

Curriculum Vitae

Hayato Ishikawa, Professor, Ph. D. (石川 勇人)

Born: Kitamoto, Saitama, Japan in 1977

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Education

Bachelor of Pharmaceutical Science.

Faculty of Pharmaceutical Sciences, Tokyo University of Pharmacy and Life Science.

(April 1995 - March 1999)

Master of Pharmaceutical Sciences.

Graduate School of Pharmaceutical Science, Chiba University. (April 1999 - March 2001)

Supervised by Professor Norio Aimi and Professor Hiromitsu Takayama.

Doctor of Philosophy

Graduate School of Pharmaceutical Sciences, Chiba University. (April 2001 - March 2004)

Supervised by Professor Norio Aimi and Professor Hiromitsu Takayama.

Research Experience

Research Associate

Department of Chemistry, The Scripps Research Institute

(April 2004 – March 2006) Supervised by Professor Dale L. Boger

Assistant Professor

Department of Chemistry, The Scripps Research Institute

(April 2006 – March 2007) working with Professor Dale L. Boger

Assistant Professor

Department of Industrial Chemistry, Faculty of Engineering, Tokyo University of Science

(April 2007– March 2011) working with Professor Yujiro Hayashi

Associate Professor

Department of Chemistry, Graduate School of Science and Technology,

Kumamoto University (April 2011–2016) Principal Investigator

Associate Professor

Department of Chemistry, Faculty of Advanced Science and Technology,
Kumamoto University (April 2016–2018) Principal Investigator

Full Professor

Department of Chemistry, Faculty of Advanced Science and Technology,
Kumamoto University (October 2018–2021)

Full Professor

Graduate School of Pharmaceutical Sciences,
Chiba University (March 2021–present)

Award

1. 2024、Asian Core Program Lectureship Award (Korea)
2. 2024、日本薬学会学術振興賞：The PSJ Award for Divisional Scientific Promotion
3. 2021、長瀬研究振興賞：Nagase Science Foundation Award 2021
4. 2016、Chemist Award BCA (MSD Life Science Foundation, Japan)
5. 2015、研究活動表彰(熊本大学)：Research Achievement Award from Kumamoto University
6. 2014、研究活動表彰(熊本大学)：Research Achievement Award from Kumamoto University
7. 2013、有機合成化学奨励賞(有機合成化学協会)：Incentive Award in Synthetic Organic Chemistry, Japan
8. 2013、Thieme Chemistry Journal Award 2014
9. 2013、研究業績表彰(熊本大学)：Research Achievement Award from Kumamoto University
10. 2011、The 2nd International Symposium on Process Chemistry 2011 (ISPC 2011) Award.
11. 2011、24th. Eisai Award in Synthetic Organic Chemistry, Japan
(第24回 有機合成化学協会研究企画賞：エーザイ研究企画賞)
12. 2009、22nd. Astellas Award in Synthetic Organic Chemistry, Japan
(第22回 有機合成化学協会研究企画賞：アステラス研究企画賞)
13. 2009、51st. Young Scientist's Research Award in Symposium on the Chemistry of Natural Products (Oral Presentation)
(第51回 天然有機化合物討論会奨励賞(口頭発表))
14. 2009、第89回 日本化学会春季年会 若い世代の特別講演賞

15. 2008、第 94 回 有機合成シンポジウム 優秀ポスター賞
16. Research Fellow of the Japan Society for the Promotion of Science.
(April 2001 - March 2004)

