希少糖生産分野論文等リスト					
分類1 糖	分類2 機能	発表年	発表タイトル	発表先・掲載号	著者名
アルロース	生産	2024,	Strategy for production of high-purity rare sugar D-allulose from corn stover	J. Cleaner Production 11 January 140717	Donglin Xin, Ganqiao Ran
アルロース	生産	2024	Biochemical characterization, structure-guided mutagenesis, and application of a recombinant D-allulose 3-epimerase from Christensenellaceae bacterium for the biocatalytic production of D-allulose.	Front. Bioeng. Biotechnol. 12:1365814.	Guan L, Zhu L, Wang K, Gao Y, Li J, Yan S, Zhang X, Ji N, Fan J, Zhou Y, Yao X and Li B
アルロース	生産	2024	Customized self-assembled bimetallic hybrid nanoflowers promoting the robustness of D-allulose 3-epimerase	Chemical Engineering Journal 12 February 2024, 149453	Xin Gao, Senbiao Fang, Xuanzhen Ma, Tong Wang, Chao Li, Fuping Lu, Hui-Min Qin
アルロース	生産	2024	Strategy for production of high-purity rare sugar D-allulose from corn stover	J. Cleaner Production 11 January 2024, 140717	Donglin Xin, Ganqiao Ran
アルロース	生産	2024	Simultaneous Production of D-Allulose and D-Tagatose from Dairy Lactose		B. J. Taylor, J.S. Griffitts, J. Kenealey
アルロース	生産	2024	Bioproduction of Rare d-Allulose from d-Glucose via Borate-Assisted Isomerization	J. Agric Food Chem 72	X. Xie, D. Huang, Z. Li
希少糖	生産	2024	Rare sugar bioproduction: advantages as sweeteners, enzymatic innovation, and fermentative frontiers	Current Opinion in Food Science 56, 101137	D. Dai, Y-S Jin
アルロース	生産	2024	Enhancement of the d-Allulose 3-Epimerase Expression in Bacillus subtilis through Both Transcriptional and Translational Regulations	J. Agric. Food Chem. 2024, XXXX, XXX, XXX- April 02	W. Zhang, H. Ren, J. Chen, D. Ni, W. Xu, W. Mu
アロース	生産	2024	A novel thermotolerant l-rhamnose isomerase variant for biocatalytic conversion of d-allulose to d-allose	Applied Microbiol. Biotechnol. (2024) 108:279	S. Sharma, S. N. Patel. S. P. Singh
アルロース	生産	2024	Directed Evolution of Escherichia coli Nissle 1917 to Utilize Allulose as Sole Carbon Source	Small Methods e2301385. doi: 10.1002/smtd.202301385.	B. Xu, L-H. Liu, S. Lai, J. Chen, S. Wu, W. Lei, H. Lin, Y. Zhang, Y. Hu, J. He
アロース	生産	2024	A comprehensive review of recent advances in the characterization of L-rhamnose isomerase for the biocatalytic production of D-allose from D-allulose	International Journal of Biological Macromolecules Volume 254, Part 2, January 2024, 127859	S. Mahmood, M. W. Iqbal, X. Tang, H. M. Zabed, Z. Chen, C. Zhang, Y. Ravikumar, M. Zhao, X. Qi
アルロース	生産	2023	Highly efficiency production of D-allulose from inulin using curli fiber multi-enzyme cascade catalysis	Int. J. Biol. Macromol ;241:124468. doi: 10.1016/j.ijbiomac.2023.124468.	Y. Chen, Y. Chen, D. Ming, L. Zhu, L. Jiang
アルロース	生産	2023	Sequence- and Structure-Based Mining of Thermostable D-Allulose 3-Epimerase and Computer-Guided Protein Engineering To Improve Enzyme Activity	J. Agric. Food Chem. 71,(47), 18431–18442	Hongbin Qi, Tong Wang, H. Li, C. Li, L. Guan, W. Liu, J. Wang, F. Lu, S. Mao, H-M. Qin

アルロース	生産	2023	Awakening the natural capability of psicose production in *Escherichia coli*	npj Science of Food (2023) 7, 54	J. E. Taylor, D. S. K. Palur , A. Zhang, J. N. Gonzales, A. Arredondo, T. A. Coulther, A. B. J. Lechner, E. P. Rodriguez, O. Fiehn, J. Didzbalis, J. B. Siegel, S. Atsumi
アルロース	生産	2023	Novel multienzyme cascade for efficient synthesis of d-allulose from inexpensive sucrose	Food Bioscience Volume 56, https://doi.org/10.1016/j.fbio.2023.103303	R. Han, W Tu, S. Liu, Y. Ji, U. Schwaneberg, Y. Guo, Y. Ni
