

研究業績

原著論文

1. Takagi M, Kuzuyama T, Takahashi S and Seto H. A gene cluster for the mevalonate pathway from *Streptomyces* sp. strain CL190. J Bacteriol. 182, 4153-4157 (2000)
2. Kuzuyama T, Takahashi S, Takagi M and Seto H. Characterization of 1-deoxy-D-xylulose 5-phosphate reductoisomerase, an enzyme involved in isopentenyl diphosphate biosynthesis, and identification of its catalytic amino acid residues. J Biol Chem. 275, 19928-19932 (2000)
3. Takagi M, Kuzuyama T, Kaneda K, Watanabe H, Dairi T and Seto H. Studies on the nonmevalonate pathway: Formation of 2-C-methyl-D-erythritol 2,4-cyclodiphosphate from 2-phospho-4-(cytidine 5'-diphospho)-2-C-methyl-D-erythritol. Tetrahedron Lett. 41, 3395-3398 (2000)
4. Kuzuyama T, Takagi M, Kaneda K, Watanabe H, Dairi T and Seto H. Studies on the nonmevalonate pathway: Conversion of 4-(cytidine 5'-diphospho)-2-C-methyl-D-erythritol to its 2-phospho derivative by 4-(cytidine 5'-diphospho)-2-C-methyl-D-erythritol kinase. Tetrahedron Lett. 41, 2925-2928 (2000)
5. Kuzuyama T, Takagi M, Kaneda K, Dairi T and Seto H. Formation of 4-(cytidine 5'-diphospho)-2-C-methyl-D-erythritol from 2-C-methyl-D-erythritol 4-phosphate by 2-C-methyl-D-erythritol 4-phosphate cytidyltransferase, a new enzyme in the nonmevalonate pathway. Tetrahedron Lett. 41, 703-706 (2000)
6. Kuzuyama T, Takagi M, Takahashi S and Seto H. Cloning and characterization of 1-deoxy-D-xylulose 5-phosphate synthase from *Streptomyces* sp. strain CL190, which uses both the mevalonate and nonmevalonate pathways for isopentenyl diphosphate biosynthesis. J Bacteriol. 182, 891-897 (2000)
7. Kakinuma K, Dekishima Y, Matsushima Y, Eguchi T, Misawa N, Takagi M, Kuzuyama T and Seto H. New approach to multiply deuterated isoprenoids using triply engineered *Escherichia coli* and its potential as a tool for mechanistic enzymology. J Am Chem Soc. 123, 1238-1239 (2001)
8. Kaneda K, Kuzuyama T, Takagi M, Hayakawa Y and Seto H. A new type of isopentenyl diphosphate isomerase. Proc Natl Acad Sci USA. 98, 932-937 (2001)
9. Kasahara H, Hanada A, Kuzuyama T, Takagi M, Kamiya Y and Yamaguchi S. Contribution of the mevalonate and methylerythritol phosphate pathways to the biosynthesis of gibberellins in Arabidopsis. J Biol Chem. 277,

45188-45194 (2002)

10. Kishida H, Wada T, Unzai S, Kuzuyama T, Takagi M, Terada T, Shirouzu M, Yokoyama S, Tame JR and Park SY. Structure and catalytic mechanism of 2-C-methyl-D-erythritol 2,4-cyclodiphosphate (MECDP) synthase, an enzyme in the non-mevalonate pathway of isoprenoid synthesis. *Acta Crystallogr D Biol Crystallogr.* 59, 23-31 (2003)

11. Takagi M, Kaneda K, Shimizu T, Hayakawa Y, Seto H and Kuzuyama T. *Bacillus subtilis* ypgA gene is *fni*, a nonessential gene encoding Type 2 isopentenyl diphosphate isomerase. *Biosci Biotechnol Biochem.* 68, 132-137 (2004)

12. Tera M, Sohtome Y, Ishizuka H, Doi T, Takagi M, Shin-ya K and Nagasawa K. Design and synthesis of telomestatin derivatives and their inhibitory activity of telomerase. *Heterocycles.* 69, 505-514 (2006)

13. Sato A, Takagi M, Shimamoto A, Kawakami S and Hashida M. Small interfering RNA delivery to the liver by intravenous administration of galactosylated cationic liposomes in mice. *Biomaterials.* 28, 1434-1442 (2007)

14. Ueda JY, Hashimoto J, Nagai A, Nakashima T, Komaki H, Anzai K, Harayama S, Doi T, Takahashi T, Nagasawa K, Natsume T, Takagi M* and Shin-ya K New aureothin derivative, alloaureothin, from *Streptomyces* sp. MM23. *J Antibiot.* 60, 321-324 (2007)

15. Sato A, Choi SW, Hirai M, Yamayoshi A, Moriyama R, Yamano T, Takagi M, Kano A, Shimamoto A and Maruyama A. Polymer brush-stabilized polyplex for a siRNA carrier with long circulatory half-life. *J Control Release.* 122, 209-216 (2007)

16. Oishi M, Nagasaki Y, Nishiyama N, Itaka K, Takagi M, Shimamoto A, Furuichi Y and Kataoka K. Enhanced growth inhibition of hepatic multicellular tumor spheroids by lactosylated poly(ethylene glycol)-siRNA conjugate formulated in PEGylated polyplexes. *ChemMedChem.* 2, 1290-1297 (2007)

17. Ueda JY, Togashi T, Matukura S, Nagai A, Nakashima T, Komaki H, Anzai K, Harayama S, Doi T, Takahashi T, Natsume T, Kisu Y, Goshima N, Nomura N, Takagi M* and Shin-ya K. A novel nuclear export inhibitor JBIR-02, a new piericidin discovered from *Streptomyces* sp. ML55. *J Antibiot.* 60, 459-462 (2007)

18. Izumikawa M, Ueda JY, Chijiwa S, Takagi M* and Shin-ya K. Novel GRP78 molecular chaperone expression down-regulators JBIR-04 and -05 isolated from *Streptomyces violaceoniger*. *J Antibiot.* 60, 640-644

(2007)

19. Ogata M, Ueda JY, Hoshi M, Hashimoto J, Nakashima T, Anzai K, Takagi M* and Shin-ya K. A novel indole-diterpenoid, JBIR-03 with anti-MRSA activity from *Dichotomomyces cejpai* var. *cejpai* NBRC 103559.

