Eisuke Ota, Ph.D.

Associate Professor (The Yamaguchi Group)
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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)

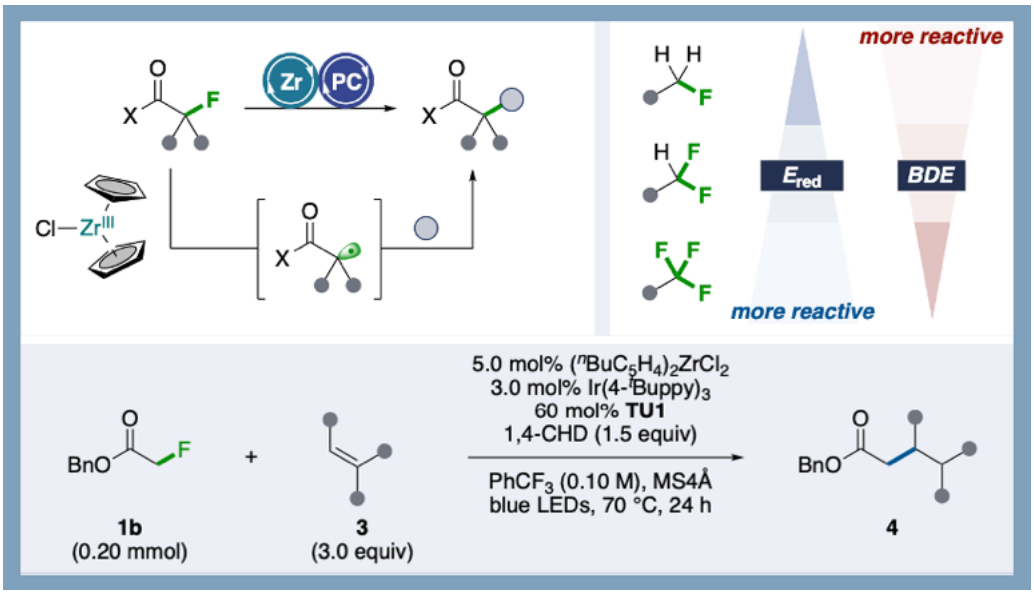
AWARDS AND FELLOWSHIPS

2024	Lectureship Award, Digitalization-driven Transformative Organic Synthesis
2024	Young Scholar Lecture, The Chemical Society of 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)
2021	Konica Minolta Award, Synthetic Organic Chemistry, Japan

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

PREPRINT

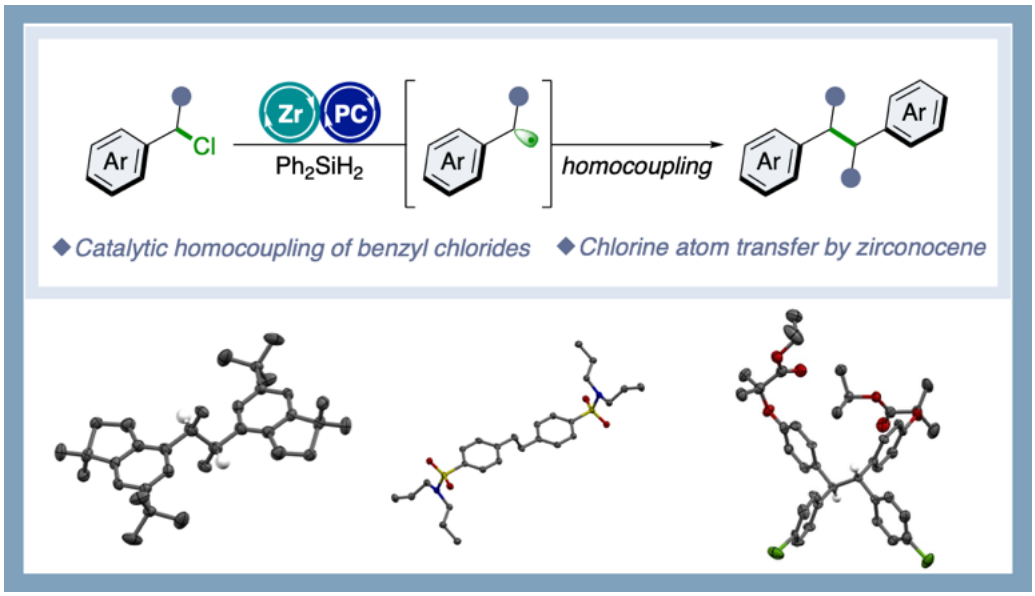
1) Takimoto, H.; Aida, K.; Nishimoto, Y.; Yokogawa, D.; **Ota, E.***; Yamaguchi, J.* "Reversing the Chemoselectivity in Photocatalytic C–F Bond Cleavage Enabled by Zirconocene and Photoredox Catalysis" *ChemRxiv.* **2024**.



PUBLICATIONS

1) Tajima, R.; Tanaka, K.; Aida, K.; **Ota, E.***; Yamaguchi, J.* "Catalytic Reductive Homocoupling of Benzyl Chlorides Enabled by Zirconocene and Photoredox Catalysis" *Precis. Chem.* **2024**, ASAP (Invited contribution).

Most Read Articles (1 Month) accessed on 11/15/2024



2) Aida, K.; Hirao, M.; Saitoh, T.; Yamamoto, T.; Einaga, Y.; **Ota, E.***; Yamaguchi, J.* **"**Selective C–N Bond Cleavage in Unstrained Pyrrolidines Enabled by Lewis Acid and Photoredox Catalysis" *J. Am. Chem. Soc.* **2024**, *146*, 44, 30698–30707.

