i>Bioscience, Biotechnology and Biochemistry</i> , 2016, 80, 818-820.	0.6	11
42	Investigation of the <i>Escherichia coli</i> membrane transporters involved in the secretion of d-lactate-based oligomers by loss-of-function screening. <i>Journal of Bioscience and Bioengineering</i> , 2017, 124, 635-640.	1.1	11
43	Effect of acetate as a co-feedstock on the production of poly(lactate-co-3-hydroxyalkanoate) by pflA-deficient <i>Escherichia coli</i> RSC10. <i>Journal of Bioscience and Bioengineering</i> , 2017, 123, 547-554.	1.1	10
44	Microbial Secretion Platform for ϵ -Hydroxybutyrate Oligomer and Its End-Capped Forms Using Chain Transfer Reaction-Mediated Polyhydroxyalkanoate Synthases. <i>Biotechnology Journal</i> , 2019, 14, 1900201.	1.8	10
45	Biosynthesis of novel lactate-based polymers containing medium-chain-length 3-hydroxyalkanoates by recombinant <i>Escherichia coli</i> strains from glucose. <i>Journal of Bioscience and Bioengineering</i> , 2019, 128, 191-197.	1.1	10
46	Enhancement of lactate fraction in poly(lactate-co-3-hydroxybutyrate) synthesized by <i>Escherichia coli</i> harboring the D-lactate dehydrogenase gene from <i>Lactobacillus acetotolerans</i> HT. <i>Journal of General and Applied Microbiology</i> , 2019, 65, 204-208.	0.4	10
47	Bioconversion of biphenyl to a polyhydroxyalkanoate copolymer by <i>Alcaligenes denitrificans</i> A41. <i>AMB Express</i> , 2020, 10, 155.	1.4	10
48	Enhanced cellular content and lactate fraction of the poly(lactate-co-3-hydroxybutyrate) polyester produced in recombinant <i>Escherichia coli</i> by the deletion of σ factor RpoN. <i>Journal of Bioscience and Bioengineering</i> , 2015, 119, 427-429.	1.1	9
49	Site-directed saturation mutagenesis of polyhydroxyalkanoate synthase for efficient microbial production of poly[(R)-2-hydroxybutyrate]. <i>Journal of Bioscience and Bioengineering</i> , 2018, 125, 632-636.	1.1	9
50	The influence of medium composition on the microbial secretory production of hydroxyalkanoate oligomers. <i>Journal of General and Applied Microbiology</i> , 2021, 67, 134-141.	0.4	9
51	Biological Lactate-Polymers Synthesized by One-Pot Microbial Factory: Enzyme and Metabolic Engineering. <i>ACS Symposium Series</i> , 2012, , 213-235.	0.5	8
52	Enhanced production of lactate-based polyesters in <i>Escherichia coli</i> from a mixture of glucose and xylose by Mlc-mediated catabolite derepression. <i>Journal of Bioscience and Bioengineering</i> , 2018, 125, 365-370.	1.1	8
53	Genome-wide screening of transcription factor deletion targets in <i>Escherichia coli</i> for enhanced production of lactate-based polyesters. <i>Journal of Bioscience and Bioengineering</i> , 2017, 123, 535-539.	1.1	7
54	Microbial oversecretion of (R)-3-hydroxybutyrate oligomer with diethylene glycol terminal as a macromonomer for polyurethane synthesis. <i>International Journal of Biological Macromolecules</i> , 2021, 167, 1290-1296.	3.6	7

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55	Designer enzyme for green materials innovation: Lactate-polymerizing enzyme as a key catalyst. <i>Frontiers of Chemical Science and Engineering</i> , 2017, 11, 139-142.	2.3	6
56	Microbial Production and Properties of LA-based Polymers and Oligomers from Renewable Feedstock. <i>Biofuels and Biorefineries</i> , 2019, , 361-390.	0.5	6
57	Changed bacterial community in the river water samples upon introduction of biodegradable poly(3-hydroxybutyrate). <i>Polymer Degradation and Stability</i> , 2020, 176, 109144.	2.7	5
58	Crystal structure and kinetic analyses of a hexameric form of (<i>S</i>)-3-hydroxybutyryl-CoA dehydrogenase from <i>Clostridium acetobutylicum</i> . <i>Acta Crystallographica Section F, Structural Biology Communications</i> , 2018, 74, 733-740.	0.4	4
59	Biosynthesis, Properties, and Biodegradation of Lactate-Based Polymers. <i>ACS Symposium Series</i> , 2015, , 113-131.	0.5	3
60	Microbial Plastic Factory: Synthesis and Properties of the New Lactate-Based Biopolymers. <i>ACS Symposium Series</i> , 2013, , 175-197.	0.5	2
61	Sucrose supplementation suppressed the growth inhibition in polyhydroxyalkanoate-producing plants. <i>Plant Biotechnology</i> , 2017, 34, 39-43.	0.5	2
62	Microbial Secretion System of Lactate-Based Oligomers and Its Application. <i>ACS Symposium Series</i> , 2018, , 41-60.	0.5	2
63	Synthesis of Polyesters III: Acyltransferase as Catalyst. <i>Green Chemistry and Sustainable Technology</i> , 2019, , 199-231.	0.4	2
64	Optimization of Culture Conditions for Secretory Production of 3-Hydroxybutyrate Oligomers Using Recombinant <i>Escherichia coli</i> . <i>Frontiers in Bioengineering and Biotechnology</i> , 2022, 10, 829134.	2.0	2
65	Enhanced Production of (R)-3-Hydroxybutyrate Oligomers by Coexpression of Molecular Chaperones in Recombinant <i>Escherichia coli</i> Harboring a Polyhydroxyalkanoate Synthase Derived from <i>Bacillus cereus</i> YB-4. <i>Microorganisms</i> , 2022, 10, 458.	1.6	1
66	Editorial: Microbial Production of Biopolyesters and Their Building Blocks: Opportunities and Challenges. <i>Frontiers in Bioengineering and Biotechnology</i> , 2021, 9, 777265.	2.0	1