J Antibiot. 60, 645-648 (2007)

20. Umeda Y, Furihata K, Sakuda S, Nagasawa H, Ishigami K, Watanabe H, Izumikawa M, Takagi M, Doi T, Nakao Y and Shin-ya K. Absolute structure of prunustatin A, a novel GRP78 molecular chaperone down-regulator. Org Lett. 9, 4239-4242 (2007)

21. Futami K, Takagi M, Shimamoto A, Sugimoto M and Furuichi Y. Increased chemotherapeutic activity of camptothecin in cancer cells by siRNA-induced silencing of WRN helicase. Biol Pharm Bull. 30, 1958-1961 (2007)

22. Futami K, Kumagai E, Makino H, Goto H, Takagi M, Shimamoto A and Furuichi Y. Induction of mitotic cell death in cancer cells by small interference RNA suppressing the expression of RecQL1 helicase. Cancer Sci. 99, 71-80 (2008)

23. Futami K, Kumagai E, Makino H, Sato A, Takagi M, Shimamoto A and Furuichi Y. Anticancer activity of RecQL1 helicase siRNA suppression in mouse xenograft models. Cancer Sci. 99, 241-244 (2008)

24. Tera M, Ishizuka H, Takagi M, Suganuma M, Shin-ya K and Nagasawa K. Macrocyclic hexaoxazoles as sequence- and mode-selective G-quadruplex binders. Angew Chem Int Ed Engl. 47, 5557-5560 (2008)

25. Ueda JY, Nagai A, Izumikawa M, Chijiwa S, Takagi M* and Shin-ya K. A novel antimycin-like compound, JBIR-06, from *Streptomyces* sp. ML55. J Antibiot. 61, 241-244 (2008)

26. Izumikawa M, Komaki H, Hashimoto J, Takagi M* and Shin-ya K. Stawamycin analog, JBIR-11 from *Streptomyces viridochromogenes* subsp. *sulfomycini* NBRC 13830. J. Antibiot. 61, 326-329 (2008)

27. Numajiri N, Takahashi T, Takagi M, Shin-ya K and Takayuki D. Total Synthesis of largazole and its biological evaluation. Synlett. 16, 2483-2486 (2008)

28. Ueda JY, Chijiwa S, Takagi M* and Shin-ya K. A novel versipelostatin analogue, versipelostatin F isolated from *Streptomyces versipellis* 4083-SVS6. J Antibiot. 61, 752-755 (2008)

29. Izumikawa M, Ukai H, Takagi M,* Ueda HR and Shin-ya K. JBIR-26, a novel natural compound from *Streptomyces* sp. AK-AH76, regulates mammalian circadian clock. J Antibiot. 61, 756-758 (2008)
30. Motohashi K, Hwang JH, Sekido Y, Takagi M* and Shin-ya K. JBIR-23 and -24, novel anticancer agents from *Streptomyces* sp. AK-AB27. Org Lett. 11, 285-288 (2009)
31. Tera M, Iida K, Ishizuka H, Takagi M, Suganuma M, Doi T, Shin-ya K and Nagasawa K. Synthesis of a potent G-quadruplex-binding macrocyclic heptaoxazole. Chembiochem. 10, 431-435 (2009)
32. Komaki H, Izumikawa M, Ueda JY, Nakashima T, Khan ST, Takagi M and Shin-ya K. Discovery of a pimarin analog JBIR-13, from *Streptomyces bicolor* NBRC 12746 as predicted by sequence analysis of type I polyketide synthase gene. Appl Microbiol Biotechnol. 83, 127-133 (2009)
33. Murakami R, Shinozaki J, Kajiura T, Kozone I, Takagi M, Shin-ya K, Seto H and Hayakawa Y. Ammocidins B, C and D, new cytotoxic 20-membered macrolides from *Saccharothrix* sp. AJ9571. J Antibiot. 62, 123-127 (2009)
34. Kozone I, Ueda JY, Watanabe M, Nogami S, Nagai A, Inaba S, Ohya Y, Takagi M* and Shin-ya K. Novel 24-membered macrolides, JBIR-19 and -20 isolated from *Metarhizium* sp. fE61. J Antibiot. 62, 159-162 (2009)
35. Ueoka R, Ito A, Izumikawa M, Maeda S, Takagi M, Shin-ya K, Yoshida M, van Soest RW and Matsunaga S. Isolation of azaspiracid-2 from a marine sponge *Echinoclathria* sp. as a potent cytotoxin. Toxicon. 53, 680-684 (2009)
36. Izumikawa M, Nagai A, Doi T, Takagi M* and Shin-ya K. JBIR-12, a novel antioxidative agent from *Penicillium* sp. NBRC 103941. J Antibiot. 62, 177-180 (2009)
37. Motohashi K, Hashimoto J, Inaba S, Khan ST, Komaki H, Nagai A, Takagi M* and Shin-ya K. New sesquiterpenes, JBIR-27 and -28, isolated from a tunicate-derived fungus, *Penicillium* sp. SS080624SCf1. J Antibiot. 62, 247-250 (2009)
38. Zhao P, Ueda JY, Kozone I, Chijiwa S, Takagi M, Kudo F, Nishiyama M, Shin-ya K and Kuzuyama T. New glycosylated derivatives of versipelostatatin, the GRP78/Bip molecular chaperone down-regulator, from *Streptomyces versipellis* 4083-SVS6. Org Biomol Chem. 7, 1454-1460 (2009)

