

2019 以前の Publication list

- (1) Yokoyama, Y.; Arai, M. A.*; Hara, Y.; Ishibashi, M.* "Nonactic acid derivatives isolated from *Streptomyces werraensis* IFM12104 in a screening program for BMI1 promoter inhibitory activity" *Nat. Prod. Commun.* **2019**, *14* (7) 1934578X19866583, DOI:10.1177/1934578X19866583
- (2) Yokoyama, Y.; Arai, M. A.*; Hara, Y.; Ishibashi, M.* "Identification of BMI1 promoter inhibitors from *Streptomyces* sp. IFM-11958" *Bioorg. Med. Chem.* **2019**, *27*, 2998-3003. DOI:10.1016/j.bmc.2019.05.002
- (3) Arai, M. A.*; Ochi, F.; Makita, Y.; Chiba, T.; Higashi, K.; Suganami, A.; Tamura, Y.; Toida, T.; Iwama, A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M.* "GLI1 inhibitors isolated by target protein oriented natural products isolation (TPO-NAPI) with hedgehog inhibition" *ACS Chem. Biol.* **2018**, *13*, 2551-2559. DOI: 10.1021/acscchembio.8b00492 (*selected as a cover article)
- (4) Hara, Y.; Arai, M. A.; Toume, K.; Masu, H.; Sato, T.; Komatsu, K.; Yaguchi, T.; Ishibashi, M. "Coculture of a pathogenic actinomycete and animal cells to produce nocarjamide, a cyclic nonapeptide with Wnt signal-activating effect" *Org. Lett.* **2018**, *20*, 5831-5834. DOI:10.1021/acs.orglett.8b02522
- (5) Hara, S.; Hara, Y.; Arai, M. A.; Kusuya, Y.; Takahashi, H.; Yaguchi, T.; Ishibashi, M. "Isolation of nabscessin C from *Nocardia abscessus* IFM 10029^T and a study on biosynthetic pathway for nabscessins" *Chem. Pharm. Bull.* **2018**, *66*, 976-982. DOI:10.1248/cpb.c18-00430
- (6) Arai, M. A.*; Masuda, A.; Suganami, A.; Tamura, Y.; Ishibashi, M.* "Synthesis and evaluation of fuligocandin B derivatives with TRAIL resistance overcoming activity" *Chem. Pharm. Bull.* **2018**, *66*, 810-817. (*selected as a cover article) **(Highlighted paper selected by Editor-in-Chief)** DOI:10.1248/cpb.c18-00308
- (7) Arai, M. A.*; Akamine, R.; Hayashi, N.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M.* "The Notch Inhibitors Isolated from *Nerium indicum*" *J. Nat. Prod.* **2018**, *81*, 1235-1240. DOI:10.1021/acs.jnatprod.7b01031
- (8) Arai, M. A.*; Akamine, R.; Tsuchiya, A.; Yoneyama, T.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M.* "The Notch inhibitor cowanin accelerates nicastrin degradation" *Sci. Rep.* **2018**, *8*, 5376. DOI:10.1038/s41598-018-23698-4
- (9) Sampei, M.; Arai, M. A.*; Ishibashi, M.* "Total syntheses of schizandriside, saracoside and (±)-isolariciresinol with antioxidant activities" *J. Nat. Med.* **2018**, *72*, 651-654. DOI:10.1007/s11418-018-1198-6

- (10) Seephonkai, P.; Ishikawa, R.; Arai, M. A.; Kowithayakorn, T.; Koyano, T.; Ishibashi, M. "New flavanol dimers from the bark of *Celtis tetrandia* and their TRAIL resistance-overcoming activity" *Nat. Prod. Commun.* **2018**, *13*, 427-430.
- (11) Hara, Y.; Arai, M. A.; Sakai, K.; Ishikawa, N.; Gono, T.; Yaguchi, T.; Ishibashi, M. "Dehydropropylpantothenamide isolated by a co-culture of *Nocardia tenerifensis* IFM 10554^T in the presence of animal cells" *J. Nat. Med.* **2018**, *72*, 280-289. DOI:10.1007/s11418-017-1161-y
- (12) Liu, X.; Arai, M. A.; Toume, K.; Ishibashi, M. "Isolation of resistomycin from a terrestrial actinomycete with TRAIL resistance-overcoming activity" *Nat. Prod. Commun.* **2018**, *13*, 65-66.