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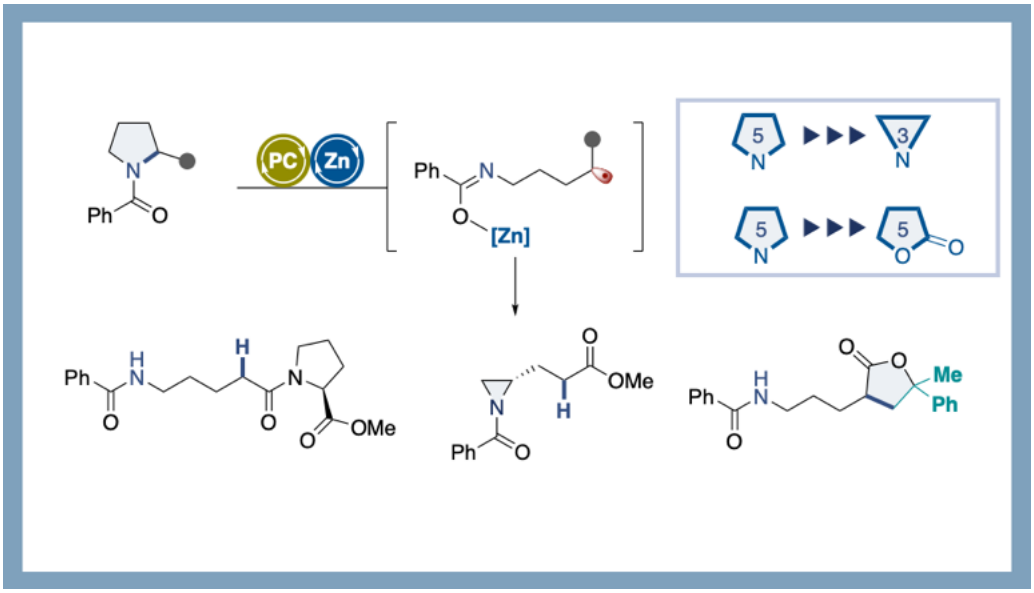
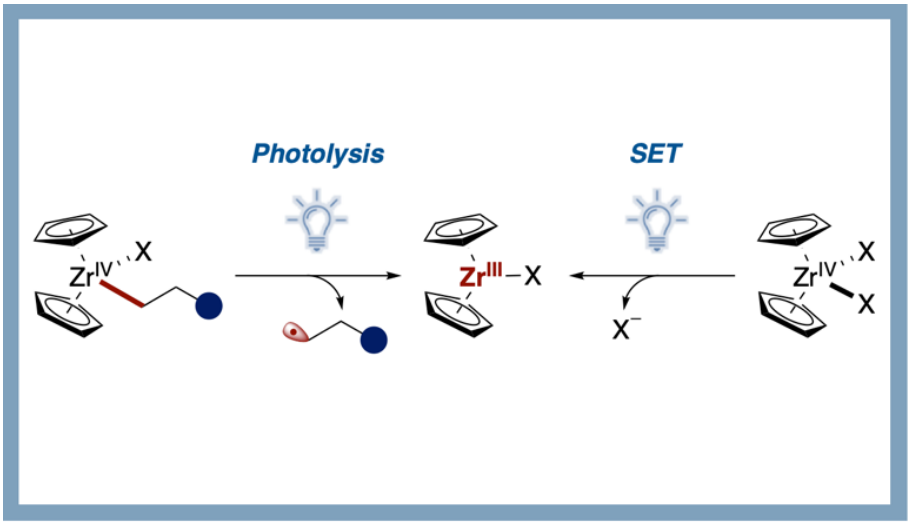
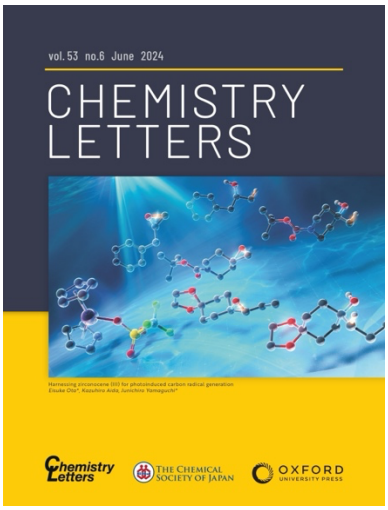


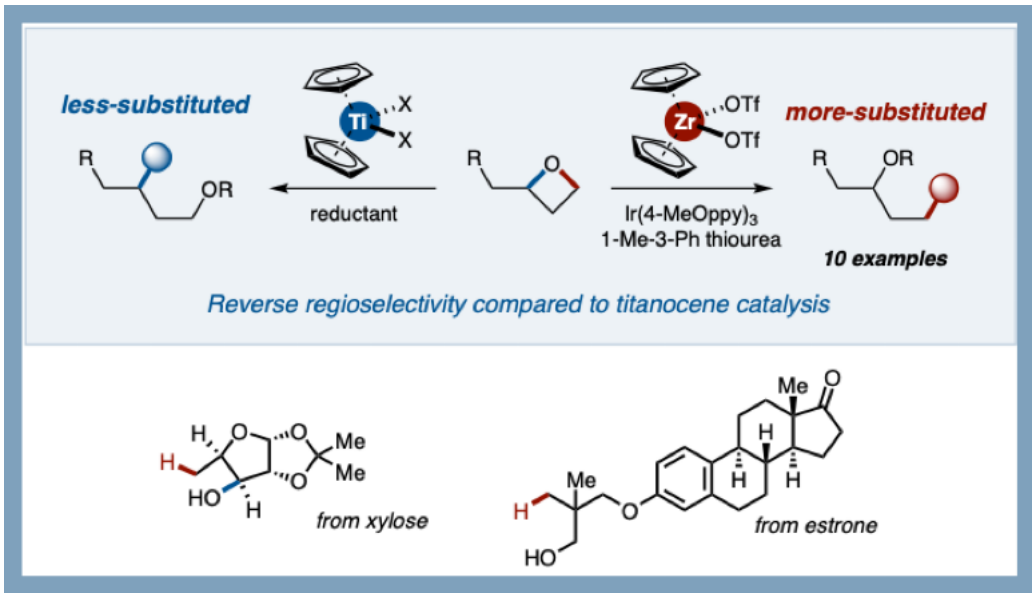
3) **Ota, E.***; Aida, K.; Yamaguchi, J.* "Harnessing Zirconocene (III) for Photoinduced Carbon Radical Generation" *Chem. Lett.* **2024**, 53, upae095. (invited review)

Invited as "Highlight Review", Most Read, Selected as Front Cover and Inside Cover.