39. Ueda JY, Hwang JH, Maeda S, Kato T, Ochiai A, Isshiki K, Yoshida M, Takagi M* and Shin-ya K. JBIR-17, a novel trichostatin analog from *Streptomyces* sp. 26634. J Antibiot. 62, 283-285 (2009)
40. Tanaka H, Yoshizawa A, Chijiwa S, Ueda JY, Takagi M, Shin-ya K and Takahashi T. Efficient synthesis of the deoxysugar Part of versipelostatin by direct and stereoselective glycosylation and revision of the structure of the trisaccharide Unit. Chem. Asian J. 6, 1114-1125 (2009)
41. Khan ST, Harayama S, Tamura T, Ando K, Takagi M and Shin-ya K. *Paraoerskovia marina* gen. nov., sp. nov., a novel actinobacterium isolated from marine sediment. Int J Syst Evol Microbiol. 59, 2094-2098 (2009)
42. Fujiwara T, Hwang JH, Kanamoto A, Nagai H, Takagi M* and Shin-ya K. JBIR-44, a new bromotyrosine compound from a marine sponge *Psammaphysilla purpurea*. J. Antibiot. 62, 393-395 (2009)
43. Motohashi K, Inaba S, Takagi M* and Shin-ya K. JBIR-15, a new aspochracin derivative, isolated from a sponge-derived fungus, *Aspergillus sclerotiorum* Huber Sp080903f04. Biosci Biotechnol Biochem. 73, 1898-1900 (2009)
44. Hashimoto J, Watanabe T, Seki T, Karasawa S, Izumikawa M, Seki T, Iemura SI, Natsume T, Nomura N, Goshima N, Miyawaki A, Takagi M* and Shin-ya K. Novel in vitro protein fragment complementation assay applicable to high-throughput screening in a 1536-well format. J Biomol Screen. 14, 970-979 (2009)
45. Izumikawa M, Khan ST, Komaki H, Nagai A, Inaba S, Takagi M* and Shin-ya K. JBIR-37 and -38, novel glycosyl benzenediols, isolated from the sponge-derived fungus, *Acremonium* sp. SpF080624G1f01. Biosci Biotechnol Biochem. 73, 1898-1900 (2009)
46. Kozono I, Ueda JY, Takagi M* and Shin-ya K. JBIR-52, a new antimycin-like compound, from *Streptomyces* sp. ML55. J Antibiot. 62, 593-595 (2009)
47. Mukai A, Komaki H, Takagi M* and Shin-ya K. Novel siderophore, JBIR-16, isolated from *Nocardia tenerifensis* NBRC 101015. J Antibiot. 62, 601-603 (2009)
48. Ueda JY, Takagi M* and Shin-ya. Two novel decanedienamide derivatives, JBIR-07 and -08, from *Streptomyces versipellis* 4083-SVS6. Nat Prod Res. 23, 1337-1341 (2009)

49. Hashimoto J, Motohashi K, Sakamoto K, Hashimoto S, Yamanouchi M, Tanaka H, Takahashi T, Takagi M* and Shin-ya K. Screening and evaluation of new inhibitors of hepatic glucose production. J Antibiot. 62, 625-629 (2009)
50. Motohashi K, Gyobu Y, Takagi M* and Shin-ya K. JBIR-25, a novel antioxidative agent from *Hyphomycetes* sp. CR28109. J Antibiot. 62, 703-704 (2009)
51. Mukai A, Nagai A, Inaba S, Takagi M* and Shin-ya K. JBIR-54, a new 4-pyridinone derivative isolated from *Penicillium daleae* Zaleski fE50. J Antibiot. 62, 705-706 (2009)
52. Ueda JY, Takagi M* and Shin-ya K. Aminocaprophenone- and pyrrolidine-type alkaloids from the leaves of *Ficus septica*. J Nat Prod. 72, 2181-2183 (2009)
53. Izumikawa M, Khan ST, Komaki H, Takagi M* and Shin-ya K. JBIR-31, a new teleocidin analog, produced by salt-requiring *Streptomyces* sp. NBRC 105896 isolated from a marine sponge. J Antibiot. 63, 33-36 (2010)
54. Khan ST, Izumikawa M, Motohashi K, Mukai A, Takagi M* and Shin-ya K. Distribution of the 3-hydroxyl-3-methylglutaryl coenzyme A reductase gene and isoprenoid production in marine-derived *Actinobacteria*. FEMS Microbiol Lett. 304, 89-96 (2010)
55. Fujiwara T, Nagai A, Takagi M* and Shin-ya K. JBIR-69, a new metabolite from *Streptomyces* sp. OG05. J Antibiot. 63, 95-96 (2010)
56. Ueda JY, Kunoh T, Sekigawa M, Wada SI, Mukai Y, Ohta S, Sasaki R, Mizukami T, Takagi M* and Shin-ya K. JBIR-14, a highly oxygenated ergostane, from *Isaria* sp. NBRC 104353. J Antibiot. 63, 139-141 (2010)
57. Izumikawa M, Khan ST, Takagi M* and Shin-ya K. Sponge-derived *Streptomyces* producing isoprenoids via the mevalonate pathway. J Nat Prod. 73, 208-212 (2010)
58. Motohashi K, Takagi M* and Shin-ya K. Tetrapeptides possessing a unique skeleton, JBIR-34 and JBIR-35, isolated from a sponge-derived actinomycete, *Streptomyces* sp. Sp080513GE-23. J Nat Prod. 73, 226-228 (2010)
59. Izumikawa M, Hashimoto J, Hirokawa T, Sugimoto S, Kato T, Takagi M* and Shin-ya K. JBIR-22, an inhibitor for protein-protein interaction of the homodimer of proteasome assembly factor 3. J Nat Prod. 73, 628-631 (2010)