- (13) Yoneyama, T.; Arai, M. A.*; Akamine, R.; Koryudzu, K.; Tsuchiya, A.; Sadhu, S. K.; Ahmed, F.; Itoh, M.; Okamoto, R.; Ishibashi, M.* "Notch inhibitors from *Calotropis gigantea* that induce neuronal differentiation of neural stem cells" *J. Nat. Prod.* **2017**, *80*, 2453-2461. DOI:10.1021/acs.jnatprod.7b00282
- (14) Karmakara, U. K.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Boesenberols I-K, new isopimarane diterpenes from *Boesenbergia pandurata* with TRAIL-resistance overcoming activity" *Tetrahedron Lett.* **2017**, *58*, 3838-3841. DOI:10.1016/j.tetlet.2017.08.055
- (15) Arai, M. A.*; Yamaguchi, Y.; Ishibashi, M.* "Total Synthesis of Agalloside, Isolated from *Aquilaria agallocha*, by the 5-*O*-Glycosylation of Flavan" *Org. Biomol. Chem.* **2017**, *15*, 5025-5032. DOI:10.1039/C7OB01004D
- (16) Arai, M. A.*; Utsumi, T.; Yanase, N.; Fujimatsu, T.; Ishibashi, M.* "Efficient synthesis of heterocyclic flavonoids with hedgehog signal inhibitory activity" *Chem. Pharm. Bull.* **2017**, *65*, 784-795. **(Highlighted paper selected by Editor-in-Chief)** DOI:10.1248/cpb.c17-00305
- (17) Arai, M. A.*; Tanaka, M.; Tanouchi, K.; Ishikawa, N.; Ahmed, F.; Sadhu, S. K.; Ishibashi, M.* "Hes1 binding compounds isolated by Target Protein Oriented Natural Products Isolation (TPO-NAPI)" *J. Nat. Prod.* **2017**, *80*, 538-543. DOI:10.1021/acs.jnatprod.6b01072
- (18) Yoneyama, T.; Arai, M. A.*; Koyano, T.; Kowithayakorn, T.; Ishibashi, M.* "Isolation and evaluation of hedgehog inhibitors from Christmas grass (*Themeda arguens*)" *Heterocycles* **2017**, *95*, 210-222. DOI:10.3987/COM-16-S(S)4
- (19) Kaneta, Y.; Arai, M. A.; Ishikawa, N.; Toume, K.; Koyano, T.; Kowithayakorn, T.; Chiba, T.; Iwama, A.; Ishibashi, M. "Identification of BMI1 promoter inhibitors from *Beaumontia murtonii* and *Eugenia operculata*" *J. Nat. Prod.* **2017**, *80*, 1853-1859. DOI:10.1021/acs.jnatprod.7b00138

- (20) Arai, M. A.*; Ishikawa, N.; Tanaka, M.; Uemura, K.; Sugimitsu, N.; Suganami, A.; Tamura, Y.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M.* "Hes1 inhibitor isolated by target protein oriented natural products isolation (TPO-NAPI) of differentiation activators of neural stem cells" *Chem. Sci.* **2016**, *7*, 1514-1520. DOI:10.1039/c5sc03540f
- (21) Arai, M. A.*; Taguchi, S.; Komatsuzaki, K.; Uchiyama, K.; Masuda, A.; Sampei, M.; Satoh, M.; Kado, S.; Ishibashi, M.* "Valosin-containing Protein is a Target of 5'-l Fuligocandin B and Enhances TRAIL Resistance in Cancer Cells" *ChemistryOPEN*, **2016**, *5*, 574-579. DOI: 10.1002/open.201600081
- (22) Arai, M. A.*; Kofuji, Y.; Tanaka, Y.; Yanase, N.; Yamaku, K.; Fuentes, R. G.; Karmakar, U. K.; Ishibashi, M.* "Synthesis of rocaglamide derivatives and evaluation of their Wnt signal inhibitory activities" *Org. Biomol. Chem.* **2016**, *14*, 3061-3068. DOI:10.1039/c5ob02537k
- (23) Karmakar, U. K.; Ishikawa, N.; Arai, M. A.; Ahmed, F.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Boesenberols, pimarane diterpenes with TRAIL resistance-overcoming activity from *Boesenbergia pandurata*" *J. Nat. Prod.* **2016**, *79*, 2075-2082. DOI:10.1021/acs.jnatprod.6b00424
- (24) Shono, T.; Ishikawa, N.; Toume, K.; Arai, M. A.; Masu, H.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Cerasoidine, a bis-aporphine alkaloid isolated from *Polyalthia cerasoides* during screening for Wnt signal inhibitors" *J. Nat. Prod.* **2016**, *79*, 2083-2088. DOI:10.1021/acs.jnatprod.6b00409
- (25) Fujita, K.; Sugiyama, R.; Nishimura, S.; Ishikawa, N.; Arai, M. A.; Ishibashi, M.; Kakeya, H. "Stereochemical assignment and biological evaluation of BE-14106 unveils the importance of one acetate unit for the antifungal activity of polyene macrolactams" *J. Nat. Prod.* **2016**, *79*, 1877-1880. DOI:10.1021/acs.jnatprod.6b00250
- (26) Ahmed, F.; Toume, K.; Ishikawa, N.; Arai, M. A.; Sadhu, S. K.; Ishibashi, M. "Constituents from *Entada scandens* with TRAIL-resistance overcoming activity" *Nat. Prod. Commun.* **2016**, *11*, 993-995.