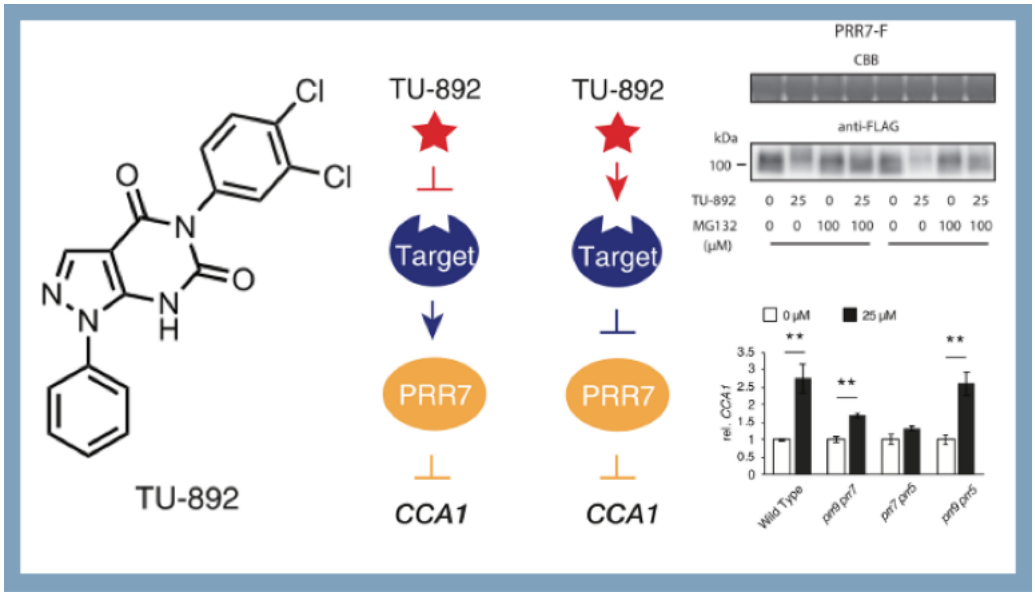




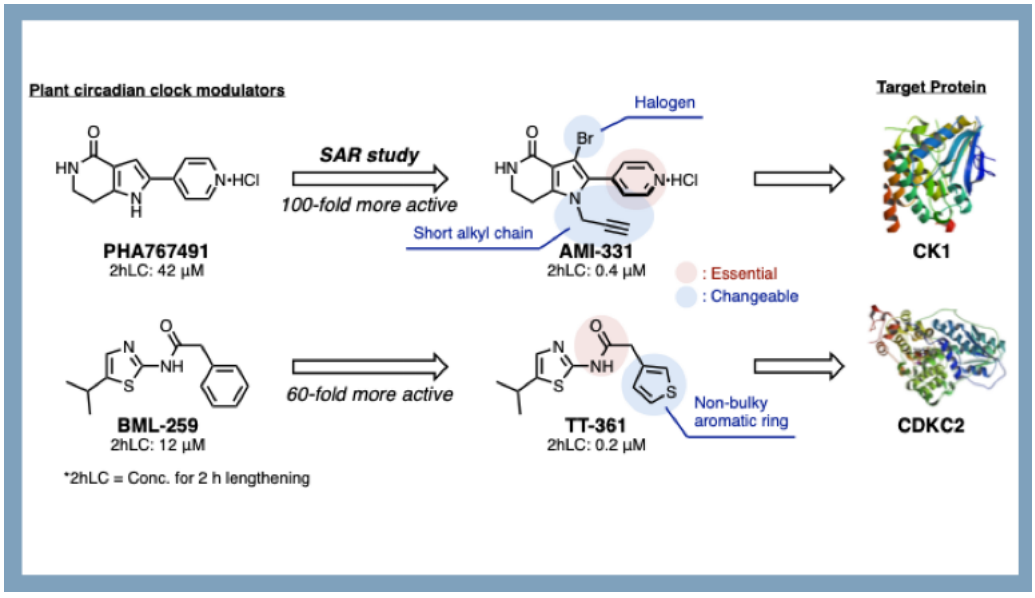
4) Aida, K.; **Ota, E.***; Yamaguchi, J.* "Regioselective Ring Opening of Oxetanes Enabled by Zirconocene and Photoredox Catalysis", *Synlett* **2024**, *35*, 451–454. (Invited contribution).



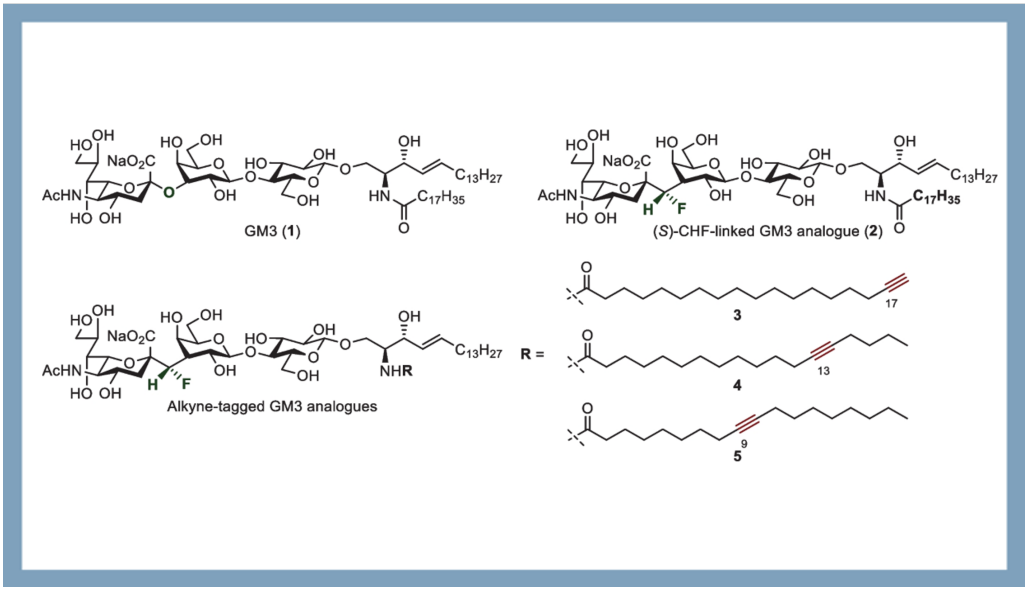
5) Uehara, T. N.; Takao, S.; Matsuo, H.; Saito, A. N.; **Ota, E.**; Ono, A.; Itami, K.; Kinoshita, T.; Yamaguchi, J.; Nakamichi, N. “A Small-Molecule Modulator Affecting the Clock-Associated PSEUDO-RESPONSE REGULATOR 7 Amount”, *Plant Cell Physiol* **2023**, *64,* 1397–1406.