60. Motohashi K, Takagi M* and Shin-ya K. Tetracenoquinocin and 5-iminoaranciamycin from a sponge-derived *Streptomyces* sp. Sp080513GE-26. J Nat Prod. 73, 755-758 (2010)
61. Ueda JY, Khan ST, Takagi M* and Shin-ya K. JBIR-58, a new salicylamide derivative, isolated from a marine sponge-derived *Streptomyces* sp. SpD081030ME-02. J Antibiot. 63, 267-269 (2010)
62. Ueda JY, Hashimoto J, Inaba S, Takagi M* and Shin-ya K. JBIR-59, a new sorbicillinoid, from a marine-derived fungus *Penicillium citrinum* SpI080624G1f01. J.Antibiot. 63, 203-205 (2010)
63. Baumann S, Schoof S, Bolten M, Haering C, Takagi M, Shin-ya K and Arndt HD. Molecular determinants of microbial resistance to thiopeptide antibiotics. J Am Chem Soc. 132, 6973-6981 (2010)
64. Takagi M*, Motohashi K, Hwang JH, Nagai A and Shin-ya K. New tensidols, JBIR-86 and JBIR-87, isolated from *Aspergillus* sp. fJ80. J Antibiot. 63, 371-373 (2010)
65. Tanaka H, Yamaguchi S, Yoshizawa A, Takagi M, Shin-ya K and Takahashi T. Combinatorial synthesis of deoxyhexasaccharides related to the landomycin A sugar moiety, based on an orthogonal deprotection strategy. Chem Asian J. 5, 1407-1427 (2010)
66. Khan ST, Takagi M* and Shin-ya K. Diversity, salt requirement, and antibiotic production of *Actinobacteria* isolated from marine sponges. Actinomycetologica. 24, 18-23 (2010)
67. Hayakawa Y, Yamazaki Y, Kurita M, Kawasaki T, Takagi M and Shin-ya K. Flaviogeranin, a new neuroprotective compound from *Streptomyces* sp. J Antibiot. 63, 379-380 (2010)
68. Izumikawa M, Hashimoto J, Takagi M* and Shin-ya K. Isolation of two new terpeptin analogs-JBIR-81 and JBIR-82-from a seaweed-derived fungus, *Aspergillus* sp. SpD081030G1f1. J Antibiot. 63, 389-391 (2010)
69. Takagi M*, Motohashi K and Shin-ya K. Isolation of 2 new metabolites, JBIR-74 and JBIR-75, from the sponge-derived *Aspergillus* sp. fS14. J Antibiot. 63, 393-395 (2010)
70. Takagi M*, Motohashi K, Khan ST, Hashimoto J and Shin-ya K. JBIR-65, a new diterpene, isolated from a sponge-derived *Actinomadura* sp. SpB081030SC-15. J Antibiot. 63, 401-403 (2010)

71. Takagi M,* Motohashi K, Nagai A, Hashimoto J and Shin-ya K. JBIR-83 and JBIR-84, new promothiocin derivatives, isolated from *Streptomyces* sp. RI19. J Antibiot. 63, 405-408 (2010)
72. Khan ST, Tamura T, Takagi M and Shin-ya K. *Streptomyces tateyamensis* sp. nov., *Streptomyces marinus* sp. nov. and *Streptomyces haliclona* sp. nov., three novel species of *Streptomyces* isolated from marine sponge *Haliclona* sp. Int J Syst Evol Microbiol.60, 2775-2779 (2010)
73. Motohashi K, Toda T, Sue M, Furihata K, Shizuri Y, Matsuo Y, Kasai H, Shin-ya K, Takagi M, Izumikawa M, Horikawa Y and Seto H. Isolation and structure elucidation of tumescenamides A and B, two peptides produced by *Streptomyces tumescens* YM23-260. J Antibiot.63, 549-552 (2010)
74. Motohashi K, Takagi M,* Yamamura H, Hayakawa M and Shin-ya K. A new angucycline and a new butenolide isolated from lichen-derived *Streptomyces* spp. J Antibiot. 63, 545-548 (2010)
75. Ueda JY, Takagi M* and Shin-ya K. New xanthoquinodin-like compounds, JBIR-97, -98 and -99, obtained from marine sponge-derived fungus *Tritirachium* sp. SpB081112MEf2. J Antibiot. 63, 615-618 (2010)
76. Yoshida M, Takeuchi H, Ishida Y, Yashiroda Y, Yoshida M, Takagi M, Shin-ya K and Doi T. Synthesis, structure determination, and biological evaluation of destruxin E. Org Lett. 12, 3792-3795 (2010)
77. Ueda JY, Hashimoto J, Yamamura H, Hayakawa M, Takagi M* and Shin-ya K. A new 16-membered tetraene macrolide JBIR-100 from a newly identified *Streptomyces* species. J. Antibiot. 63, 627-629 (2010)
78. Takagi M,* Motohashi K, Nagai A, Izumikawa M, Tanaka M, Fuse S, Doi T, Iwase K, Kawaguchi A, Nagata K, Takahashi T and Shin-ya K. Anti-influenza virus compound from *Streptomyces* sp. RI18. Org Lett. 12, 4664-4666 (2010)
79. Takagi M,* Motohashi K, Izumikawa M, Khan ST, Hwang JH and Shin-ya K. JBIR-66, a new metabolite isolated from tunicate-derived *Saccharopolyspora* sp. SS081219JE-28. Biosci Biotechnol Biochem. 74, 2355-2357 (2010)
80. Izumikawa M, Nagai A, Hashimoto J, Takagi M* and Shin-ya K. Isolation of 2 new naphthablin analogs, JBIR-79 and JBIR-80, from *Streptomyces* sp. RI24. J Antibiot 63, 729-731 (2010)
81. Kunoh T, Noda T, Koseki K, Sekigawa M, Takagi M, Shin-ya K, Goshima N, Iemura S, Natsume T, Wada S,