- (27) Karmakar, U. K.; Toume, K.; Ishikawa, N.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M. "Bioassay-guided isolation of compounds with TRAIL-resistance overcoming activity from *Datura stramonium*" *Nat. Prod. Commun.* **2016**, *11*, 185-187.
- (28) Arai, M. A. *; Uemura, K.; Hamahiga, N.; Ishikawa, N.; Koyano, T.; Kowithayakorn, T.; Kaddar, T.; Carreau, M.; Ishibashi, M. * "Naturally occurring FANCF-Hes1 complex inhibitors from *Wrightia religiosa*" *Med. Chem. Commun.*

- 2015**, 6, 455-460. (招待論文; **Themed issue, New Talent: Asia-Pacific**). DOI:10.1039/C4MD00495G
- (29) Arai, M. A. *; Koryudzu, K.; Ishibashi, M. * "Inubosins A, B, and C are new acridine alkaloids isolated from *Streptomyces* sp. IFM 11440 that show Ngn2 promoter activity" *J. Nat. Prod.* **2015**, 78, 311-314. DOI:10.1021/np5006218
- (30) Arai, M. A.*; Uchida, K.; Sadhu, S. K.; Ahmed, F.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M.* "Hedgehog inhibitors from *Artocarpus communis* and *Hyptis suaveolens*" *Bioorg. Med. Chem.* **2015**, 23, 4150-4154. DOI:10.1016/j.bmc.2015.06.058
- (31) Arai, M. A.*; Akamine, R.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M.* "Hedgehog/GLI- mediated transcriptional activity inhibitors from *Crinum asiaticum*" *J. Nat. Med.* **2015**, 69, 538-542. DOI:10.1007/s11418-015-0922-8
- (32) Yoneyama, T.; Arai, M. A.*; Sadhu, S. K.; Ahmed, F.; Ishibashi, M.* "Hedgehog inhibitors from *Withania somnifera*" *Bioorg. Med. Chem. Lett.* **2015**, 25, 3541-3544. DOI:10.1016/j.bmcl.2015.06.081
- (33) Fuentes, R. G.; Arai, M. A.*; Sadhu, S. K.; Ahmed, F.; Ishibashi, M.* "Phenolic compounds from the bark of *Oroxylum indicum* identified as Ngn2 promoter activators" *J. Nat. Med.* **2015**, 78, 864-872. DOI:10.1007/s11418-015-0919-3
- (34) Ohishi, K.; Toume, K.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M. "Coronaridine, an iboga type alkaloid from *Tabernaemontana divaricata*, inhibits Wnt signaling pathway by decreasing β -catenin mRNA expression" *Bioorg. Med. Chem. Lett.* **2015**, 25, 3937-3940. DOI:10.1016/j.bmcl.2015.07.036
- (35) Karmakar, U. K.; Ishikawa, N.; Toume, K.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M. "Sesquiterpenes with TRAIL-resistance overcoming activity from *Xanthium strumarium*" *Bioorg. Med. Chem.* **2015**, 23, 4746-4754. DOI:10.1016/j.bmc.2015.05.044
- (36) Shono, T.; Ishikawa, N.; Toume, K.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M. "Boehmenan, a lignan, isolated from *Hibiscus ficulneus* showed Wnt signal inhibitory activity" *Bioorg. Med. Chem. Lett.* **2015**, 25, 2735-2738. DOI:10.1016/j.bmcl.2015.05.037
- (37) Ohishi, K.; Toume, K.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Mizoguchi, T.; Itoh, M.; Ishibashi, M. "9-Hydroxycanthin-6-one, a β -carboline alkaloid from *Eurycoma longifolia*, is the first Wnt signal inhibitor through activation of GSK3 β without depending on CK1 α " *J. Nat. Prod.* **2015**, 78, 1139-1146. DOI:10.1021/acs.jnatprod.5b00153
- (38) Fuentes, R. G.; Toume, K.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M.