6) Saito, A. N.; **Ota, E.**; Nakamichi, N.; Yamaguchi, J. “Development of Plant Circadian Clock Modulators”, *J. Synth. Org. Chem. Jpn.* **2023**, *81*, 718–730.



7) **Ota, E.**; Takeda, D.; Oonuma, K.; Kato, M.; Matoba, H.; Yoritate, 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. (Invited contribution).



8) 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)
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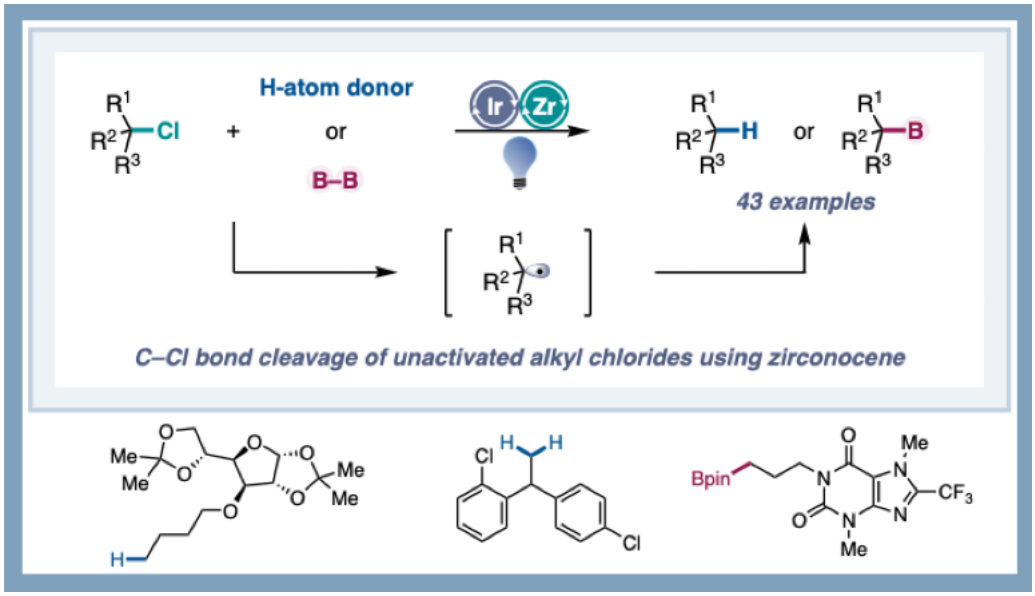
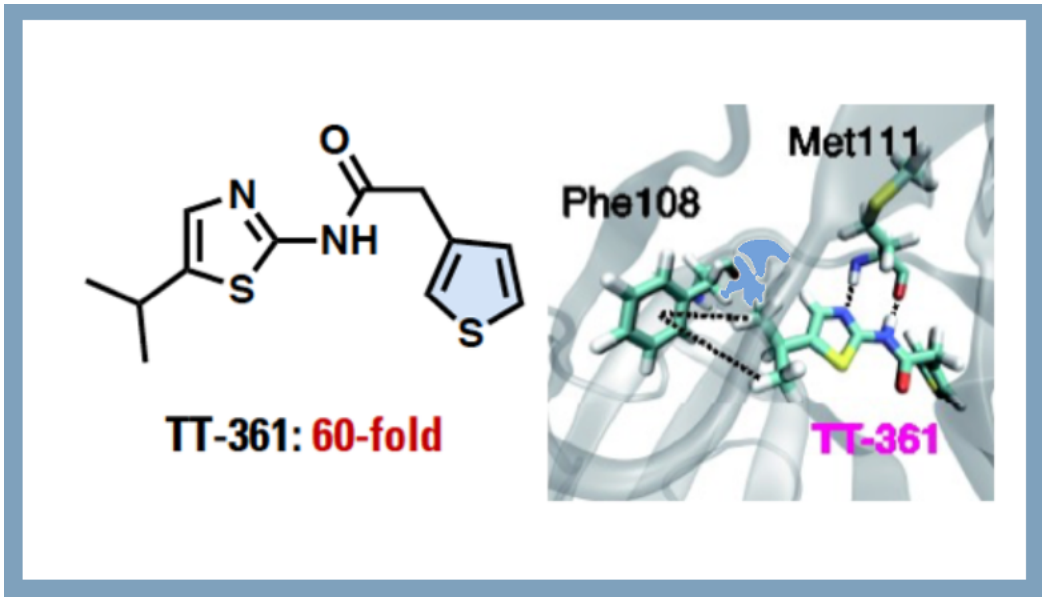
Highlighted in Editorial (Precis. Chem. 2024, 2, 127–128.)



9) 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.



10) Kubo, M.; Inayama, N.; **Ota, E.**; Yamaguchi, J. "Palladium-Catalyzed Tandem Ester Dance/Decarbonylative Coupling Reactions" *Org. Lett.* **2022**, *24*, 3855–3860.