Publication List

1. Modified Bohlmann-Raetz Pyridine Synthesis for Cyclic Ketones, K. Ikeno, H. Oku, K. Rakumitsu, M. Kitajima, H. Ishikawa*, *Chemistry A European Journal*, 31, e202500298 (2025). Selected “*Very Important Papers*” and “*Spotlight*”.
2. Bioinspired Total Synthesis and Structural Reidentification of Alstrofines, D. Hiruma, A. Yoshidome, K. Rakumitsu, M. Kitajima, Y. Hitora, S. Tsukamoto, J. Schinnerl, L. Brecker, H. Ishikawa*, *Chemistry A European Journal*, 31, e202500069 (2025).
3. New Entries in Organocatalysts from an Alkaloid library; Development of Amino Catalysis for a Michael Reaction Based on Calycanthine, K. Yamanishi, G. Ashihara, S. Shiomi, S. Harada*, M. Kitajima, H. Takayama, H. Ishikawa*, *Journal of the American Chemical Society*, 146, 27152–27160 (2024). DOI: 10.1021/jacs.4c10242
4. Indole C5-Selective Bromination of Indolo[2,3-*a*]quinolizidine Alkaloids via In Situ-Generated Indoline Intermediate, G. Yoshimura, J. Sakamoto, M. Kitajima, H. Ishikawa*, *Chemistry A European Journal*, 30, e202401153 (2024). Selected “*Hot Papers*” and “*Cover picture*”.
5. Bioinspired Total Synthesis of (+)-Kopsiyunnanine B, S. Imaoka, Y. Nakashima, M. Kitajima, H. Ishikawa*, *Chemical and Pharmaceutical Bulletin*, 72, 68–74 (2024).
6. Collective Total Syntheses of β -Carboline-type Monoterpenoid Indole Alkaloid Glycosides, J. Sakamoto, D. Hiruma, M. Kitajima, H. Ishikawa*, *Synlett*, 35, 576–581 (2024). Invited article as a special cluster “*biomimetic synthesis*”.
7. Constituents of *Uncaria lanosa f. philippinensis* and their anti-amyloidogenic activity, M. A. Tan*, H. Ishikawa, *Natural Product Research*, DOI: 10.1080/14786419.2023.2294481.
8. Sticklac-Derived Natural Compounds Inhibiting RNase H Activity of HIV-1 Reverse Transcriptase, Y. Ito, H. Lu, M. Kitajima, H. Ishikawa, Y. Nakata, Y. Iwatani, T Hoshino*, *Journal of Natural Products*, 86, 2487–2495 (2023).
9. Total Syntheses of (–)-Silicine and (–)-20-Episilicine, Y. Ataka, M. Kitajima, H. Ishikawa*, *Organic Letters*, 25, 7601–7605 (2023). Selected “*Front Cover Picture*”.
10. Asymmetric Total Synthesis of Senepodine F, Y. Nakashima, T. Inoshita, M. Kitajima, H. Ishikawa*, *Organic Letters*, 25, 1151–1155 (2023).
11. Total Syntheses of (+)-Villocarine A, (–)-Apogeissoschizine, and (+)-Geissoschizine, J. Sakamoto, M. Kitajima, H. Ishikawa*, *Chemistry A European Journal*, 29, e202300179 (2023). Selected “*Inside Cover Picture*”.
12. Divergent Total Syntheses of Hetero-Oligomeric Iridoid Glycosides, A. Yoshidome, J. Sakamoto, M. Kohara, S. Shiomi, M. Hokaguchi, Y. Hitora, M. Kitajima, S. Tsukamoto, H. Ishikawa*, *Organic Letters*, 25, 347–352 (2023). Highlighted by “*SYNFACTS DOI: 10.1055/s-0042-1751840*”.
13. Rhamnogalacturonan-I as a Nematode Chemoattractant from Lotus Corniculatus L. Supergrowing Root Culture, M. Oota, S. Toyoda, T. Kotake, N. Wada, M. Hashiguchi, R. Akashi, H. Ishikawa, B. Favery, A. Y.-L. Tsai*, S. Sawa*, *Frontiers in Plant Science*, 13:1008725 (2023).