- "Scopadulciol, isolated from *Scoparia dulcis*, induces β -catenin degradation and overcomes TRAIL resistance in AGS human gastric adenocarcinoma cells" *J. Nat. Prod.* **2015**, 78, 864-872. DOI:10.1021/acs.jnatprod.5b00153
- (39) Fuentes, R. G.; Toume, K.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M. "Limonoids with Wnt signal inhibitory activity isolated from the fruits of *Azadirachta excelsa*" *Phytochem. Lett.* **2015**, 11, 280-285. DOI:10.1007/s11418-015-0919-3
- (40) Toume, K.; Habu, T.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Prenylated flavonoids and resveratrol derivatives isolated from *Artocarpus communis* with the ability to overcome TRAIL resistance" *J. Nat. Prod.* **2015**, 78, 103-110. DOI:10.1021/acs.jnatprod.5b00061
- (41) Tahmina, H.; Toume, K.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M. "Isolation of alkamides with death receptor-enhancing activities from *Piper chaba*" *Heterocycles* **2015**, 90, 1317-1322. DOI:10.3987/COM-14-S(K)68
- (42) Arai, M. A.*; Uchida, K.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M.* "Physalin H from *Solanum nigrum* as Hh signaling inhibitor blocks GLI1-DNA complex formation" *Beil. J. Org. Chem.* **2014**, 10, 134-140. (招待論文; **Themed issue, "Natural products in synthesis and biosynthesis"**)
- (43) Park, H.-Y.; Toume, K.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M. "Calotropin: a cardenolide from *Calotropis gigantea* that inhibits Wnt signaling by increasing casein kinase 1 α in colon cancer cells" *ChemBioChem* **2014**, 15, 872-878.
- (44) Toume, K.; Tsukahara, K.; Ito, H.; Arai, M. A.; Ishibashi, M. "Chromomycins A2 and A3 from marine actinomycete with TRAIL resistance-overcoming activity and Wnt signal inhibitory activity" *Mar. Drugs* **2014**, 12, 3466-3476.
- (45) Ohishi, K.; Toume, K.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Mizoguchi, T.; Itoh, M.; Ishibashi, M. "Ricinine: a pyridone alkaloid from *Ricinus communis* that activates the Wnt signaling pathway through casein kinase 1 α " *Bioorg. Med. Chem.* **2014**, 22, 4597-4601.
- (46) Fuentes, R. G.; Toume, K.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Constituent from the rhizomes of *Curcuma comosa* and their Wnt signal inhibitory activity" *Heterocycles* **2014**, 88, 1501-1509.
- (47) Park, H.-Y.; Toume, K.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. " β -sitosterol and flavonoids isolated from *Bauhinia malabarica* found in a screening program for Wnt signal inhibitory activity" *J. Nat. Med.* **2014**, 68, 242-245.

- (48) Arai, T.*; Yamamoto, Y.; Awata, A.; Kamiya, K.; Ishibashi, M.; Arai, M. A.* "Catalytic Asymmetric Synthesis of Mixed 3,3'-Bisindoles and Their Evaluation as Wnt Signaling Inhibitors" *Angew. Chem. Int. Ed.* **2013**, 52, 2486-2490.
- (49) Arai, M. A.*; Fujimatsu, T.; Uchida, K.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M.* "Hh signaling inhibitors from *Vitex negundo*; naturally occurring inhibitors of the GLI1–DNA complex" *Mol. BioSyst.* **2013**, 9, 1012-1018. (招待論文 ; **Themed issue "Chemical Biology in Asia"**)
- (50) Arai, M. A.*; Koryudzu, K.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M.* "Naturally Occurring Ngn2 Promoter Activators from *Butea superba*" *Mol. BioSyst.* **2013**, 9, 2489-2497.
- (51) Minakawa, T.; Toume, K.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Prenylflavonoids isolated from *Artocarpus champeden* with TRAIL-resistance overcoming activity" *Phytochemistry* **2013**, 96, 299-304.
