

Eisuke Ota, Ph.D.

Assistant Professor (The Yamaguchi Group)

Department of Applied Chemistry, Waseda University

Room 321, Building 121, 513 Wasedaturumakicho, Shinjuku-ku, Tokyo 162-0041, Japan

E-mail: eota@aoni.waseda.jp

Website: <http://www.jyamaguchi-lab.com>

ACADEMIC CAREER

- 2020- Assistant Professor, Department of Applied Chemistry,
Waseda University (with Professor Junichiro Yamaguchi)
- 2018- Assistant Professor, Waseda Research Institute for Science and Engineering,
Waseda University (with Professor Junichiro Yamaguchi)

EDUCATION

- 2017-2018 Postdoctoral Researcher, Princeton University, U.S.A.
(with Professor Robert R. Knowles)
- 2016-2017 Postdoctoral Researcher, RIKEN, Japan
(with Chief Scientist Mikiko Sodeoka)
- 2012-2016 Ph.D. in Science, RIKEN and Keio University, Japan
“Studies on Development of Alkyne-tagged Sialidase-resistant GM3 Analogues
and Photoaffinity Groups”
(with Chief Scientist Mikiko Sodeoka and Professor Kazunobu Toshima)
- 2010-2012 M.Sc. in Science and Technology, Keio University, Japan
“Synthesis of 9-Methylstreptimidone Derivatives and Evaluation of Their
Biological Properties”
(with Professor Shigeru Nishiyama)
- 2006-2010 B.Sc. in Science and Technology, Keio University, Japan
(with Professor Shigeru Nishiyama)

AWARDS AND FELLOWSHIPS

- 2021 Konica Minolta Award in Synthetic Organic Chemistry, Japan
(コニカミノルタ研究企画賞)
- 2021 Satomi Award
- 2020 Satomi Award
- 2017-2018 JSPS Postdoctoral Fellowship for Research Abroad
- 2014-2016 JSPS Research Fellowship for Young Scientists (DC2)
- 2012-2014 RIKEN Junior Research Associate
- 2013 Glyco Tokyo 2013 Poster Award

PUBLICATIONS

- 1) Uehara, T. N.; Takao, S.; Matsuo, H.; Saito, A. N.; **Ota, E.**; Ono, A.; Itami, K.; Kinoshita, T.; Yamaguchi, J.; Nakamichi, N. “A unique small molecule pair controls the plant circadian clock” *BioRxiv* **2020**, preprint. DOI: 10.1101/2020.05.25.113746.
- 2) Okita, T.; Aida, K.; Tanaka, K.; **Ota, E.***; Yamaguchi, J.* “Activation of Alkyl Chlorides Enabled by Zirconocene and Photoredox Catalysis” *ChemRxiv*. **2022**, preprint DOI: 10.26434/chemrxiv-2022-5n811
- 3) Saito, A. N.; Maeda, A. E.; Takahara, T. T.; Matsuo, H.; Nishina, M.; Ono, A.; Shiratake, K.; Notaguchi, M.; Yanai, T.; Kinoshita, T.; **Ota, E.**; Fujimoto, K. J.; Yamaguchi, J.; Nakamichi, N. “Structure–Function Study of a Novel Inhibitor of Cyclin-Dependent Kinase C in Arabidopsis” *Plant Cell Physiol* **2022**. accepted.
- 4) Kubo, M.; Inayama, N.; **Ota, E.**; Yamaguchi, J. “Palladium-Catalyzed Tandem Ester Dance/Decarbonylative Coupling Reactions” *Org. Lett.* **2022**, *24*, 3855–3860.
Most Read Articles (1 Month), accessed on 06/06/2022
- 5) Nakamichi, N.; Yamaguchi, J.; Sato, A.; Fujimoto, K. J.; **Ota, E.** “Chemical biology to dissect molecular mechanisms underlying plant circadian clocks” *New Phytologist*, **2022**, *235*, 1336.
- 6) Aida, K.; Hirao, M.; Funabashi, A.; Sugimura, N.; **Ota, E.***; Yamaguchi, J.* “Catalytic Reductive Ring Opening of Epoxides Enabled by Zirconocene and Photoredox Catalysis” *Chem* **2022**. *8*, 1762–1774.
Most Read (1 Month), accessed on 06/27/2022
Highlighted in Synform (in press)
Highlighted in Synfacts (DOI: 10.1055/s-0041-1738248)
Chem-station Spotlight Research
日刊工業新聞、早稲田大学プレスリリース
- 7) Hirai, G.; Kato, M.; Koshino, H.; Nishizawa, E.; Oonuma, K.; **Ota, E.**; Watanabe, T.; Hashizume, D.; Tamura, Y.; Okada, M.; Miyagi, T.; Sodeoka, M. “Ganglioside GM3 Analogues Containing Monofluoromethylene-Linked Sialoside: Synthesis, Stereochemical Effects, Conformational Behavior, and Biological Activities” *JACS Au* **2021**, *1*, 137–146.
Most Read Articles (1 Month), accessed on 01/02/2021
Selected as a Front Cover
理化学研究所プレスリリース、九州大学プレスリリース
- 8) S. Asako, T. Suzuki, S. Tanaka, S. **Ota, E.**; Yamaguchi, J. “Synthesis of Decaarylthracene with Nine Different Substituents” *J. Org. Chem.*, **85**, 15437–15448. (2020)
Most Read Articles (1 Month), accessed on 12/04/2020