14. *Pandanus amaryllifolius* Exhibits In Vitro Anti-Amyloidogenic Activity and Promotes Neuroprotective Effects in Amyloid- β -Induced SH-SY5Y Cells, M. A. Tan, H. Ishikawa, S. S. A. An, *Nutrients*, *14*, 3962 (2022).
15. Asymmetric Total Synthesis of Mitragynine, Speciogynine, and 7-Hydroxymitragynine, J. Sakamoto, M. Kitajima, H. Ishikawa*, *Chemical and Pharmaceutical Bulletin*, *70*, 662–668 (2022).
16. Borocyclic Radicals Prepared from Orthoquinone-Containing Polycyclic Aromatics by Photoirradiation, K. Urakawa, Y. Yatsuoka, Y. Kawabata, H. Masu, M. Matsuda*, H. Ishikawa*, *The Journal of Organic Chemistry*, *87*, 3747–3751 (2022).
17. Asymmetric Total Synthesis and Structure Elucidation of Huperzine H, S. Shiomi, K. Wilailak, W. Soutome, H. Takayama, M. Kitajima, H. Ishikawa*, *The Journal of Organic Chemistry*, *87*, 3730–3735 (2022). Selected “*Cover Picture*”.
18. Secorubenine, a Monoterpenoid Indole Alkaloid Glycoside from *Adina rubescens*: Isolation, Structure Elucidation, and Enantioselective Total Synthesis, N. Nakashima, J. Sakamoto, K. Rakumitsu, M. Kitajima, L. D. Juliawaty, H. Ishikawa*, *Chemical and Pharmaceutical Bulletin*, *70*, 187–191(2022).
19. Bioinspired Transformations Using Strictosidine Aglycones: Divergent Total Syntheses of Monoterpenoid Indole Alkaloids in the Early Stage of Biosynthesis, J. Sakamoto, H. Ishikawa*, *Chemistry A European Journal*, *28*, e202104052 (2022). Selected “*Inside Cover Picture*”.
20. Amakusamine from a *Psammocinia* sp. Sponge: Isolation, Synthesis, and SAR Study on the Inhibition of RANKL-Induced Formation of Multinuclear Osteoclasts, Y. Maeyama, Y. Nakashima, H. Kato, Y. Hitora, K. Maki, N. Inada, S. Murakami, T. Inazumi, Y. Ise, Y. Sugimoto, H. Ishikawa, S. Tsukamoto*, *Journal of Natural Products*, *84*, 2738–2743 (2021).
21. Root-Knot Nematode Chemotaxis is Positively Regulated by L-Galactose Sidechains of Mucilage Carbohydrate Rhamnogalacturonan-I, A. Y.-L. Tsai, Y. Iwamoto, Y. Tsumuraya, M. Oota, T. Konishi, S. Ito, T. Kotake, H. Ishikawa, S. Sawa*, *Science Advances*, *7*, eabh4182, (2021).
22. Calcium Sulfate and Calcium Carbonate as Root-Knot-Nematode Attractants and Possible Trap Materials to Protect Crop Plants, S. Toyoda, M. Oota, H. Ishikawa, S. Sawa*, *Plant Biotechnology*, *38*, 157–159 (2021).
23. Discovery, Characterization and Functional Improvement of Kumamonamide as Novel Plant Growth Inhibitor that Disturb Plant Microtubules, T. Ishida*, H. Yoshimura, M. Takekawa, T. Higaki, T. Ideue, M. Hatano, M. Igarashi, T. Tani, S. Sawa, H. Ishikawa*, *Scientific Reports*, *11*, 6077 (2021).
24. Epoxyquinophomopsins A and B from Endophytic Fungus Phomopsis sp. and Their Activity against Tyrosine Kinase, E. Hermawati*, S. D. Ellita, L. D. Juliawaty, E. H. Hakim, Y. M. Syah, H. Ishikawa, *Journal of Natural Medicine*, *75*, 217–222 (2021).
25. Total Syntheses of (–)-Strictosidine and Related Indole Alkaloid Glycosides, J. Sakamoto, Y. Umeda, K. Rakumitsu, M. Sumimoto, H. Ishikawa*, *Angewandte Chemie, International Edition*, *59*, 13414–13422 (2020).
26. 5,6-Dihydro- α -pyrones from the Leaves of *Cryptocarya pulchineria* (Lauraceae), L. D. Juliawaty*, P. N. Ra'idash, S. Abdurrahman, E. Hermawati, A. Alni, M. I. Tan, H. Ishikawa, Y. M. Syah, *Journal of Natural Medicine*, *74*, 584–590 (2020).
27. Identification of Naturally-Occurring Polyamines as Nematode *Meloidogyne incognita* Attractants, M. Oota, A. Y.-L. Tsai, D. Aoki, Y. Matsushita, S. Toyoda, K. Fukushima, K. Saeki, K. Toda, L. Perfus-Barbeoch, B. Favery, H. Ishikawa*, S. Sawa*, *Molecular Plants*, *13*, 658–665 (2020) Highlighted in “*Molecular Plant*” DOI: 10.1016/j.molp.2020.03.005.