Mukai Y, Ohta S, Sasaki R and Mizukami T. A novel human dynactin-associated protein, dynAP, promotes activation of Akt, and ergosterol-related compounds induce dynAP-dependent apoptosis of human cancer cells. *Mol Cancer Ther.* 9, 2934-2942 (2010)

82. Komaki H, Ando K, Takagi M* and Shin-ya K. Dereplication of *Streptomyces* strains by automated southern hybridization with a polyketide synthase gene probe. *Actinomycetologica.* 24, 66-69 (2010)

83. Hwang JH, Takagi M*, Murakami H, Sekido Y and Shin-ya K. Induction of tubulin polymerization and apoptosis in malignant mesothelioma cells by a new compound JBIR-23. *Cancer Lett.* 300, 189-196 (2011)

84. Doi T, Shibata K, Yoshida M, Takagi M, Tera M, Nagasawa K, Shin-ya K and Takahashi T. (S)-Stereoisomer of telomestatin as a potent G-quadruplex binder and telomerase inhibitor. *Org Biomol Chem.* 9, 387-393 (2011)

85. Doi T, Numajiri Y, Takahashi T, Takagi M and Shin-ya K. Solid-phase total synthesis of (-)-apratoxin A and its analogues and their biological evaluation. *Chem Asian J.* 6, 180-188 (2011)

86. Khan ST, Komaki H, Motohashi K, Kozone I, Mukai A, Takagi M* and Shin-ya K. *Streptomyces* associated with a marine sponge *Haliclona* sp.; biosynthetic genes for secondary metabolites and products. *Environ Microbiol.* 13, 391-403 (2011)

87. Nagai A, Khan ST, Tamura T, Takagi M and Shin-ya K. *Streptomyces aomiensis* sp. nov., a novel species of *Streptomyces* isolated from a soil sample using membrane filter method. *Int J Syst Evol Microbiol.* 61, 947-950 (2011)

88. Motohashi K, Nagai A, Takagi M* and Shin-ya K. Two novel benzastatin derivatives, JBIR-67 and JBIR-73, isolated from *Streptomyces* sp. RI18. *J Antibiot.* 64, 281-283 (2011)

89. Kozone I, Izumikawa M, Motohashi K, Nagai A, Yoshida M, Doi T, Takagi M* and Shin-ya K. Isolation of new hexapeptides—JBIR-39 and JBIR-40—from a marine sponge-derived *Streptomyces* sp. Sp080513SC-24. *J Marine Sci Res Development.* 1, 1000101 (2011)

90. Ueda JY, Izumikawa M, Mukai A, Nagai A, Hwang JH, Takagi M* and Shin-ya K. New angucycline C-glycosides from *Streptomyces* sp. RI33. *J Antibiot.* 64, 367-372 (2011)

91. Fuse S, Okada K, Iijima Y, Munakata A, Machida K, Takahashi T, Takagi M, Shin-ya K, and Doi T. Total

synthesis of spiruchostatin B aided by an automated synthesizer. *Org Biomol Chem.* 9, 3825-3833 (2011)

92. Ueda JY, Izumikawa M, Kozono I, Yamamura H, Hayakawa M, Takagi M* and Shin-ya K. A phenylacetylated peptide, JBIR-96, isolated from *Streptomyces* sp. RI051-SDHV6. *J Nat Prod.* 74, 1344-1347 (2011)

93. Motohashi K, Inaba K, Fuse S, Doi T, Izumikawa M, Khan ST, Takagi M*, Takahashi T and Shin-ya K. JBIR-56 and JBIR-57, 2(1*H*)-pyrazinones from a marine sponge-derived *Streptomyces* sp. SpD081030SC-03. *J Nat Prod.* 74, 1630-1635 (2011)

94. Takagi M* and Shin-ya K. New species of actinomycetes do not always produce new compounds with high frequency. *J Antibiot.* 64, 699-701 (2011)

95. Izumikawa M, Takagi M* and Shin-ya K. Isolation of a novel macrocyclic dilactone - JBIR-101 - from *Promicromonospora* sp. RL26. *J Antibiot.* 64, 689-691 (2011)

96. Izumikawa M, Satou R, Motohashi K, Nagai A, Ohnishi Y, Takagi M*, Shin-ya K. Naphthoquinone-like polyketide isolated from *Streptomyces* sp. RI-77 and its predicted biosynthetic pathway. *J Nat Prod.* 74, 2588-2591 (2011)

97. Kawahara T, Takagi M* and Shin-ya K. JBIR-124: a novel antioxidative agent from a marine sponge-derived fungus *Penicillium citrinum* SpI080624G1f01. *J Antibiot.* 65, 45-47 (2012)

98. Izumikawa M, Hosoya T, Takagi M* and Shin-ya K. A new cyclizidine analog-JBIR-102-from *Saccharopolyspora* sp. RL78 isolated from mangrove soil. *J Antibiot.* 65, 41-43 (2012)

99. Kawahara T, Izumikawa M, Otoguro M, Yamamura H, Hayakawa M, Takagi M* and Shin-ya K. JBIR-94 and JBIR-125, antioxidative phenolic compounds from *Streptomyces* sp. R56-07. *J Nat Prod.* 75, 107-110 (2012)

100. Izumikawa M, Takagi M* and Shin-ya K. JBIR-78 and JBIR-95: Phenylacetylated peptides isolated from *Kibdelosporangium* sp. AK-AA56. *J Nat Prod.* 75, 280-284 (2012)

101. Hosoya T, Hirokawa T, Takagi M* and Shin-ya K. Trichostatin Analogues JBIR-109, JBIR-110, and JBIR-111 from the marine sponge-derived *Streptomyces* sp. RM72. *J Nat Prod.* 75, 285-289 (2012)