- (52) Toume, K.; Kamiya, K.; Arai, M. A.; Mori, N.; Sadhu, S. K.; Ahmed, F.; and Ishibashi, M. "Xylogranin B, a potent Wnt signal inhibitory limonoid from *Xylocarpus granatum*" *Organic. Lett.* **2013**, 15, 6106-6109.
- (53) Tamai, Y.; Toume, K.; Arai, M. A.; Ishibashi, M. "Griseoviridin and cyclic hydroxamates found in a screening program for Wnt signal inhibitor" *Heterocycles* **2012**, 86, 1517-1524.
- (54) Minakawa, T.; Toume, K.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M. "Eudesmane-type sesquiterpenoid and guaianolides from *Kandelia candel* in a screening program for compounds to overcome TRAIL-resistance" *J. Nat. Prod.* **2012**, 75, 1431-1435.
- (55) Toume, K.; Nakazawa, T.; Tahmina, H.; Ohtsuki, T.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Cycloartane triterpenes and ingol diterpenes isolated from *Euphorbia nerifolia* in a screening program for death-receptor expression-enhancing activity" *Planta medica* **2012**, 78, 1370-1377.
- (56) Abdelfattah, M. S.; Toume, K.; Arai, M. A.; Masu, H.; Ishibashi, M. "Katorazone, a novel yellow pigment with 2-azaquinone-phenylhydrazone structure produced by *Streptomyces* sp. IFM 11307" *Tetrahedron Lett.* **2012**, 53, 3346-3348.
- (57) Koryudzu, K.; Arai, M. A.; Ahmed, F.; Sadhu, S. K.; Ishibashi, M. "A new resin glycoside from *Ipomoea maxima*" *Nat. Prod. Commun.* **2012**, 7, 219-220.
- (58) Yamaguchi, T.; Toume, K.; Arai, M. A.; Ahmed, F.; Sadhu, S. K.; Ishibashi, M. "Phorbol esters with Wnt signal-augmenting effects isolated from *Excoecaria indica*" *Nat. Prod. Commun.* **2012**, 7, 475-477.
- (59) Tamai, Y.; Toume, K.; Arai, M. A.; Hayashida, A.; Kato, H.; Shizuri, Y.;

- Tsukamoto, S.; Ishibashi, M. "Nonactin and related compounds found in a screening program for Wnt signal inhibitory activity" *Heterocycles* **2012**, *84*, 1245-1250.
- (60) Rifai, Y.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Acoschimperoside P, 2'-acetate: a Hedgehog signaling inhibitory constituent from *Vallaris glabra*" *J. Nat. Med.* **2011**, *65*, 629-632.
- (61) Rifai, Y.; Arai, M. A.; Sadhu, S. K.; Ahmed, F.; Ishibashi, M. "New Hedgehog/GLI signaling inhibitors from *Excoecaria agallocha*" *Bioorg. Med. Chem. Lett.* **2011**, *21*, 718-722.
- (62) Arai, M. A.*; Tateno, C.; Koyano, T.; Kowithayakorn, T.; Kawabe, S.; Ishibashi, M.* "New Hedgehog/GLI-signaling inhibitors from *Adenium obesum*" *Org. Biomol. Chem.* **2011**, *9*, 1133-1139.
- (63) Toume, K.; Nakazawa, T.; Ohtsuki, T.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Cycloartane Triterpenes Isolated from *Combretum quadrangulare* in a Screening Program for Death-Receptor Expression Enhancing Activity" *J. Nat. Prod.* **2011**, *74*, 249-255. (
- (64) Ippongi, Y.; Ohtsuki, T.; Toume, K.; Arai, M. A.; Yamamoto, Y.; Ishibashi, M. "Tubiferic acid, a new 9,10-secocycloartane triterpenoid acid isolated from the myxomycete *Tubulifera arachnoidea*" *Chem. Pharm. Bull.* **2011**, *59*, 279-281.
- (65) Munetsuna, E.; Nakabayashi, S.; Kawanami, R.; Yasuda, K.; Ohta, M.; Arai, M. A.; Kittaka, A.; Chen, T. C.; Kamakura, M.; Ikushiro, S.; Sakaki, T. "Mechanism of the anti-proliferative action of 25-hydroxy-19-nor-vitamin D₃ in human prostate cells" *J. Molecular Endocrinology* **2011**, *47*, 209-218.
- (66) Arai, M. A.*; Hanazawa, S.; Uchino, Y.; Li, X.; Ishibashi, M.* "Total synthesis and evaluation of Wnt signal inhibition of melleumin A, B and their derivatives" *Org. Biomol. Chem.* **2010**, *8*, 5285-5293.