- 9) Shuhei Tanaka, Takashi Asako, **Eisuke Ota**, Junichiro Yamaguchi, "Synthesis of A Pentaarylcarbazole: Installation of Different Aryl Groups on Benzenoid Moiety" *Chemistry Letters*, **49**, 918–920. (2020)
- 10) Takayuki Hoshi, **Eisuke Ota**, Yasuhide Inokuma, Junichiro Yamaguchi, "Asymmetric Synthesis of a 5,7-Fused Ring System Enabled by an Intramolecular Buchner Reaction with Chiral Rhodium Catalyst," *Organic Letters*, **21**, 10081-10084. (2019)
Highlighted in Org. Chem. Highlights 2020, August 10.
(<https://www.organic-chemistry.org/Highlights/2020/10August.shtm>)
- 11) **Eisuke Ota**, Huaiju Wang, Nils Lennart Frye, Robert R. Knowles, "A Redox Strategy for Light-Driven, Out-of-Equilibrium Isomerizations and Application to Catalytic C-C Bond Cleavage Reactions," *The Journal of American Chemical Society*, **141**, 1457-1462 (2019)
Most Read Articles (1 Month), accessed on 2/14/2019
- 12) **Eisuke Ota**, Kazuteru Usui, Kana Oonuma, Hiroyuki Koshino, Shigeru Nishiyama, Go Hirai, Mikiko Sodeoka, "Thienyl-Substituted α -Ketoamide: A Less Hydrophobic Reactive Group for Photo-Affinity Labeling," *ACS Chemical Biology*, **13**, 876-880 (2018)
Most Read Articles (12 Months), accessed on 2/14/2019
[Chem-Station Spotlight Research](#)、[理化学研究所プレスリリース](#)、[九州大学プレスリリース](#)、[日経新聞掲載](#)
- 13) Qianqian Wang, Yuta Kuramoto, Yozo Okazaki, **Eisuke Ota**, Masaki Morita, Go Hirai, Kazuki Saito, Mikiko Sodeoka, "Synthesis of Polyunsaturated Fatty acid-containing glucuronosyl-diacylglycerol through Direct Glycosylation," *Tetrahedron Letters*, **58**, 2915-2918 (2017).
- 14) **Eisuke Ota**, Yu Mikame, Go Hirai, Shigeru Nishiyama, and Mikiko Sodeoka, "Photochemical and Additive-free Coupling Reaction of α -Cumyl α -Ketoesters via Intermolecular C-H Bond Activation," *Synlett*, **27**, 1128-1132 (2016)
- 15) **Eisuke Ota**, Yu Mikame, Go Hirai, Hiroyuki Koshino, Shigeru Nishiyama, and Mikiko Sodeoka, "Photo-induced Formation of Cyclopropanols from α -Ketoamides via γ -C-H bond activation," *Tetrahedron Letters*, **56**, 5991-5994 (2015).
- 16) Go Hirai, **Eisuke Ota**, Motonari Sakai, Shigeru Nishiyama, and Mikiko Sodeoka, "C-Sialosides: Synthesis and Biological Activities," *Trends in Glycoscience and Glycotechnology*, **27**, 47-60 (2015).