102. Ohnuki S, Kobayashi T, Ogawa H, Kozone I, Ueda JY, Takagi M, Shin-Ya K, Hirata D, Nogami S and Ohya Y. Analysis of the biological activity of a novel 24-membered macrolide JBIR-19 in *Saccharomyces cerevisiae* by the morphological imaging program CalMorph. FEMS Yeast Res. 12, 293-304 (2012)
103. Khan ST, Takagi M and Shin-ya K. Actinobacteria associated with the marine sponges *Cinachyra* sp., *Petrosia* sp., and *Ulosa* sp. and their culturability. Microbes Environ. 27, 99-104 (2012)
104. Kawahara T, Takagi M* and Shin-ya K. Three new depsipeptides, JBIR-113, JBIR-114 and JBIR-115, isolated from a marine sponge-derived *Penicillium* sp. fS36. J Antibiot. 65, 147-150 (2012)
105. Takahashi M, Takemoto Y, Shimazu T, Kawasaki H, Tachibana M, Shinkai Y, Takagi M, Shin-ya K, Igarashi Y, Ito A and Yoshida M. Inhibition of histone H3K9 methyltransferases by gliotoxin and related epipolythiodioxopiperazines. J Antibiot. 65, 263-265 (2012)
106. Takagi M,* Ueda JY, Hwang JH, Hashimoto J, Izumikawa M, Murakami H, Sekido Y and Shin-ya K. Tyrosyl-DNA phosphodiesterase 1 inhibitor from an anamorphic fungus. J Nat Prod. 75, 764-767 (2012)
107. Kawahara T, Hosoya T, Tsukamoto M, Okabe S, Yamamura H, Hayakawa M, Seimiya H, Takagi M* and Shin-ya K. JBIR-120: a new growth inhibitor of hormone-refractory prostate cancer cells. J Antibiot. 65, 373-375 (2012)
108. Maruyama C, Toyoda J, Kato Y, Izumikawa M, Takagi M, Shin-Ya K, Katano H, Utagawa T, Hamano Y. A stand-alone adenylation domain forms amide bonds in streptothricin biosynthesis. Nat Chem Biol. 8, 791-797 (2012)
109. Kawahara T, Nagai A, Takagi M, Shin-ya K. JBIR-137 and JBIR-138, new secondary metabolites from *Aspergillus* sp. fA75. J Antibiot. 65, 535-538 (2012)
110. Kawahara T, Izumikawa M, Takagi M, Shin-ya K. Relative configuration of JBIR-129, a cytotoxic 34-membered glycosidic polyol macrolide from *Streptomyces* sp. RK74. Org Lett. 14, 4434-4437 (2012)
111. Kawahara T, Nagai A, Takagi M, Shin-ya K. A new furaquinocin derivative, JBIR-136, from *Streptomyces* sp. 4963H2. J Antibiot. 65, 579-581 (2012)
112. Kawahara T, Hwang JH, Izumikawa M, Hashimoto J, Takagi M, Shin-ya K. JBIR-129 and -139, Cytotoxic

34-membered polyol macrolides of microbial origin. J Nat Prod. 75, 1814–1818 (2012)

113. Hosoya T, Takagi M, Shin-ya K. New pyridone alkaloids JBIR-130, JBIR-131 and JBIR-132 from *Isaria* sp. NBRC 104353. J Antibiot. 66, 235-238 (2013)

114. Izumikawa M, Kawahara T, Hwang JH, Takagi M, Shin-ya K. JBIR-107, a new metabolite from the marine-sponge-derived actinomycete, *Streptomyces tateyamensis* NBRC 105047. Biosci Biotechnol Biochem. 77, 663-665 (2013)

115. Komatsu M, Komatsu K, Koiwai H, Yamada Y, Kozono I, Izumikawa M, Hashimoto J, Takagi M, Omura S, Shin-ya K, Cane DE, Ikeda H. Engineered *Streptomyces avermitilis* Host for Heterologous Expression of Biosynthetic Gene Cluster for Secondary Metabolites. ACS Synth Biol. 2, 384-396 (2013)

116. Fuse S, Inaba K, Takagi M, Tanaka M, Hirokawa T, Johmoto K, Uekusa H, Shin-ya K, Takahashi T, Doi T. Design and synthesis of 2-phenyl-1,4-dioxo-spiro[4.5]deca-6,9-dien-8-ones as potential anticancer agents starting from cytotoxic spiromamakone A. Eur J Med Chem. 66, 180-184 (2013)

117. Hirohama M, Kumar A, Fukuda I, Matsuoka S, Igarashi Y, Saitoh H, Takagi M, Shin-ya K, Honda K, Kondoh Y, Saito T, Nakao Y, Osada H, Zhang KY, Yoshida M, Ito A. Spectomycin B1 as a Novel SUMOylation Inhibitor That Directly Binds to SUMO E2. ACS Chem Biol. 8, 2635-2642 (2013)

118. Shibata K, Yoshida M, Takahashi T, Takagi M, Shin-ya K, Doi T. Synthesis of hepta-oxazole macrocyclic analogues of telomestatin and evaluation of their telomerase inhibitory activities. Bull. Chem. Soc. Jpn 86, 1453-1465 (2013)

119. Satou R, Izumikawa M, Katsuyama Y, Matsui M, Takagi M, Shin-ya K, Ohnishi Y. Isolation, structural elucidation and biosynthesis of 3-hydroxy-6-dimethylallylindolin-2-one, a novel prenylated indole derivative from *Actinoplanes missouriensis*. J Antibiot. 67, 231-236 (2014)

120. Doi T, Yoshida M, Ohsawa K, Shin-ya K, Takagi M, Uekusa Y, Yamaguchi T, Kato K, Hirokawa T, Natsume T. Total synthesis and characterization of thielocin B1 as a protein–protein interaction inhibitor of PAC3 homodimer. Chem Sci. 5, 1860-1868 (2014)