- (67) Arai, M. A.*; Seto, J.; Ahmed, F.; Uchiyama, K.; Ishibashi, M.* "Practical Total Synthesis of Fuligocandins A, B" *Synlett* **2010**, *16*, 2498-2502.
- (68) Rifai, Y.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Terpenoids and flavonoid glycoside from *Acacia pennata* leaves as Hedgehog/GLI-mediated transcriptional inhibitors" *J. Nat. Prod.* **2010**, *73*, 995-997.
- (69) Ahmed, F.; Toume, K.; Sadhu, S. K.; Ohtsuki, T.; Arai, M. A.; Ishibashi, M. "Constituents of *Amoora cucullata* with TRAIL resistance overcoming activity" *Org. Biomol. Chem.* **2010**, *8*, 3696-3703.

- (70) Mori, N.; Toume, K.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "2-Methoxy-1,4-naphthoquinone isolated from *Impatiens balsamina* in a screening program for activity to inhibit Wnt signaling" *J. Nat. Med.* **2010**, *65*, 234-236.
- (71) Shintani, A.; Toume, K.; Rifai, Y.; Arai, M. A.; Ishibashi, M. "A bisindole alkaloid with hedgehog signal-inhibitory activity from the myxomycete *Perichaena chrysosperma*" *J. Nat. Prod.* **2010**, *73*, 1711-1713.
- (72) Minakawa, T.; Toume, K.; Ahmed, F.; Sadhu, S. K.; Ohtsuki, T.; Arai, M. A.; Ishibashi, M. "Constituents of *Pongamia pinnata* Isolated in a Screening for Activity to Overcome TRAIL-Resistance" *Chem. Pharm. Bull.* **2010**, *58*, 1549-1551.
- (73) Brown, J. B.; Urata, T.; Tamura, T.; Arai, M. A.; Kawabata, T.; Akutsu, T. "Compound Analysis via Graph Kernels Incorporating Chirality" *J. Bioinformatics Comput. Biol.* **2010**, *8*, 63-81.
- (74) Kittaka, A.; Hara, H.; Yasuda, K.; Takano, M.; Arai, M. A.; Sawada, D.; Saito, H.; Takenouchi, K.; Tai, T. C.; Sakaki, T., "Studies on the synthesis and metabolism of 14-epi-2 α -(3-hydroxypropyl)-19-norvitamin D₃ and its 2 β -isomer" *Heterocycles* **2010**, *82*, 649-661.
- (75) Arai, M. A.*; Masada, A.; Ohtsuka, T.; Kageyama, R.; Ishibashi, M. "The first Hes1 dimer inhibitors from natural products" *Bioorg. Med. Chem. Lett.* **2009**, *19*, 5778-5781.
- (76) Arai, M. A.*; Kobatake, E.; Koyano, T.; Kowithayakorn, T.; Kato, S.; Ishibashi, M.* "A Method for the Rapid Discovery of Naturally Occurring Products by Proteins Immobilized on Magnetic Beads and Reverse Affinity Chromatography" *Chem. Asian J.* **2009**, *4*, 1802-1808.
- (77) Ishibashi, M. and Arai, M. A. "Search for Bioactive Natural Products Targeting Cancer-Related Signaling Pathways" *J. Synth. Org. Chem., Jpn.* **2009**, *67*, 1094-1104.
- (78) Honzawa, S.; Takahashi, N.; Yamashita, A.; Sugiura, T.; Kurihara, M.; Arai, M. A.; Kato, S.; Kittaka, A., "Synthesis of a 1 α -C-methyl analogue of 25-hydroxyvitamin D₃: Interaction with a mutant vitamin D receptor Arg274Leu" *Tetrahedron* **2009**, *65*, 7135-7145.
- (79) Arai, M. A.*; Sato, M.; Sawada, K.; Hosoya, T.; Ishibashi, M.*, "Efficient Synthesis of Chromone and Flavonoid Derivatives with Diverse Heterocyclic Units" *Chem. Asian J.* **2008**, *3*, 2056-2064.
- (80) Arai, M. A.*; Tateno, C.; Hosoya, T.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M.*, "Hedgehog/GLI-mediated transcriptional inhibitors from *Zizyphus*

- cambodiana*" *Bioorg. Med. Chem.*, **2008**, *16*, 9420-9424.
