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	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	A Novel Factor <i>FLOURY ENDOSPERM2</i> Is Involved in Regulation of Rice Grain Size and Starch Quality. Plant Cell, 2010, 22, 3280-3294.	3.1	240
3	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
4	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
5	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.	2.6	83
6	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
7	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
8	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
9	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
10	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
11	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
12	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
13	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
14	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
15	Characterization of thermostable FMN-dependent NADH azoreductase from the moderate thermophile Geobacillus stearothermophilus. Applied Microbiology and Biotechnology, 2010, 86, 1431-1438.	1.7	50
16	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
17	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
18	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

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19	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
20	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
21	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
22	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
23	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
24	Chemo-microbial conversion of cellulose into polyhydroxybutyrate through ruthenium-catalyzed hydrolysis of cellulose into glucose. Bioresource Technology, 2011, 102, 3564-3567.	4.8	38
25	Biosynthetic polyesters consisting of 2-hydroxyalkanoic acids: current challenges and unresolved questions. Applied Microbiology and Biotechnology, 2013, 97, 8011-8021.	1.7	38
26	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.	2.6	37
27	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
28	Cloning and Characterization of thePseudomonassp. 61-3phaGGene Involved in Polyhydroxyalkanoate Biosynthesis. Biomacromolecules, 2001, 2, 142-147.	2.6	33
29	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
30	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
31	Evolution of polyhydroxyalkanoate synthesizing systems toward a sustainable plastic industry. Polymer Journal, 2021, 53, 67-79.	1.3	32
32	Isolation and Characterization of Polyhydroxyalkanoates Inclusions and Their Associated Proteins inPseudomonassp. 61-3. Biomacromolecules, 2002, 3, 787-792.	2.6	31
33	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
34	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
35	Engineering <i>Escherichia coli</i> for Improved Production of Short-Chain-Length-<i>co-</i>Medium-Chain-Length Poly[(<i>R</i>)-3-hydroxyalkanoate] (SCL-<i>co</i>-MCL PHA) Copolymers from Renewable Nonfatty Acid Feedstocks. ACS Sustainable Chemistry and Engineering, 2014, 2, 1879-1887.	3.2	31
36	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

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37	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
38	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
39	Dynamic Changes of Intracellular Monomer Levels Regulate Block Sequence of Polyhydroxyalkanoates in Engineered <i>Escherichia coli</i>. Biomacromolecules, 2018, 19, 662-671.	2.6	27
40	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
41	Comparative Enzymatic Analysis of Azoreductases from<i>Bacillus</i>sp. B29. Bioscience, Biotechnology and Biochemistry, 2009, 73, 1209-1211.	0.6	25
42	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
43	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.	1.4	24
44	Microbial Secretion of D-Lactate-Based Oligomers. ACS Sustainable Chemistry and Engineering, 2017, 5, 2360-2367.	3.2	24
45	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
46	Biosynthesis of biodegradable polyesters from renewable carbon sources by recombinant bacteria. Polymer International, 2002, 51, 899-906.	1.6	22
47	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
48	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
49	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
50	MtgA Deletion-Triggered Cell Enlargement of Escherichia coli for Enhanced Intracellular Polyester Accumulation. PLoS ONE, 2015, 10, e0125163.	1.1	19
51	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
52	Deletion of the<i>pflA</i>gene in<i>Escherichia coli</i>LS5218 and its effects on the production of polyhydroxyalkanoates using beechwood xylan as a feedstock. Bioengineered, 2014, 5, 284-287.	1.4	18
53	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.	2.6	18
54	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

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55	A New Pathway for Poly(3-hydroxybutyrate) Production in<i>Escherichia coli</i>and<i>Corynebacterium glutamicum</i>by Functional Expression of a New Acetoacetyl-coenzyme A Synthase. Bioscience, Biotechnology and Biochemistry, 2011, 75, 364-366.	0.6	17
56	Quick and efficient method for genetic transformation of biopolymerâ€producing bacteria. Journal of Chemical Technology and Biotechnology, 2010, 85, 775-778.	1.6	16
57	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
58	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
59	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
60	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.	2.6	15
61	Kinetic Analysis of Engineered Polyhydroxyalkanoate Synthases with Broad Substrate Specificity. Polymer Journal, 2009, 41, 237-240.	1.3	14
62	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
63	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
64	In vivo target exploration of apidaecin based on Acquired Resistance induced by Gene Overexpression (ARGO assay). Scientific Reports, 2017, 7, 12136.	1.6	14
65	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
66	Direct observation of polyhydroxyalkanoate chains by atomic force microscopy. Ultramicroscopy, 2002, 91, 157-164.	0.8	12
67	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
68	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
69	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
70	Artificial polyhydroxyalkanoate poly[2-hydroxybutyrate-block-3-hydroxybutyrate] elastomer-like material. Scientific Reports, 2021, 11, 22446.	1.6	12
71	Production of P(3-hydroxybutyrate-<i>co</i>-3-hydroxyhexanoate-<i>co</i>-3-hydroxyoctanoate) Terpolymers Using a Chimeric PHA Synthase in Recombinant<i>Ralstonia eutropha</i>and<i>Pseudomonas putida</i>. Bioscience, Biotechnology and Biochemistry, 2010, 74, 1716-1718.	0.6	11
72	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.	0.6	11

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73	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
74	characterization of d-LA homo-oligomer degradation by the isolated strains. Polymer Degradation and Stability, 2020, 179, 109231.	2.7	11
75	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
76	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
77	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
78	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.	0.4	10
79	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
80	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
81	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
82	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
83	Biological Lactate-Polymers Synthesized by One-Pot Microbial Factory: Enzyme and Metabolic Engineering. ACS Symposium Series, 2012, , 213-235.	0.5	8
84	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
85	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
86	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
87	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
88	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
89	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
90	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

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91	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
92	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
93	Biosynthesis of poly(glycolate-<i>co</i>-3-hydroxybutyrate-<i>co</i>-3-hydroxyhexanoate) in <i>Escherichia coli</i> 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
94	One-pot Production of Lactate-Based Polyesters Using Engineered Microbes Expressing Lactate-Polymerizing Enzyme. Kobunshi Ronbunshu, 2011, 68, 271-280.	0.2	2
95	Microbial Plastic Factory: Synthesis and Properties of the New Lactate-Based Biopolymers. ACS Symposium Series, 2013, , 175-197.	0.5	2
96	Sucrose supplementation suppressed the growth inhibition in polyhydroxyalkanoate-producing plants. Plant Biotechnology, 2017, 34, 39-43.	0.5	2
97	Microbial Factory for the Production of Polyesters: A New Platform of Corynebacterium glutamicum. , 2015, , 139-150.		1
98	Creation of Eco-friendly Plastics by Biotechnological Application. Oleoscience, 2005, 5, 523-532.	0.0	0
99	Microbial Factory for the Production of Bioplastics. Journal of Fiber Science and Technology, 2008, 64, P.365-P.370.	0.0	0
100	Production of Polyhydroxyalkanoate Copolymers in Transgenic Plants Expressing Engineered Enzymes. Kobunshi Ronbunshu, 2011, 68, 562-569.	0.2	0
101	Metabolic Chemistry of Microbial Production of Lactic Acid and Lactate-based Polyesters. Kagaku To Seibutsu, 2013, 51, 448-456.	0.0	0
102	Development of Integrated Process for Microbial Bioplastic Production from Plant Biomass. Kobunshi Ronbunshu, 2013, 70, 675-683.	0.2	0