121. Muliandi A, Katsuyama Y, Sone K, Izumikawa M, Moriya T, Hashimoto J, Kozono I, Takagi M, Shin-ya K, Ohnishi Y. Biosynthesis of JBIR-34. Biosynthesis of the 4-methyloxazoline-containing nonribosomal peptides,

JBIR-34 and -35, in *Streptomyces* sp. Sp080513GE-23. Chem Biol. 21, 923-934 (2015)

122. Fujiwara K, Tsukamoto H, Izumikawa M, Hosoya T, Kagaya N, Takagi M, Yamamura H, Hayakawa M, Shin-ya K, Doi T. Total synthesis and structure determination of JBIR-108-A 2-Hydroxy-2-(1-hydroxyethyl)-2,3-dihydro-3(2*H*)-furanone Isolated from *Streptomyces gramineus* IR087Pi-4. J Org Chem. 80, 114-132 (2015)

123. Yoshida M, Sekioka N, Izumikawa M, Kozone I, Takagi M, Shin-ya K, Doi T. Total synthesis and structure elucidation of JBIR-39: a linear hexapeptide possessing piperazic acid and γ -hydroxypiperazic acid residues. Chemistry. 21, 3031-3041 (2015)

124. Izumikawa M, Kozone I, Hashimoto J, Kagaya N, Takagi M, Koiwai H, Komatsu M, Fujie M, Satoh N, Ikeda H, Shin-ya K. Novel thioviridamide derivative--JBIR-140: heterologous expression of the gene cluster for thioviridamide biosynthesis. J Antibiot. 68, 533-536 (2015)

125. Ohno S, Katsuyama Y, Tajima Y, Izumikawa M, Takagi M, Fujie M, Satoh N, Shin-ya K, Ohnishi Y. Identification and Characterization of the Streptazone E Biosynthetic Gene Cluster in *Streptomyces* sp. MSC090213JE08. Chembiochem. 16, 2385-2391 (2015)

126. Izumikawa M, Kawahara T, Kagaya N, Yamamura H, Hayakawa M, Takagi M, Yoshida M, Doi T, Shin-ya K. Pyrrolidine-containing peptides, JBIR-126, -148, and -149, from *Streptomyces* sp. NBRC 111228. Tetrahedron Lett. 56, 5333–5336 (2015)

127. Ishigamia K, Kobayashia M, Takagi M, Shin-ya K, Watanabea H. Synthesis of marine oxylipin topsentolide A1 and its stereoisomers, and determination of the absolute configuration of the natural product. Tetrahedron 71, 8436–8443 (2015)

128. Motohashi K, Izumikawa M, Kagaya N, Takagi M, Shin-ya K. JBIR-76 and JBIR-77, modified naphthoquinones from *Streptomyces* sp. RI-77. J Antibiot. (2016)

128. Higa A, Hoshi H, Takagi M*. Differing responses of human stem cell-derived cardiomyocytes to arrhythmogenic drugs, determined using impedance measurements. Fundam. Toxicol. Sci. 3, 47-53 (2016)

129. Katsuyama Y, Sone K, Satou R, Izumikawa M, Takagi M, Fujie M, Satoh N, Shin-ya K, Ohnishi Y. Involvement of the Baeyer-Villiger Monooxygenase IfnQ in the Biosynthesis of Isofuranonaphthoquinone Scaffold of JBIR-76 and -77. Chembiochem. 17, 1021-1028 (2016)

130. Hoshi H, Hiyama G, Ishikawa K, Inageda K, Fujimoto J, Wakamatsu A, Togashi T, Kawamura Y, Takahashi N, Higa A, Goshima N, Semba K, Watanabe S, Takagi M*. Construction of a novel cell-based assay for the evaluation of anti-EGFR drug efficacy against EGFR mutation. *Oncol Rep.* 37, 66-76 (2017)
131. Ito S, Ogawa K, Takeuchi K, Takagi M, Yoshida M, Hirokawa T, Hirayama S, Shin-ya K, Shimada I, Doi T, Goshima N, Natsume T, Nagata K. A small-molecule compound inhibits a collagen-specific molecular chaperone and could represent a potential remedy for fibrosis. *J Biol Chem.*, 292, 20076-20085. (2017)
132. Higa A, Hoshi H, Yanagisawa Y, Ito E, Morisawa G, Imai JI, Watanabe S, Takagi M*. Evaluation system for arrhythmogenic potential of drugs using human-induced pluripotent stem cell-derived cardiomyocytes and gene expression analysis. *J Toxicol Sci.*, 42, 755-761. (2017)
133. Tsutsumi H, Katsuyama Y, Izumikawa M, Takagi M, Fujie M, Satoh N, Shin-Ya K, Ohnishi Y. Unprecedented cyclization catalyzed by a cytochrome P450 in benzastatin biosynthesis. *J Am Chem Soc.*, 40, 6631-6639 (2018).
134. Tamura H, Higa A, Hoshi H, Hiyama G, Takahashi N, Ryufuku M, Morisawa G, Yanagisawa Y, Ito E, Imai JI, Dobashi Y, Katahira K, Soeda S, Watanabe T, Fujimori K, Watanabe S, Takagi M*. Evaluation of anticancer agents using patient-derived tumor organoids characteristically similar to source tissues. *Oncol Rep.*, 40, 635-646, (2018)
135. Ohsawa K, Yoshida M, Izumikawa M, Takagi M, Shin-Ya K, Goshima N, Hirokawa T, Natsume T, Doi T. Synthesis and biological evaluation of thielocin B1 analogues as protein-protein interaction inhibitors of PAC3 homodimer. *Bioorg Med Chem.* 26, 6023-6034, (2018)
136. Takahashi N, Hoshi H, Higa A, Hiyama G, Tamura H, Ogawa M, Takagi K, Goda K, Okabe N, Muto S, Suzuki H, Shimomura K, Watanabe S, Takagi M. An in vitro system for evaluating molecular targeted drugs using lung patient-derived tumor organoids. *Cells.* 8, 481 (2019)
137. Takahashi N, Higa A, Hiyama G, Tamura H, Hoshi H, Dobashi Y, Katahira K, Ishihara H, Takagi K, Goda K, Okabe N, Muto S, Suzuki H, Shimomura K, Watanabe S, Takagi M. Construction of in vitro patient-derived tumor models to evaluate anticancer agents and cancer immunotherapy. *Oncol Lett.* 5, 406 (2021)
138. Higa A, Takahashi N, Hiyama G, Tamura H, Hoshi H, Shimomura K, Watanabe S, Takagi M.

