

## Eisuke Ota, Ph.D.

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### ACADEMIC CAREER

- 2024- Associate Professor, Waseda Institute for Advanced Study (WIAS),  
Waseda University (with Professor Junichiro Yamaguchi)
- 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

- 2024 Special Lecture for Young Scientist, Chemical Society Japan
- 2023 Oral Speaker Award, IUPAC The 23rd International Conference on Organic  
Synthesis (23-ICOS)
- 2023 Satomi Award
- 2023 WASEDA e-Teaching Award (Good Practice Award)
- 2022 Satomi Award
- 2021 Konica Minolta Award, 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) Aida, K.; **Ota, E.\***; Yamaguchi, J. “Regioselective Ring Opening of Oxetanes Enabled by Zirconocene and Photoredox Catalysis”, *Synlett* **2024**, *35*, 451–454. (Invited contribution).
- 2) Uehara, T. N.; Takao, S.; Matsuo, H.; Saito, A. N.; **Ota, E.**; Ono, A.; Itami, K.; Kinoshita, T.; Yamaguchi, J.; Nakamichi, N. “A Small-Molecule Modulator Affecting the Clock-Associated PSEUDO-RESPONSE REGULATOR 7 Amount”, *Plant Cell Physiol* **2023**, *64*, 1397–1406.
- 3) Saito, A. N.; **Ota, E.**; Nakamichi, N.; Yamaguchi, J. “Development of Plant Circadian Clock Modulators”, *J. Synth. Org. Chem. Jpn.* **2023**, *81*, 718–730.
- 4) **Ota, E.**; Takeda, D.; Oonuma, K.; Kato, M.; Matoba, H.; Yoritake, M.; Sodeoka, M.; Hirai, G. “Synthesis and Biological Activity of Ganglioside GM3 Analogues with a (*S*)-CHF-Sialoside Linkage and an Alkyne Tag” *Glycoconj. J.* **2023**, *40*, 333–341.
- 5) Okita, T.; Aida, K.; Tanaka, K.; **Ota, E.\***; Yamaguchi, J.\* “Chlorine Atom Transfer of Unactivated Alkyl Chlorides Enabled by Zirconocene and Photoredox Catalysis” *Precis. Chem.* **2023**, *1*, 112–118.  
*ACS Editor’s Choice (February 10, 2023)*  
*Most Read Articles (1 Month) accessed on 03/31/2023*
- 6) 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**, *63*, 1720–1728.
- 7) 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*
- 8) 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*, 1336–1343.

- 9) 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* (DOI: 10.1055/s-0040-1720576)  
*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
- 10) Moriyama, T.; Mizukami, D.; Yoritake, M.; Usui, K.; Takahashi, D.; **Ota, E.**; Sodeoka, M.; Ueda, T.; Karasawa, S.; Hirai, G. “Effect of Alkynyl Group on Reactivity in Photoaffinity Labeling with 2-Thienyl-Substituted  $\alpha$ -Ketoamide” *Chem. Eur. J.* **2022**, *28*. e202103925.
- 11) 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
- 12) Asako, T.; Suzuki, S.; Tanaka, S.; **Ota, E.**; Yamaguchi, J. “Synthesis of Decaaryl anthracene with Nine Different Substituents” *J. Org. Chem.* **2020**, *85*, 15437–15448.  
*Most Read Articles (1 Month), accessed on 12/04/2020*  
*Highlighted in Synfacts* (DOI: 10.1055/s-0040-1719344)
- 13) Tanaka, S.; Asako, T.; **Ota, E.**; Yamaguchi, J. “Synthesis of A Pentaarylcarbazole: Installation of Different Aryl Groups on Benzenoid Moiety” *Chemistry Letters*, **2020**, *49*, 918–920.
- 14) Hoshi, T.; **Ota, E.**; Inokuma, Y.; Yamaguchi, J. “Asymmetric Synthesis of a 5,7-Fused Ring System Enabled by an Intramolecular Buchner Reaction with Chiral Rhodium Catalyst,” *Organic Letters*, **2019**, *21*, 10081–10084.  
*Highlighted in Org. Chem. Highlights 2020, August 10.*  
(<https://www.organic-chemistry.org/Highlights/2020/10August.shtm>)
- 15) **Ota, E.**; Wang, H.; Frye, N. L.; Knowles, R. R. “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*, **2019**, *141*, 1457–1462.  
*Most Read Articles (1 Month), accessed on 2/14/2019*