アルロース	生産	2023	Engineering D-allulose 3-epimerase from Clostridium cellulolyticum for improved thermostability using directed evolution facilitated by a nonenzymatic colorimetric screening assay	Food Bioscience 53, 102607	J. Chen, Z. Huang, T. Shi, D. Ni, Y. Zhu, W. Xu, W. Zhang, W. Mu
アルロース	生産	2023	Efficient enzymatic synthesis of d-allulose using a novel d-allulose-3-epimerase from Caballeronia insecticola	J. Sci. Food Agric. 103(1): 339-348	Z. Li, L. Feng, Z. Chen, Y. Hu, K. Fei, H. Xu, X-D. Gao
アルロース	生産	2023	Substantial Improvement of an Epimerase for the Synthesis of D-Allulose by Biosensor-Based High-Throughput Microdroplet Screening	Ungewandte Chemie Volume62, Issue	Chao Li, Xin Gao, Hongbin Qi, Wei Zhang, L. Li, C. Wei, M. Wei, X. Sun, S. Wang, L. Wang, Y. Ji, S. Mao, Z. Zhu, M. Tanokura, F. Lu, H-M. Qin
アロース	生産	2022	D-Allose, a rare sugar. Synthesis of d-allopyranosyl acceptors from glucose, and their regioselectivity in glycosidation reactions	Org. Biomol. Chem., 20, 4589-4598	E.A. Del Vigo, C.A. Stortz, C. Marino
アルロース	生産	2022	Rare sugars and their health effects in humans: a systematic review and narrative synthesis of the evidence from human trials	Nutrition Reviews, 80(2) 255–270	A. Ahmed, T. A. Khan, D. D. Ramdath, C.W.C. Kendall, J.L. Sievenpiper
アルロース	生産	2022	Efficient D-allulose synthesis under acidic conditions by auto-inducing expression of the tandem D-allulose 3-epimerase genes in Bacillus subtilis	Microbial Cell Factories 21, Article number: 63	M. Hu, Y. Wei, R. Zhang, M. Shao, T. Yang, M. Xu, X. Zhang, Z. Rao
アルロース	生産	2022	Computer-Aided Targeted Mutagenesis of Thermoclostridium caenicolad-Allulose 3-Epimerase for Improved Thermostability	J. Agric. Food Chem. 70(6), 1943–1951	J. Chen, D. Chen, Q. Chen, W. Xu, W. Zhang, W. Mu
アルロース	生産	2022	Advanced Whole-cell Conversion for D-allulose Production Using an Engineered Corynebacterium glutamicum	Biotechnol. Bioprocess Engineering 27, 276–285	S-H. Jeong, M. Kwon, S-W. Kim
アルロース	生産	2022	d-Allulose (d-psicose) biotransformation from d-glucose, separation by simulated moving bed chromatography (SMBC) and purification by crystallization	Process Biochem. 119, 29-38	X. Wena, Y. Ninga, H. Linb, Y.R. Can, L.Y. Liua, C. Zhanga, J. Lina, J. Lina

アルロース	生産	2022	Efficient Utilization of Fruit Peels for the Bioproduction of D-Allulose and D-Mannitol	Foods 11(22): 3613	J. Li, J. Chen, W. Xu, W. Zhang, Y. Chen, W. Mu
アルロース	生産	2022	Recent Advances Regarding the Physiological Functions and Biosynthesis of D-Allulose	Front Microbiol. 13: 881037	Z. Chen, X-D. Gao, Z. Li
アルロース	生産	2021	Engineering Escherichia coli for d-Allulose Production from d-Fructose by Fermentation	J. Agric. Food Chem. 69(45): 13578–13585	Q. Guo, L.J. Zheng, X. Luo, X.Q. Gao, C.Y. Liu
アルロース	生産	2021	Characterization of a Recombinant D-Allulose 3-epimerase from Thermoclostridium caenicola with Potential Application in D-Allulose Production	Molecular Biotechnology 63: 534–543	J. Chen, D. Chen, M. Ke, S. Ye, X. Wang, W. Zhang
アルロース	生産	2021	Enhanced Thermostability of D-Psicose 3-Epimerase from Clostridium bolteae through Rational Design and Engineering of New Disulfide Bridges	Int. J. Mol. Sci. 22(18): 10007	J. Zhao, J. Chen, H. Wang, Y. Guo, K. Li, J. Liu
アルロース	生産	2021	D-Allulose 3-epimerase of Bacillus sp. origin manifests profuse heat - stability and noteworthy potential of d-fructose epimerization	Microbial. Cell Factories 20: Article number: 60	S.N. Patel, G. Kaushal, S.P. Singh