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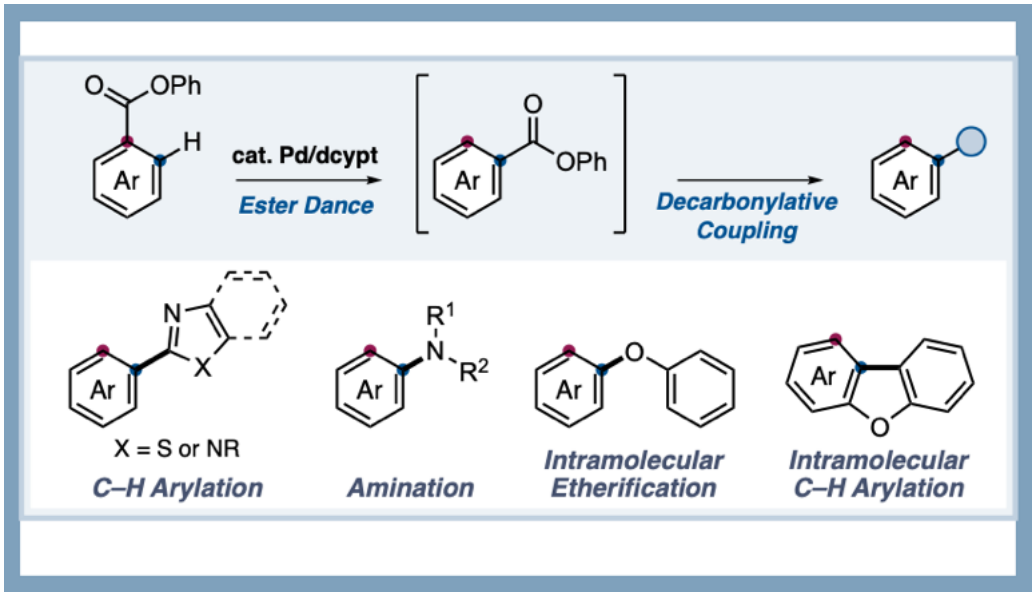
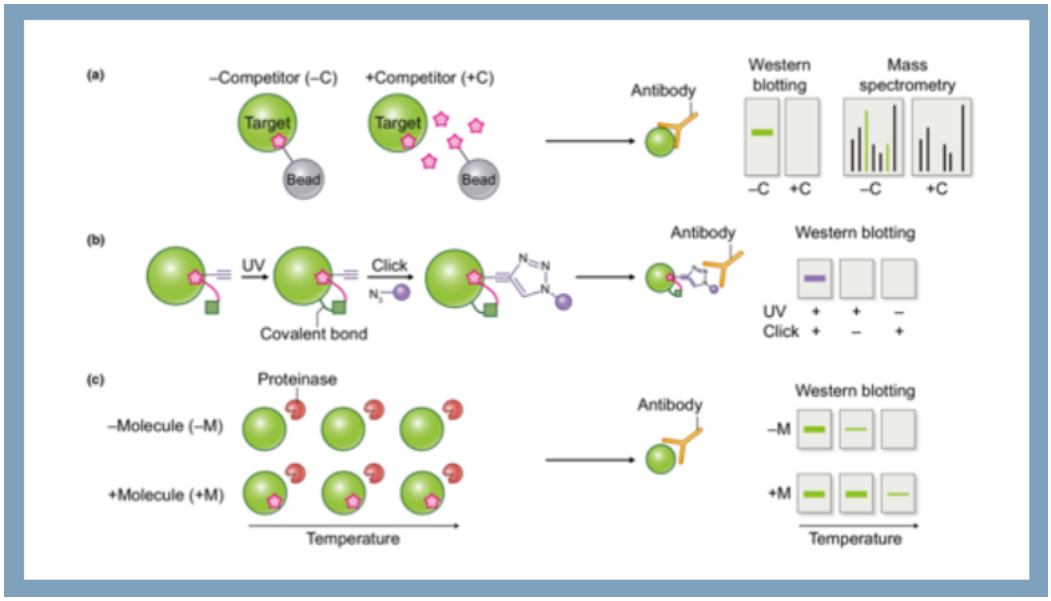


11) Nakamichi, N.; Yamaguchi, J.; Sato, A.; Fujimoto, K. J.; **Ota, E.** "Chemical biology to dissect molecular mechanisms underlying plant circadian clocks" *New Phytologist,* **2022**, *235*, 1336–1343.



12) 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.

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Highlighted in Synform (DOI: 10.1055/s-0040-1720576)

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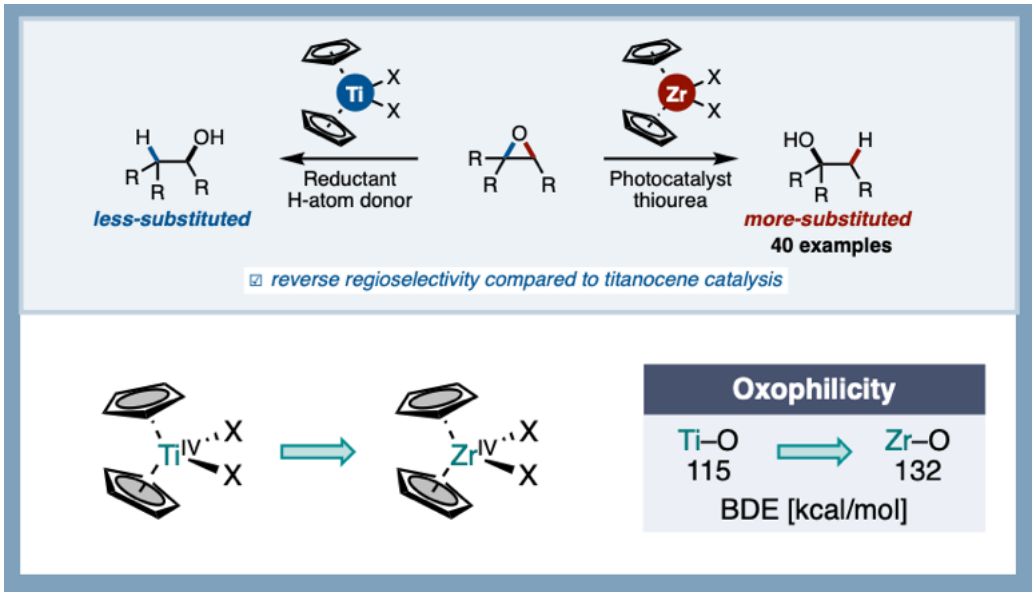
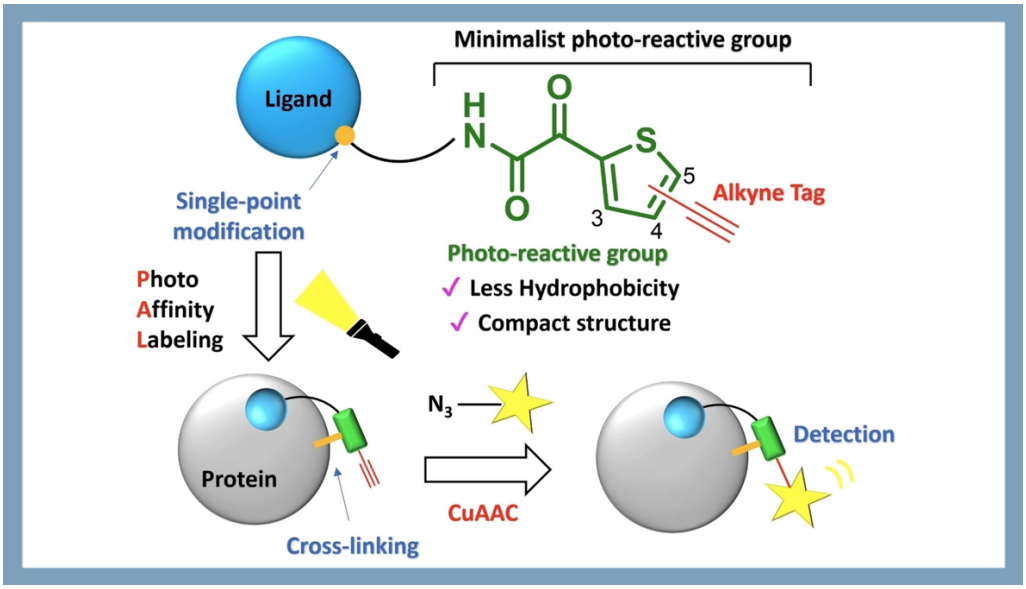
Chem-Station Spotlight Research