28. Diaryliodonium Salt-Mediated Intramolecular C–N Bond Formation Using Boron-Masking *N*-Hydroxyamides, M. Matsumoto, K. Wada, K. Urakawa, H. Ishikawa*, *Organic Letters*, 22, 781–785 (2020). Selected “Cover Picture”.
29. Enantioselective Total Synthesis of the Unnatural Enantiomer of Quinine, S. Shiomi, R. Misaka, M. Kaneko, H. Ishikawa*, *Chemical Science*, 10, 9433–9437 (2019). Selected “2019 Chemical Science HOT Article Collection” and “Inside Front Cover”. Highlighted in “RSC Chemistry World” and “Wiley ChemistryViews”
<https://www.chemistryworld.com/news/total-synthesis-of-unnatural-enantiomer-renews-interest-in-quinine/4010611.article>
https://www.chemistryviews.org/details/news/11101994/Total_Synthesis_of_-Quinine.html
30. Total Syntheses of (–)-Secologanin, (–)-5-Carboxystrictosidine, and (–)-Rubenine, K. Rakumitsu, J. Sakamoto, H. Ishikawa*, *Chemistry – A European Journal*, 25, 8996–9000 (2019).
31. Enantioselective Construction of Octahydroquinolines via Trienamine-Mediated Diels-Alder Reactions, T. Inoshita, K. Goshi, Y. Morinaga, Y. Umeda, H. Ishikawa*, *Organic Letters*, 21, 2903–2907 (2019).
32. Visualization of Plastid Peptidoglycan in the Charophyte Alga *Klebsormidium nitens* Using a Metabolic Labeling Method, H. Takano*, T. Tsunefuka, S. Takio, H. Ishikawa, K. Takechi, *Cytologia*, 83, 375–380 (2018).
33. Two New Indolic and Quinolic Alkaloids and Other Secondary Metabolites from *Mostuea thomsonii* (Loganiaceae), E. G. B. Gompe, B. M. W. Ouahouo, V. T. Sielinou, M. Tsaffack, J. Fotie, J. C. N. Assob, H. Ishikawa, P. Mkounga*, A. E. Nkengfack, *Phytochemistry Letters*, 26, 154–158 (2018).
34. α -Ketocarbenium Ion Derived from Orthoquinone-Containing Polycyclic Aromatic Compounds, K. Urakawa, Y. Kawabata, M. Mastuda, M. Sumimoto*, H. Ishikawa*, *Organic Letters*, 20, 2534–2537 (2018).
35. Total Syntheses and Stereochemical Reassignments of Mollenines A and B, S. Shiomi, K. Wada, Y. Umeda, H. Kato, S. Tsukamoto, H. Ishikawa*, *Bioorganic & Medicinal Chemistry Letters*, 28, 2766–2769 (2018). Special issue “Dale Boger: A Celebration of 65 years of Excellence”.
36. Bioinspired Indole Prenylation Reaction in Water, S. Tanaka, S. Shiomi, H. Ishikawa*, *Journal of Natural Products*, 80, 2371–2378 (2017). Selected ACS Editor’s choice and most read article 6th in 2017.
37. Triterpenes and Coumaroyltyramide from *Ochthocosmus africanus*, R. V. T. Sipowo, B. Marlyse, W. Ouahouo, H. L. D. Maza, H. Ishikawa, H. Nishino, P. Mkounga*, A. E. Nkengfack, *Journal of Diseases and Medicinal Plants*, 3, 12–16 (2017).
38. Triterpenoids from Seeds of *Tapinanthus bangwensis*, H. Maza, P. Mkounga*, S. L. Fenkam, S. K. Sado, H. Isikawa, H. Nishino, E. A. Nkengfack, *Phytochemistry Letters*, 19, 23–29 (2017).
39. Acid-Mediated Aryl Migration Reaction of C–3 Aryl Substituted Pyrrolidinoindolines, S. Tadano, H. Ishikawa*, *Tetrahedron Letters*, 58, 5–8 (2017).
40. New Lupan-type Triterpenoids, P. Mkounga*, H. L. D. Maza, B. M. W. Ouahouo, L. N. Tyon, H. Ishikawa, H. Nishino, A. E. Nkengfack, *Zeitschrift für Naturforschung*, 71, 381–386 (2016).
41. Moss Chloroplasts are Surrounded by a Peptidoglycan Wall Containing D-Amino Acids, T. Hirano, K. Tanidokoro, Y. Shimizu, Y. Kawarabayashi, T. Ohshima, M. Sato, S. Tadano, H.