アルロース	生産	2021	Biochemical identification of a hyperthermostable l-ribulose 3-epimerase from Labedella endophytica and its application for d-allulose bioconversion	Int. J. Biological Macromol. 189: 214-222	D. Chen, J. Chen, X. Liu, C. Guang, W. Zhang
アルロース	生産	2021	Efficient biosynthesis of D-allulose in Bacillus subtilis through D-psicose 3-epimerase translation modification	Int. J. Biological Macromol. 187: 1-8	J. Zhao, H. Wei, J. Chen, L. Li, K .Li, J. Liu
アルロース	生産	2021	Production of D-Allose From D-Allulose Using Commercial Immobilized Glucose Isomerase	Front. Bioeng. Biotechnol. 9: 681253	M. N. Choi, K-C. Shin, D. W. Kim, B.-J. Kim, C-S. Park, S.-J. Yeom, Y-S. Kim
アルロース	生産	2021	Bioproduction of D-allulose: Properties, applications, purification, and future perspectives	Compr. Rev. Food Sci. Food Saf. 20(6): 6012-6026	M. Hu, M. Li, B. Jiang, T. Zhang
アルロース	生産	2021	Characterization of a Recombinant D-Allulose 3-epimerase from Thermoclostridium caenicola with Potential Application in D-Allulose Production	Mol. Biotechnol. 63(6): 534-543	J. Chen, D. Chen, M. Ke, S. Ye, X. Wang, W. Zhang, W. Mu
アルロース	生産	2021	Recombinant D-tagatose 3-epimerase production and converting fructose into allulose	J. Food Process. Preservation https://doi.org/10.1111/jfpp.15508	E. Parıldı, O. Kola, B.D. Özcan, M.R. Akkaya, E. Dikkaya
希少糖	生産	2021	Structural Analyses of Enzymes in the Rare Sugar Production Pathway	JAXA Protein Crystal Growth Project 2021.11.16	H. Yoshida, S. Kamitori, A. Yoshihara, K. Izumori
アルロース	生産	2021	D-allulose, a versatile rare sugar: recent biotechnological advances and challenges	Critical Reviews in Food Science and Nutrition https://doi.org/10.1080/10408398.2021.2023091	W. Zhang, D. Chen, J. Chen, W. Xu, Q. Chen

アルロース	生産	2021	D-Allulose Production from d-fructose by Putative Dolichol Phosphate Mannose Synthase from Bacillus sp. with Potential D-allulose 3-epimrase Activity	Biotechnol. Bioprocess Engineering 26: 976–984	M.J. Seo, E.R. Kwon, S.J. Kim, M.S. Choi, Y.S. Kim
アルロース	生産	2021	Thermodynamics-Driven Production of Value-Added d-Allulose from Inexpensive Starch by an In Vitro Enzymatic Synthetic Biosystem	ACS Catal. 11(9): 5088–5099	Y. Li, T. Shi, P. Han, C. You
アルロース	生産	2021	D-allulose, a versatile rare sugar: recent biotechnological advances and challenges	Crit Rev Food Sci Nutr. 29; 1-19.	W. Zhang, D. Chen, J. Chen, W. Xu, Q. Chen, H. Wu, C. Guang, W. Mu
アルロース	生産	2021	Research Advances of D-allulose: An Overview of Physiological Functions, Enzymatic Biotransformation Technologies, and Production Processes	Foods 10(9): 2186	Y. Xia, Q. Cheng, W. Mu, X. Hu, Z. Sun, Y. Qiu, X. Liu, Z. Wang
アルロース	生産_	2020	Review on D-Allulose: In vivo Metabolism, Catalytic Mechanism, Engineering Strain Construction, Bio-Production Technology	Frontiers in Bioengineering and Biotechnology, Vol.8,	S. Jiang, W. Xiao, X. Zhu
希少糖	生産	2020	Synthesis of rare sugar isomers through site-selective epimerization	Nature 578, 403–408	Y. Wang, H. M. Carder, A. E. Wendlandt
希少糖	生産	2019	High Sensitivity Analysis and Food Processing Stability of Rare Sugars	Food Sci. Technol. Research, 25(6) 891-901	M. Miyoshi , I. Kimura, T. Inazu, K. Izumori
アルロース	生産	2019	Functionalized polyhydroxyalkanoate nano-beads as a stable biocatalyst for cost-effective production of the rare sugar D-allulose	Bioresource Technology 289: 121673	Ran G. Tan D. Zhao J. Fan F. Zhang Q. Wu X.
アルロース	生産	2019	Bioprocessing and technoeconomic feasibility analysis of simultaneous production of d-psicose and ethanol using engineered yeast strain KAM-2GD	Bioresource Technology 275: 27-34	Juneja A. Zhang G. Jin Y.S. Singh V.