13) Moriyama, T.; Mizukami, D.; Yoritate, 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 α-Ketoamide" *Chem. Eur. J.* **2022**, *28*. e202103925.



14) 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.

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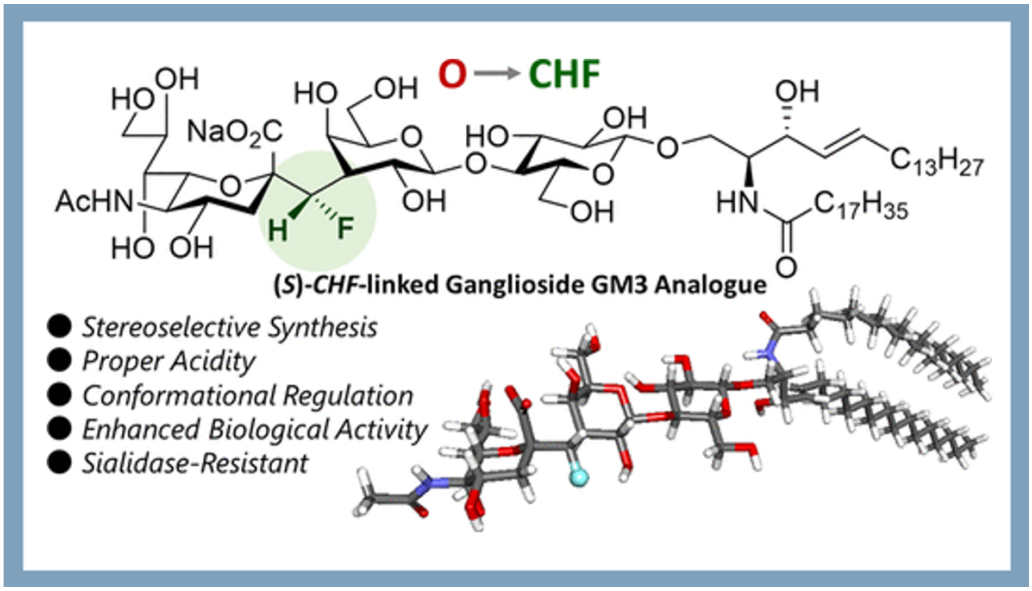
Selected as a Front Cover