- Ishikawa, S. Takio, K. Takechi, H. Takano*, *The Plant Cell*, 28,1521–1532 (2016). Selected “Breakthrough report and Cover Picture”.
42. Redox Switching of Orthoquinone-containing Aromatic Compounds using Hydrogen and Oxygen Gas, K. Urakawa, M. Sumimoto, M. Arisawa, M. Matsuda*, H. Ishikawa*, *Angewandte Chemie, International Edition*, 55, 7432–7436 (2016).
 43. Collective Synthesis and Biological Evaluation of Tryptophan-based Dimeric Diketopiperazine Alkaloids, S. Tadano, Y. Sugimachi, M. Sumimoto, S. Tsukamoto, H. Ishikawa*, *Chemistry – A European Journal*, 22, 1277–1291 (2016).
Selected “Hot paper” and “Inside cover picture”
 44. Efficient Organocatalytic Construction of C4-Alkyl Substituted Piperidines and Their Application to the Synthesis of (+)- α -Skytanthine, S. Shiomi, E. Sugahara, H. Ishikawa*, *Chemistry – A European Journal*, 21, 14758–14763 (2015).
 45. pH-Driven, Reversible Epoxy Ring Opening/Closing in Graphene Oxide, T. Taniguchi*, S. Kurihara, H. Tateishi, K. Hatakeyama, M. Konimura, H. Yokoi, M. Hara, H. Ishikawa, Y. Matsumoto*, *Carbon*, 85, 560–566 (2015).
 46. Synthesis of Tryptophan-based Dimeric Diketopiperazine Alkaloids using Bio-inspired Reactions, S. Tadano, H. Ishikawa*, *Synlett*, 25, 157–162 (2014).
 47. Organocatalyst-mediated Dehydrogenation of Aldehydes to α , β -Unsaturated Aldehydes, and Oxidative and Enantioselective Reaction of Aldehydes and Nitromethane Catalyzed by Diphenylprolinol Silyl Ether, Y. Hayashi*, T. Itoh, H. Ishikawa, *Advanced Synthesis & Catalysis*, 355, 3661–3669 (2013).
 48. One-Pot Synthesis of (–)-Oseltamivir and Mechanistic Insights into the Organocatalyzed Michael Reaction, T. Mukaiyama, H. Ishikawa, H. Koshino, Y. Hayashi*, *Chemistry – A European Journal*, 19, 17789–17800 (2013).
 49. Bio-inspired Dimerization Reaction of Tryptophan Derivatives in Aqueous Acidic Media: Three-step Synthesis of (+)-WIN 64821, (–)-Ditryptophenaline and (+)-Nasesezine B, S. Tadano, Y. Mukaeda, H. Ishikawa*, *Angewandte Chemie, International Edition*, 52, 7990–7994 (2013).
 50. Diarylprolinol in an Asymmetric Aldol Reaction of α -Alkyl- α -oxo Aldehydes as an Electrophile, Y. Hayashi*, Y. Yasui, M. Kojima, T. Kawamura, H. Ishikawa, *Chemical Communications*, 48, 4570–4572 (2012).
 51. Organocatalytic, Enantioselective Intramolecular [6+2] Cycloaddition Reaction for the Formation of Tricyclopentanoids and Insight on Its Mechanism from a Computational Study, Y. Hayashi*, H. Gotoh, M. Honma, K. Sankar, I. Kumar, H. Ishikawa, K. Konno, H. Yui, S. Tsuzuki, T. Uchimaru, *Journal of the American Chemical Society*, 113, 20175–20185 (2011).
 52. Spontaneous Conversion of 3-Alkyl-substituted 3-Hydroxyperoxyproline-2, 4-diones into 5-Alkyl-5-hydroxyoxazolidin-4-ones, M. A. Haque, H. Ishikawa, H. Nishino*, *Chemistry Letters*, 40, 1349–1351 (2011).
 53. Synthesis of (–)-Oseltamivir by Using a Microreactor in the Curtius Rearrangement, H. Ishikawa, B. P. Bondzic, Y. Hayashi*, *European Journal of Organic Chemistry*, 6020–6031 (2011).
 54. One-pot Synthesis of Chiral Aziridines by a Domino Reaction using Desulfonylative Formation on the *N*-Tosyl Imine of Chloroacetaldehyde with an Asymmetric Mannich Reaction as a Key Step, Y. Hayashi*, T. Urushima, D. Sakamoto, K. Torii, H. Ishikawa, *Chemistry – A European Journal*, 17, 11715–11718 (2011).