High-Throughput In Vitro Assay using Patient-Derived Tumor Organoids. J Vis Exp. 172 (2021)

139. Sasaki K, Suzuki M, Sonoda T, Schneider-Poetsch T, Ito A, Takagi M, Fujishiro S, Sohtome Y, Dodo K, Umehara T, Aburatani H, Shin-Ya K, Nakao Y, Sodeoka M, Yoshida M. Visualization of the dynamic interaction between nucleosomal histone H3K9 tri-methylation and HP1 α chromodomain in living cells. Cell Chem Biol. 29, 1153-1161.e5. (2022)

140. Ishikawa K, Tamamura S, Takahashi N, Takagi M, Semba K, Watanabe S. Isolation of Reporter Cells That Respond to Vitamin A and/or D Using a piggyBac Transposon Promoter-Trapping Vector System. Int J Mol Sci. 23, 9366. (2022)

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総説

葛山智久、高木基樹、瀬戸治男

イソプレノイド生合成研究の新展開：有用イソプレノイドの生産を目指して
バイオサイエンスとインダストリー、2001. 59: 455-458

高木基樹、瀬戸治男、葛山智久

イソプレニュニット生合成の多様性
蛋白質 核酸 酵素、2002. 47: 58-65

Takagi M,* Shin-ya K. Construction of a natural product library containing secondary metabolites produced by actinomycetes. J Antibiot. 65, 443-447 (2012)

高木 基樹、新家 一男

海洋由来の放線菌が生産する二次代謝産物の新規薬剤探索用ライブラリーの構築
バイオサイエンスとインダストリー、2014. 72: 208-212

高木基樹

新型コロナウイルスに対す抗体を活用したマスクの開発
光が丘(福島県立医科大学医学部同窓会報)、2022. 51: 70-71

高木基樹

新型コロナウイルスに対す抗体を活用した薬や衛生用品の開発

福島の進路、2022. 5: 5-8

高木基樹

がん組織に近い培養細胞の開発 世界へ提供可能に

光が丘(福島県立医科大学医学部同窓会報) 2023. 52: 74-75.

高木基樹

新型コロナウイルスに対す抗体を活用した薬や衛生用品の開発

日本大学知財ジャーナル、2023. 16: in press.

著書

福島PDO®を用いた抗がん剤の評価、比嘉亜里沙、高木基樹、実験医学別冊「患者由来がんモデルを用いたがん研究実践ガイド CDX・スフェロイド・オルガノイド・PDX/PDOX を網羅 臨床検体の取り扱い指針から樹立プロトコールと入手法まで」、佐々木博巳/編、羊土社、東京、2019年10月

RNAi 療法：siRNA のがん治療薬への応用、高木基樹、嶋本顕、古市泰宏、RNAi 法とアンチセンス法、(株)講談社、東京、2005 年 6 月

RecQヘリカーゼを標的とした制癌剤治療、高木基樹、佐藤あゆみ、嶋本顕、古市泰宏、遺伝子医学MOOK「RNAと創薬」、株式会社メディカル ドゥ、大阪、2006年1月

特許

1. 放線菌由来のメバロン酸経路に関与する酵素の遺伝子、発明者：瀬戸治男 葛山智久 高橋俊二 高木基樹、特願平11 - 348375、国際出願 PCT/JP2000/008620
2. 癌細胞に対するアポトーシス誘導剤、発明者：高木基樹、嶋本顕、古市泰宏、佐藤あゆみ、特願 2003-140685、国際出願 PCT/JP2004/007145
3. アルキル化薬感受性を上昇させる方法、発明者：高木基樹、嶋本顕、古市泰宏、特願2003-197918、国際出願 PCT/JP2004/010445

4. 染色体安定化に関する遺伝子を標的とする癌細胞特異的アポトーシス誘導剤、発明者：高木基樹、二見和伸、嶋本顕、古市泰宏、特願2004-115404、国際出願 PCT/JP2005/006914
5. 癌細胞特異的細胞増殖抑制剤、発明者：高木基樹、嶋本顕、古市泰宏、佐藤あゆみ、特願2004-336742、国際出願 PCT/JP2005/021099
6. siRNA含有組成物、発明者：佐藤あゆみ、平井美和、高木基樹、嶋本顕、丸山厚、チェソンウォン、狩野有宏、特願2005-142420、国際出願 PCT/JP2006/309699
7. 抗癌剤増感剤、発明者：二見和伸、高木基樹、杉本正信、古市泰宏、特願2006-265988、国際出願 PCT/JP2007/068980
8. 肝指向性リポソーム組成物、発明者：佐藤あゆみ、高木基樹、嶋本顕、川上 茂、橋田 充、特許出願2005-308288
9. テロメラーゼ阻害剤、発明者：長澤 和夫、寺 正行、新家 一男、高木 基樹、特願2008-166494、国際出願 PCT/JP2009/061569
10. 薬剤の心毒性評価方法及びそのための試薬又はキット、発明者：高木 基樹、他、特願2017-141689

その他、8件を出願。