- 17) **Eisuke Ota**, Masatoshi Takeiri, Miyuki Tachibana, Yuichi Ishikawa, Kazuo Umezawa, and Shigeru Nishiyama, "Synthesis and biological evaluation of molecular probes based on the 9-methylstreptimidone derivative DTCM-glutarimide," *Bioorganic & Medicinal Chemistry Letters*, **22**, 164-167 (2012).
- 18) Masatoshi Takeiri, **Eisuke Ota**, Shigeru Nishiyama, Hiromasa Kiyota, and Kazuo Umezawa, "Structure-activity relationship of 9-methylstreptimidone, a compound that induces apoptosis selectively in adult T-cell leukemia cells," *Oncology research*, **20**, 15-24 (2012).

PRESENTATIONS (International)

- 1) "Development of Molecular Probes Based on a Sialidase-resistant Ganglioside GM3 Analogue," The First Asian Conference for "MONODUKURI" Strategy by Synthetic Organic Chemistry, July 18, 2013, **Eisuke Ota**, Marie Kato, Kana Oonuma, Go Hirai, Shigeru Nishiyama, and Mikiko Sodeoka.
- 2) "Synthesis of 9-Methylstreptimidone Derivatives and the Mechanistic Study of Anti-inflammatory Activity," The 8th AFMC International Medicinal Chemistry Symposium, December 1, 2011, **Eisuke Ota**, Yuichi Ishikawa, Kazuo Umezawa, and Shigeru Nishiyama.
- 3) "Synthesis of 9-Methylstreptimidone Derivatives and Evaluation of their Biological Properties," 10th International Symposium on Organic Reactions, November 23, 2011, **Eisuke Ota**, Yuichi Ishikawa, Masatoshi Takeiri, Tsuyoshi Saitoh, Kazuo Umezawa, and Shigeru Nishiyama.
- 4) "Synthesis and biological activities of 9-methylstreptimidone derivatives," The 2010 International Chemical Congress of Pacific Basin Societies, December 19, 2010, **Eisuke Ota**, Yuichi Ishikawa, Miyuki Tachibana, Ayumi Kaneda, Kazuo Umezawa, and Shigeru Nishiyama.

PRESENTATIONS (Domestic)

- 1) 「ジルコノセン/可視光レドックス触媒を用いた σ 結合開裂反応の開発」
第62回天然有機化合物討論会、2022年9月
- 2) 「 α -ケト酸誘導体の有機光化学：低疎水性光反応性基の開発と新規反応形式の発見」
第60回天然有機化合物討論会、2018年9月
- 3) 「Norrish-type II 反応を起こさない α -ケトアミドおよび α -ケトエステルの光反応」第
109 回有機合成シンポジウム、2016年6月
- 4) 「分子間水素移動を経る α -ケトエステルの光誘起カップリング反応」日本化学会第96
春季年会、2016年3月

- 5) 「アルキンタグを有する代謝安定型ガングリオシドGM3 アナログの創製」日本化学会第94春季年会、2014年3月
- 6) 「代謝安定型ガングリオシドGM3を基盤とした新規機能性プローブの開発」GlycoTokyo 2013 シンポジウム、2013年10月
- 7) 「代謝安定型ガングリオシドGM3を基盤とした新規機能性プローブの開発」第32回日本糖質学会年会、2013年8月
- 8) 「代謝安定型ガングリオシドGM3を基盤とする機能性プローブ創製」日本化学会第93春季年会、2013年3月
- 9) 「9-Methylstreptimidone の合成および構造活性相関研究」日本ケミカルバイオロジー学会第7回年会、2012年6月
- 10) 「NF- κ B阻害剤9-Methylstreptimidoneの合成と評価」新規素材探索研究会第10回セミナー、2011年6月
- 11) 「活性発現機構解明を指向した9-Methylstreptimidone誘導体の合成と評価」日本化学会第91春季年会、2011年3月
- 12) 「新規転写因子AP-1阻害剤DTCM-glutarimideアナログの合成」新規素材探索研究会第9回セミナー、2010年6月
- 13) 「新規転写因子AP-1 阻害剤DTCM-glutarimideの作用機構解明を指向した分子プローブの合成」日本ケミカルバイオロジー学会第5回年会、2010年5月