55. Asymmetric Mannich Reaction of Imines Derived from Aliphatic and Aromatic Aldehydes Catalyzed by Diarylprolinol Silyl Ether, T. Urushima, [H. Ishikawa](#), Y. Hayashi*, *Chemistry – A European Journal*, *17*, 8273–8276 (2011).
56. Organocatalyzed Michael Addition of Aldehyde to Nitro alkenes – Generally Accepted Mechanism Revisited and Revised, K. Patora-Komisarska, M. Benohoud, [H. Ishikawa](#), D. Seebach*, Y. Hayashi*, *Helvetica Chimica Acta*, *94*, 719–745 (2011).
57. Oxidative and Enantioselective Cross-Coupling of Aldehydes and Nitromethane Catalyzed by Diphenylprolinol Silyl Ether, Y. Hayashi*, T. Itoh, [H. Ishikawa](#), *Angewandte Chemie, International Edition*, *50*, 3920–3924 (2011).
58. Diarylprolinol in the Direct Asymmetric Aldol Reaction of Trifluoromethylacetaldehyde Ethyl Hemiacetal with Aldehyde, Y. Hayashi*, Y. Yasui, T. Kawamura, M. Kojima, [H. Ishikawa](#), *Synlett*, 485–488 (2011).
59. Asymmetric, One-Pot, Four-Component Coupling Reaction for the Synthesis of Substituted Tetrahydropyran Catalyzed by Diphenylprolinol Silyl Ether, [H. Ishikawa](#), S. Sawano, Y. Yasui, Y. Shibata, Y. Hayashi*, *Angewandte Chemie, International Edition*, *50*, 3774–3779 (2011).
60. “One-Pot” High-Yielding Synthesis of a DPP4 selective inhibitor ABT-341 via a Four Component Coupling Reaction Using Diphenylprolinol Silyl Ether as Key Reaction Mediator, [H. Ishikawa](#), M. Honma, Y. Hayashi*, *Angewandte Chemie, International Edition*, *50*, 2824–2827 (2011). *Selected “Very Important paper” and “inside cover picture”*. Highlighted by *Angew. Chem. Int. Ed.* **50**, 3605 (2011) and *Nature Chemical Biology* **7**, 190 (2011).
61. One-Pot Synthesis of Chiral α -Substituted- β , γ -Epoxy Aldehyde Dimethylacetal via a Diphenylprolinol-Catalyzed Asymmetric Aldol Reaction of Chloroacetaldehyde as Key Reaction, Y. Hayashi*, Y. Yasui, T. Kawamura, M. Kojima, [H. Ishikawa](#), *Angewandte Chemie, International Edition*, *50*, 2804–2807 (2011).
62. High-Yielding Synthesis of the Anti-influenza Neuraminidase Inhibitor (—)-Oseltamivir by Two “One-Pot” Sequences, [H. Ishikawa](#), T. Suzuki, H. Orita, T. Uchimaru, Y. Hayashi*, *Chemistry – A European Journal*, *16*, 12616–12626 (2010).
63. Polymeric Ethyl Glyoxylate in an Asymmetric Aldol Reaction Catalyzed by Diarylprolinol, T. Urushima, Y. Yasui, [H. Ishikawa](#), Y. Hayashi*, *Organic Letters*, *12*, 2966–2969 (2010).
64. Asymmetric Epoxidation of α -Substituted Acroleins Catalyzed by Diphenylprolinol Silyl Ether, B. P. Bondzic, T. Urushima, [H. Ishikawa](#), Y. Hayashi*, *Organic Letters*, *12*, 5434–5437 (2010).
65. One-Pot Synthesis of Chiral Bicyclo[3.3.0]octatrienes Using Diphenylprolinol Silyl Ether-Mediated Ene-Type Reaction, H. Gotoh, H. Ogino, [H. Ishikawa](#), Y. Hayashi*, *Tetrahedron*, *66*, 4894–4899 (2010).
66. Enantio- and Diastereo-Selective Synthesis of Piperidines by Coupling of Four Components in a “One-Pot” Sequence Involving Diphenylprolinol Silyl Ether-Mediated Michael Reaction, T. Urushima, D. Sakamoto, [H. Ishikawa](#), Y. Hayashi*, *Organic Letters*, *12*, 4588–4591 (2010).
67. Total Synthesis of Vinblastine, Vincristine, Related Natural Products, and Key Structural Analogues, [H. Ishikawa](#), D. A. Colby, S. Seto, P. Va, A. Tam, H. Kakei, T. J. Rayl, I. Hwang, D. L. Boger*, *Journal of the American Chemical Society*, *131*, 4904–4916 (2009).
68. Diphenylprolinol Silyl Ether as a Catalyst in an Asymmetric, Catalytic, and Direct Michael Reaction of Nitroethanol with α , β - Unsaturated Aldehydes, H. Gotoh, D. Okamura, [H. Ishikawa](#), Y. Hayashi*, *Organic Letters*, *11*, 4056–4059 (2009).