アロース	生産	2018	Recent research on the physiological functions, applications, and biotechnological production of D-allose	Appl Microbiol Biotechnol. 102, 4269–4278	Chen Z, Chen J, Zhang W,
アルロース	生産	2018	Development of a thermo-stable and recyclable magnetic nanobiocatalyst for bioprocessing of fruit processing residues and D-allulose synthesis	Bioresource Technology 247: 633-639	Patel S.N. Singh V. Sharma M. Sangwan R.S.
アルロース	生産	2017	Immobilization on graphene oxide improves the thermal stability and bioconversion efficiency of D-psicose 3-epimerase for rare sugar production	Enzyme Microbial. Technol. 107: 49-56,	S R Dedania, M J Patel, D M Patel, R C Akhani, D H Patel,
希少糖	生産	2017	Recent advances in the synthesis of rare sugars using DHAP-Dependent aldolases	Carbohydrate Research 452: 108-115	A Li, L Cai, Z Chen, M Wang, N Wang, H Nakanishi
アルロース	生産	2017	Strategies for design of improved biocatalysts for industrial applications	Bioresource Technology 245: 1304-1313	Madhavan A. Sindhu R. Binod P. Sukumaran R.K.
アルロース	生産	2017	Simultaneous production of bioethanol and value-added d-psicose from Jerusalem artichoke (Helianthus tuberosus L.) tubers	Bioresource Technology 244: 1068-1072	Song Y. Oh C. Bae H-J
アルロース	生産	2017	Strategy for dual production of bioethanol and d-psicose as value-added products from cruciferous vegetable residue	Bioresource Technology 223: 34-39	Song Y. Nguyen Q.A. Wi S.G. Yang J. Bae H-J.

アルロース	生産	2017	Purification and characterization of d-allulose 3-epimerase derived from Arthrobacter globiformis M30, a GRAS microorganism	J, Biosci. Bioeng. 123: 170-176,	A Yoshihara, T Kozakai, T Shintani, R Matsutani, P K Gullapalli,
アロース	生産	2017	Characterization of a novel thermostable l-rhamnose isomerase from Thermobacillus composti KWC4 and its application for production of d-allose	Process Biochemistry, 53: 153-161	W Xu, W Zhang, Y Tian, T Zhang, W Mu
希少糖	生産	2017	Enzymatic approaches to rare sugar production	Biotechnology Advances, 35(2) : 267-274,	W Zhang, T Zhang, B Jiang, W Mu
アルロース	生産	2016	A novel approach of integrated bioprocessing of cane molasses for production of prebiotic and functional bioproducts	Bioresource Technology 219: 311-318	Sharma M. Patel S.N. Lata K. Singh U. Krishania M.
アルロース	生産	2016	Improved operational stability of D-psicose 3-epimerase by a novel protein engineering strategy, and D-psicose production from fruit and vegetable residues	Bioresource Technology 216: 121-127	Patel S.N. Sharma M. Lata K. Singh U. Kumar V. Rajender S. Sangwan Sudhir P. Singh
RSS	生産	2016	アルカリ異性化を用いた希少糖含有シロップの製造方法および生理活性に関する検討	応用糖質科学 6(1): 37-42	高峰啓,飯田哲郎,大隈一裕,何森健
アルロース	生産_	2016	Recent advances in D-allulose: Physiological functionalities, applications, and biological production	Trends in Food Sci. Technol. 54, 127	W. Zhang, S. Yu, T. Zhang
アルロース	生産_	2016	X-ray structures of the Pseudomonas cichorii D-tagatose 3-epimerase mutant form C66S recognizing deoxy sugars as substrates	Applied Microbiol. Biotechnol. 100(24), 10403.	H. Yoshida, A. Yoshihara, T. Ishii
アルロース	生産_	2014	Co-expression of D-glucose isomerase and D-psicose 3-epimerase: Development of an efficient one-step production of D-psicose	Enzyme and Microbial Technol. 64-65, 1	Y. Men, Y. Zhu, Y. Zeng
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希少糖	生産	2006	Izumoring: A strategy for bioproduction of all hexoses	J. Biotech., 124 (4): 717-722	K. Izumori
希少糖	生産	2002	Bioproduction strategies for rare hexose sugars	Naturwissennschaften, 89(3): 120-124	K. Izumori
アルロース	生産	1994	Purification and Characterization of D-Tagatose 3-Epimerase from Pseudomonas sp. ST-24	Biosci. Biotech. Biochem. 58(12): 2168–2171	H. Itoh, H. Okaya, A. R. Khan, S. Tajima, S. Hayakawa, K. Izumori
アルロース	生産	1993	A New Enzyme, D-Ketohexose 3-Epimerase, from Pseudomonas sp. ST-24	Biosci. Biotech. Biochem. 57(6): 1037–1039	K. Izumori, A. R. Khan, H. Okaya, T.Tsumura