- 16) **Ota, E.**; Usui, K.; Oonuma, K.; Koshino, H.; Nishiyama, S.; Hirai, G.; Sodeoka, M. “Thienyl-Substituted  $\alpha$ -Ketoamide: A Less Hydrophobic Reactive Group for Photo-Affinity Labeling,” *ACS Chemical Biology*, **2018**, *13*, 876-880.  
*Most Read Articles (12 Months), accessed on 2/14/2019*  
*Highlighted in In This Issue (ACS Chem. Biol. 2018, 13, 841–841.)*  
*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、科学新聞、薬事日報掲載
- 17) Wang, Q.; Kuramoto, Y.; Okazaki, Y.; **Ota, E.**; Morita, M.; Hirai, G.; Saito, K.; Sodeoka, M. “Synthesis of Polyunsaturated Fatty acid-containing glucuronosyl-diacylglycerol through Direct Glycosylation,” *Tetrahedron Letters*, **2017**, *58*, 2915–2918.
- 18) **Ota, E.**; Mikame, Y.; Hirai, G.; Nishiyama, S.; Sodeoka, M. “Photochemical and Additive-free Coupling Reaction of  $\alpha$ -Cumyl  $\alpha$ -Ketoesters via Intermolecular C-H Bond Activation,” *Synlett*, **2016**, *27*, 1128–1132.
- 19) **Ota, E.**; Mikame, Y.; Hirai, G.; Koshino, H.; Nishiyama, S.; Sodeoka, M. “Photo-induced Formation of Cyclopropanols from  $\alpha$ -Ketoamides via  $\gamma$ -C-H bond activation,” *Tetrahedron Letters*, **2015**, *56*, 5991–5994.
- 20) Hirai, G.; **Ota, E.**; Sakai, M.; Nishiyama, S.; Sodeoka, M. “C-Sialosides: Synthesis and Biological Activities,” *Trends in Glycoscience and Glycotechnology*, **2015**, *27*, 47–60.
- 21) **Ota, E.**; Takeiri, M.; Tachibana, M.; Ishikawa, Y.; Umezawa, K.; Nishiyama, S. “Synthesis and biological evaluation of molecular probes based on the 9-methylstreptimidone derivative DTCM-glutarimide,” *Bioorganic & Medicinal Chemistry Letters*, **2012**, *22*, 164–1670.
- 22) Takeiri, M.; **Ota, E.**; Nishiyama, S.; Kiyota, H.; Umezawa, K. “Structure-activity relationship of 9-methylstreptimidone, a compound that induces apoptosis selectively in adult T-cell leukemia cells,” *Oncology Research*, **2012**, *20*, 15–24.

#### PRESENTATIONS (International)

- 1) “Photocatalytic C–N bond cleavage of pyrrolidines enabled by Lewis acid and photoredox catalysis” International Conference on Organic Synthesis (23-ICOS), Zhangjiang Science Hall Shanghai, China, October 15, 2023, **Eisuke Ota,\*** Marina Hirao, Kazuhiro Aida, Junichiro Yamaguchi\*
- 2) ”  $\sigma$  -Bond Cleavage by Photoredox/Zirconocene Catalysis” 11th Singapore International Chemistry Conference (SICC-11), 2 Fusionopolis Way, Singapore, December 13, 2022, **Eisuke Ota** (Invited)

- 3) “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.
- 4) “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.
- 5) “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.
- 6) “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) 「タイトル未定」理化学研究所、2023年11月(予定、招待講演)
- 2) 「生体分子や医薬品の構造改変を志向した可視光駆動型結合開裂反応の開発」第56回天然物談話会、つくば国際会議場、2023年6月
- 3) 「可視光駆動型 $\sigma$ 結合開裂反応を追い求めて」第17回有機電子移動化学若手の会、慶應義塾大学、2023年6月 (招待講演)
- 4) 「ジルコノセン/可視光レドックス触媒を用いた $\sigma$ 結合開裂反応の開発」第13回南方研若手研究者セミナー、大阪大学、2022年11月 (招待講演)
- 5) 「可視光を利用した結合開裂反応の開発」第3回有機化学・創薬化学セミナー、筑波大学、2022年9月 (招待講演)
- 6) 「ジルコノセン/可視光レドックス触媒を用いた $\sigma$ 結合開裂反応の開発」第64回天然有機化合物討論会、2022年9月
- 7) 「 $\alpha$ -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
- 8) 「Norrish-type II 反応を起こさない $\alpha$ -ケトアミドおよび $\alpha$ -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

- 9) 「分子間水素移動を経る  $\alpha$ -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
- 10) 「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
- 11) 「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
- 12) 「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
- 13) 「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
- 14) 「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
- 15) 「NF- $\kappa$ 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
- 16) 「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
- 17) 「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
- 18) 「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