- (81) Hosoya, T.; Arai, M. A.; Koyano, T.; Kowithayakorn, T.; Ishibashi, M. "Naturally Occurring Small-molecule Inhibitors of Hedgehog/GLI-mediated Transcription" *ChemBioChem* **2008**, *9*, 1082-1092. (most cited articles published in 2008 or 2009)
- (82) Hanazawa, S.; Arai, M. A.; Li, X.; Ishibashi, M. "Determination of absolute stereochemistry, total synthesis, and evaluation of peptides from the myxomycete *Physarum melleum*" *Bioorg. Med. Chem. Lett.* **2008**, *18*, 95-98.
- (83) Arai, M. A.; Uchino, Y.; Hanazawa, S.; Li, X.; Kimura, N.; Ishibashi, M., "Synthesis and Evaluation of Isomers of Melleumin B from the Myxomycete *Physarum melleum*; An Approach for Wnt Signal Inhibitor Trusted in Nature" *Heterocycles* **2008**, *76*, 1425-1438.
- (84) Honzawa, S.; Yamamoto, Y.; Yamashita, A.; Sugiura, T.; Kurihara, M.; Arai, M. A.; Kato, S.; Kittaka, A. "The 2 α -(3-hydroxypropyl) group as an active motif in vitamin D₃ analogues as agonists of the mutant vitamin D receptor (Arg274Leu) " *Bioorg. Med. Chem.* **2008**, *16*, 3002-3024.
- (85) Arai, M. A.; Takeyama, K.; Ito, S.; Kato, S.; Chen, T. C.; Kittaka, A. "High-Throughput System for Analyzing Ligand-Induced Cofactor Recruitment by Vitamin D Receptor" *Bioconjugate Chemistry* **2007**, *18*, 614-620.
- (86) Kaniwa, K.; Arai, M. A.; Li, X.; Ishibashi, M. "Synthesis, determination of stereochemistry, and evaluation of new bisindole alkaloids from the myxomycete *Arcyria ferruginea*: An approach for Wnt signal inhibitor" *Bioorg. Med. Chem. Lett.* **2007**, *17*, 4254-4257.
- (87) Wakita, K.; Bajracharya, G. B.; Arai, M. A.; Takizawa, S.; Suzuki, T.; Sasai, H. "Enantioselective Glyoxylate-ene Reaction using a Novel Spiro Bis(isoxazoline) Ligand in Copper Catalysis" *Tetrahedron: Asymmetry* **2007**, *18*, 372-376.
- (88) Koranne, P. S.; Tsujihara, T.; Arai, M. A.; Bajracharya, G. B.; Suzuki, T.; Onitsuka, K.; Sasai, H. "Design and Synthesis of Chiral Hybrid Spiro(isoxazole-isoxazoline) Ligands" *Tetrahedron: Asymmetry* **2007**, *18*, 919-923.
- (89) Urushino, N.; Nakabayashi, S.; Arai, M. A.; Kittaka, A.; Chen, T. C.; Yamamoto, K.; Hayashi, K.; Kato, S.; Ohta, M.; Kamakura, M.; Ikushiro, S.; Sakaki, T. "Kinetic Studies of 25-Hydroxy-19-Nor-Vitamin D₃ and 1 α ,25-Dihydroxy-19-Nor-Vitamin D₃ Hydroxylation by CYP27B1 and CYP24A1" *Drug Metabolism and Disposition* **2007**, *35*, 1482-1488.
- (90) Arai, M. A.; Kittaka, A. "Novel 2-Alkyl-1 α ,25-dihydroxy-19-norvitamin D₃:

- Efficient Synthesis with Julia Olefination, Evaluation of Biological Activity, and Development of New Analyzing System on Coactivator Recruitment" *Anticancer Research* **2006**, *26*, 2621-2632.
- (91) Arai, M. A.; Tsutsumi, R.; Chen, T. C.; Sakaki, T.; Urushimo, N.; Inouye, K.; Kittaka, A. "Synthesis of 25-hydroxy-19-Norvitamin D₃ Analogs and their antiproliferative activities on prostate cells" *Heterocycles* **2005**, *66*, 469-479.
- (92) Arai, M. A.; Matsuo, I.; Hagihara, S.; Totani, K.; Maruyama, J.-I.; Kitamoto, K.; Ito, Y. "Design and Synthesis of Oligosaccharides that Interfere Glycoprotein Quality Control System" *ChemBioChem* **2005**, *6*, 2281-2289.