15) Asako, T.; Suzuki, S.; Tanaka, S.; **Ota, E.**; Yamaguchi, J. "Synthesis of Decaarylanthracene with Nine Different Substituents" *J. Org. Chem.* **2020**, *85*, 15437–15448.
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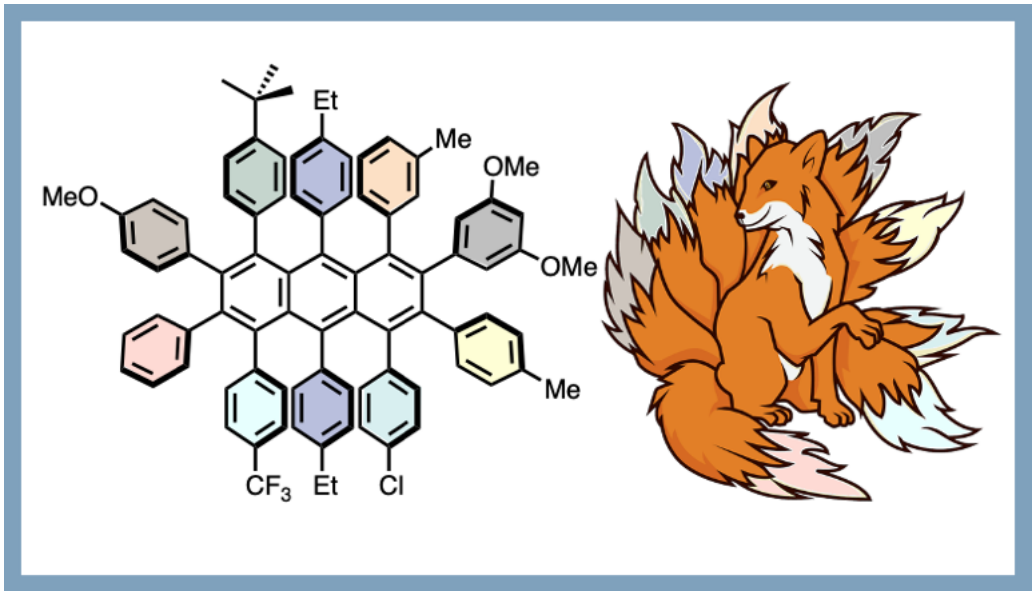
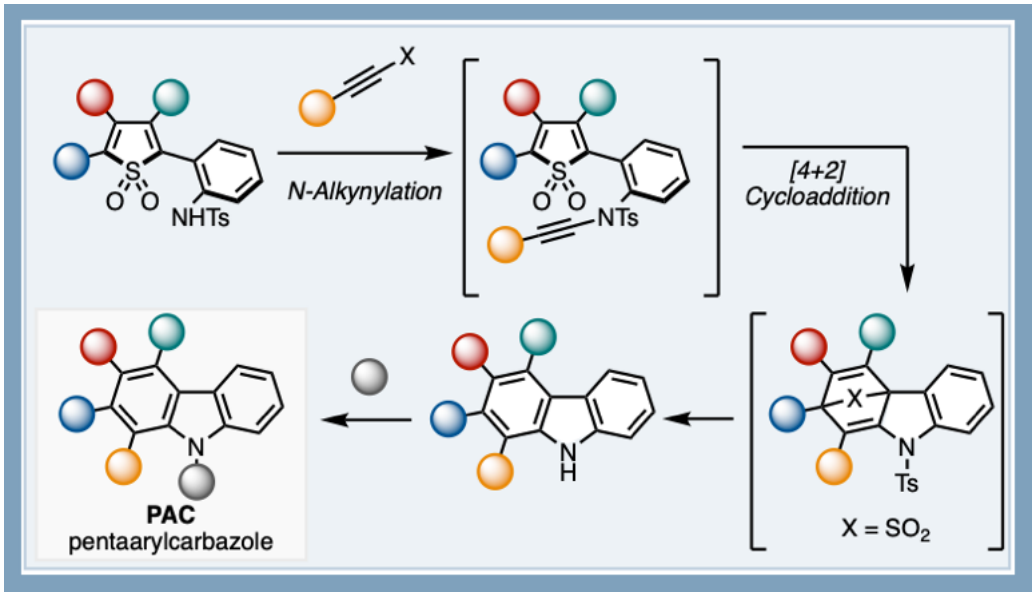
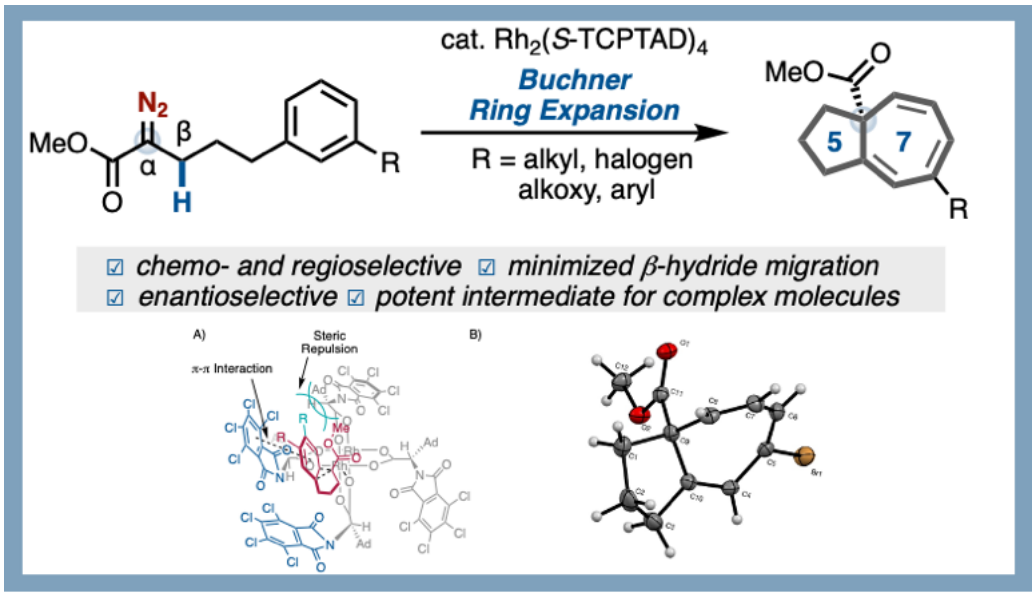


16) Tanaka, S.; Asako, T.; **Ota, E.**; Yamaguchi, J. "Synthesis of A Pentaarylcarbazole: Installation of Different Aryl Groups on Benzenoid Moiety" *Chemistry Letters,* **2020**, *49*, 918–920.

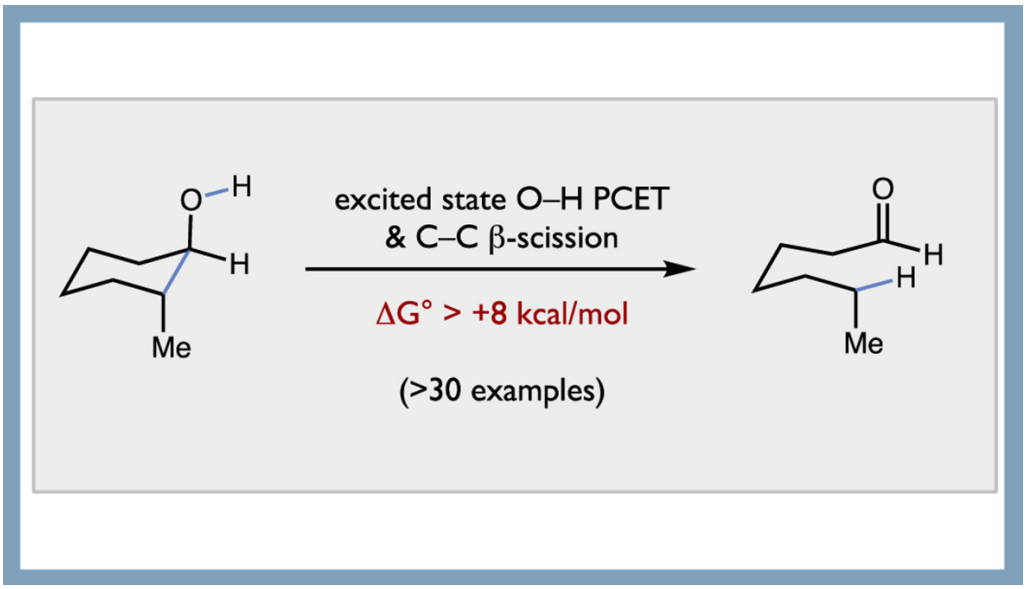


17) Hoshi, T.; **Ota, E.**; Inokuma, Y.; Yamaguchi, J. "Asymmetric Synthesis of a 5,7-Fused Ring System Enabled by an Intramolecular Buchner Reaction with Chiral Rhodium Catalyst," *Organic Letters*, **2019**, *21*, 10081–10084.
Highlighted in Org. Chem. Highlights 2020, August 10.
(https://www.organic-chemistry.org/Highlights/2020/10August.shtm)