69. Asymmetric Aldol Reaction of Acetaldehyde and Isatin Derivatives for the Total Syntheses of *ent*-Convolutamydine E and CPC-1 and a Half Fragment of Madindoline A and B, T. Itoh, H. Ishikawa, Y. Hayashi*, *Organic Letters*, **11**, 3854–3857 (2009).
70. Total Synthesis and Determination of the Absolute Configuration of FD-838, a Naturally Occurring Azaspirobicyclic Product, Y. Hayashi*, K. Sankar, H. Ishikawa, Y. Nozawa, K. Mizoue, H. Kakeya, *Bioorganic & Medicinal Chemistry Letters*, **19**, 3863–3865 (2009). Special issue “*Tetrahedron Young Investigator Award 2009: C. F. Barbas, III*”.
71. Diphenylprolinol Silyl Ether as a Catalyst in an Enantioselective, Catalytic Michael Reaction for the Formation of α , α -Disubstituted α -Amino Acid Derivatives, Y. Hayashi*, K. Obi, Y. Ohta, D. Okamura, H. Ishikawa, *Chemistry – An Asian Journal*, **4**, 246–249 (2009).
72. High-Yielding Synthesis of the Anti-Influenza Neuramidase Inhibitor (–)-Oseltamivir by Three “One-Pot” Operations, H. Ishikawa, T. Suzuki, Y. Hayashi*, *Angewandte Chemie, International Edition*, **48**, 1304–1307 (2009). Highlighted in *Nature* **457**, 239 (2009).
73. Diphenylprolinol Silyl Ether Catalysis in an Asymmetric Formal Carbo [3 + 3] Cycloaddition Reaction via a Domino Michael/Knoevenagel Condensation, Y. Hayashi*, M. Toyoshima, H. Gotoh, H. Ishikawa, *Organic Letters*, **11**, 45–48 (2009).
74. Asymmetric, Catalytic, and Direct Self-Aldol Reaction of Acetaldehyde Catalyzed by Diarylprolinol, Y. Hayashi*, S. Samanta, T. Itoh, H. Ishikawa, *Organic Letters*, **10**, 5581–5583, (2008).
75. Direct Organocatalytic Mannich Reaction of Acetaldehyde: An Improved Catalyst and Mechanistic Insight from a Computational Study, Y. Hayashi*, T. Okano, T. Itoh, T. Urushima, H. Ishikawa, T. Uchamaru, *Angewandte Chemie, International Edition*, **47**, 9053–9058 (2008).
76. The Asymmetric Total Synthesis of (+)-Cytotrienin A, an Ansamycin-Type Anticancer Drug, Y. Hayashi*, M. Shoji, H. Ishikawa, J. Yamaguchi, T. Tamura, H. Imai, Y. Nishigaya, K. Takabe, H. Kakeya, H. Osada, *Angewandte Chemie, International Edition*, **47**, 6657–6660 (2008).
77. Asymmetric Diels-Alder Reactions of α,β -Unsaturated Aldehydes Catalyzed by a Diarylprolinol Silyl Ether Salt in the Presence of Water, Y. Hayashi*, S. Samanta, H. Gotoh, H. Ishikawa, *Angewandte Chemie, International Edition*, **47**, 6634–6637 (2008).
78. The Effectiveness of Proteinogenic Amino Acids in the Asymmetric Aldol Reaction in DMSO and Aqueous DMSO, Y. Hayashi*, T. Itoh, N. Nagae, M. Ohkubo, H. Ishikawa, *Synlett*, 1565–1570 (2008).
79. Diphenylprolinol Silyl Ether as a Catalyst in an Enantioselective, Catalytic, Formal Aza [3+3] Cycloaddition Reaction for the Formation of Enantioenriched Piperidines, Y. Hayashi*, H. Gotoh, R. Masui, H. Ishikawa, *Angewandte Chemie, International Edition*, **47**, 4012–4015 (2008).
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