- (93) Kim, Y.-K.; Arai, M. A.; Arai, T.; Lamenzo, J. O.; Dean III, E. F.; Patterson, N.; Clemons, P. A.; Schreiber, S. L. "Relationship of Stereochemical and Skeletal Diversity of Small Molecules to Cellular Measurement Space" *J. Am Chem. Soc.* **2004**, *126*, 14740-14745.
- (94) Ito, Y.; Hagihara, S.; Arai, M. A.; Matsuo, I.; Takatani, M. "Synthesis of Fluorine Substituted Oligosaccharide Analogues of Monoglucosylated Glycan Chain, a proposed Ligand of Lectin-chaperone Calreticulin and Calnexin" *Glycoconjugate J.* **2004**, *21*, 257-266.
- (95) Totani, K.; Matsuo, I.; Takatani, M.; Arai, M. A.; Hagihara, S.; Ito, Y. "Synthesis of Glyco-protein Molecular Probes for the Analyses of Protein Quality Control System" *Glycoconjugate J.* **2004**, *21*, 69-74.
- (96) Takatani, M.; Nakano, J.; Arai, M. A.; Ishiwata, A.; Ohta, H.; Ito, Y. "Accelerated Glycosylation under Frozen Conditions" *Tetrahedron Lett.* **2004**, *45*, 3929-3932.
- (97) Arai, M. A.; Shinohara, T.; Arai, T.; Sasai, H. "Development of the First Spiro Bis(isoxazoline) Ligands (SPRIXs) and Their Applications to Catalytic Enantioselective Reactions" *J. Synth. Org. Chem., Jpn.* **2004**, *62*, 59-69.
- (98) Wakita, K.; Arai, M. A.; Kato, T.; Shinohara, T.; Sasai, H. "Spiro Bis(isoxazole) as a New Chiral Ligand" *Heterocycles* **2004**, *62*, 831-838.
- (99) Takizawa, S.; Honda, Y.; Arai, M. A.; Kato, T.; Sasai, H. "Synthesis of Novel Chiral Spiro Bis(pyrazole) Ligands" *Heterocycles* **2003**, *60*, 2551-2556.
- (100) Arai, M. A.; Kuraishi, M.; Arai, T.; Sasai, H. "Synthesis of New Chiral Bis(isoxazoline) Ligands Containing Spiro[5.5]undecane Skeleton" *Chirality* **2003**, *15*, 101-104.
- (101) Muthiah, C.; Arai, M. A.; Shinohara, T.; Arai, T.; Takizawa, S.; Sasai, H. "Enantioselective Synthesis of α -Methylene- γ -butyrolactones using Chiral Pd(II)-SPRIX Catalyst" *Tetrahedron Lett.* **2003**, *44*, 5201-5204.
- (102) Shinohara, T.; Arai, M. A.; Wakita, K.; Arai, T.; Sasai, H. "The First

- Enantioselective Intramolecular Amino-carbonylation of Alkenes Promoted by Pd(II)-Spiro Bis(isoxazoline) Catalyst" *Tetrahedron Lett.* **2003**, *44*, 711-714.
- (103) Shinohara, T.; Wakita, K.; Arai, M. A.; Arai, T.; Sasai, H. "Synthesis and Character of New Bis(isoxazoline) Ligands" *Heterocycles*, **2003**, *59*, 587-593.
- (104) Arai, M. A.; Kuraishi, M.; Arai, T.; Sasai, H. "A New Asymmetric Wacker-Type Cyclization and Tandem Cyclization Promoted by Pd(II)-Spiro Bis(isoxazoline) Catalyst" *J. Am. Chem. Soc.* **2001**, *123*, 2907-2908.
- (105) Arai, M. A.; Arai, T.; Sasai, H. "Design and Synthesis of the First Spiro Bis(isoxazoline) Derivatives as Asymmetric Ligands" *Org. Lett.* **1999**, *1*, 1795-1797.
- (106) Sodeoka, M.; Arai, M. A.; Adachi, K.; Uotsu, K.; Shibasaki M. "Rational Design, Synthesis, and Evaluation of a New Type of PKC Inhibitor" *J. Am. Chem. Soc.* **1998**, *120*, 457-458.
- (107) Ohshima, T.; Kagechika, K.; Adachi, M.; Sodeoka, M.; Shibasaki, M. "Asymmetric Heck Reaction-Carbanion Capture Process. Catalytic Asymmetric Total Synthesis of (-)- $\Delta^9(12)$ -Cannabinol" *J. Am. Chem. Soc.* **1996**, *118*, 7108-7116.