18) **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

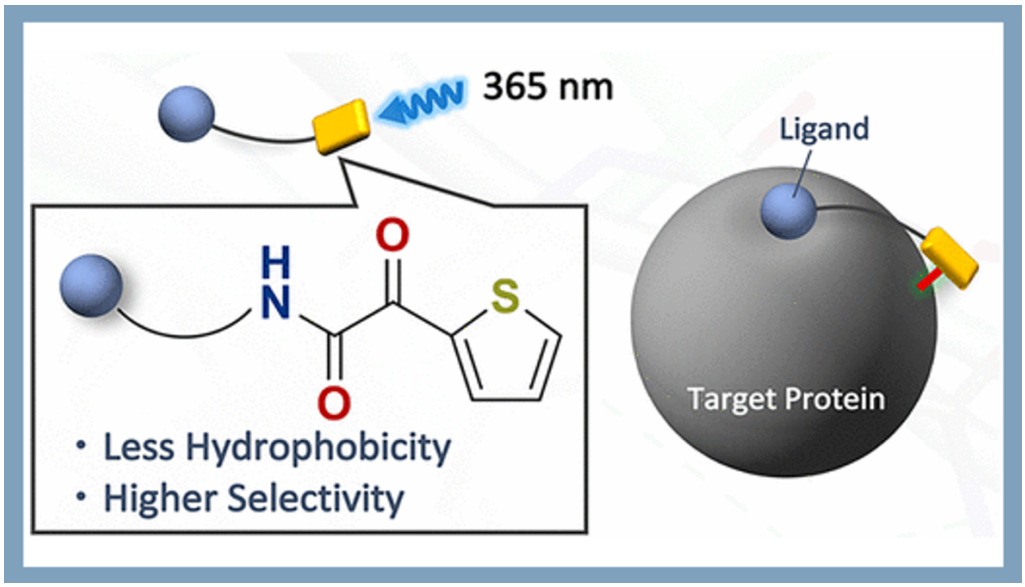


19) **Ota, E.**; Usui, K.; Oonuma, K.; Koshino, H.; Nishiyama, S.; Hirai, G.; Sodeoka, M. "Thienyl-Substituted α-Ketoamide: A Less Hydrophobic Reactive Group for Photo-Affinity Labeling," *ACS Chemical Biology*, **2018**, *13*, 876-880.

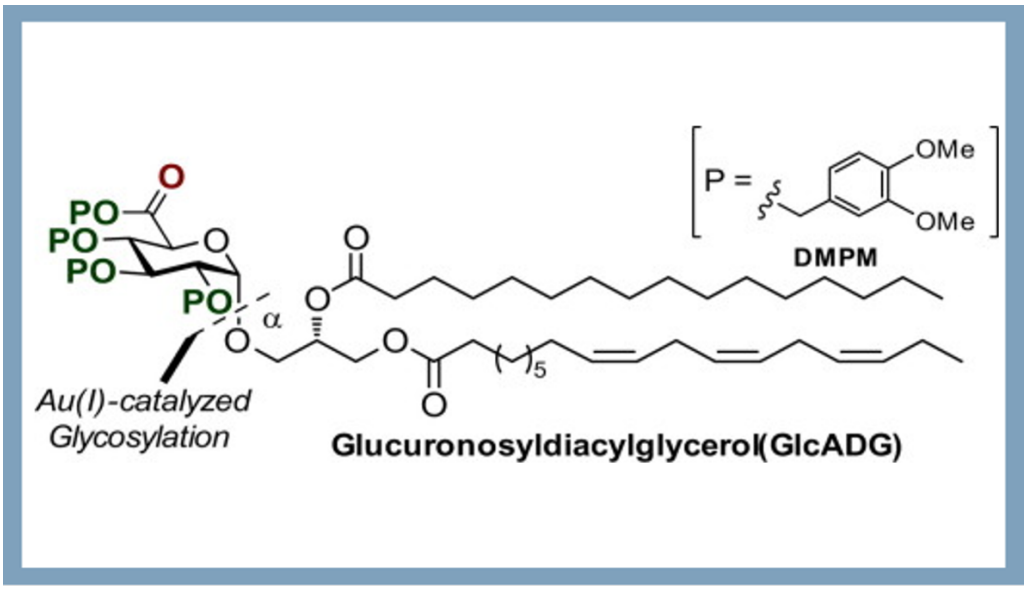
Most Read Articles (12 Months), accessed on 2/14/2019

Highlighted in In This Issue (*ACS Chem. Biol.* **2018**, *13*, 841−841.)

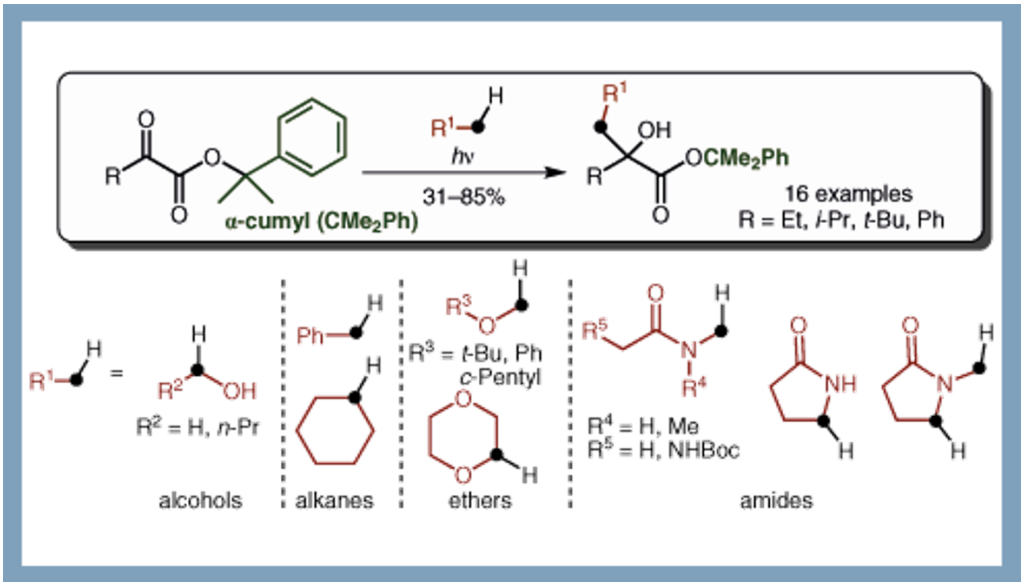
Chem-Station Spotlight Research



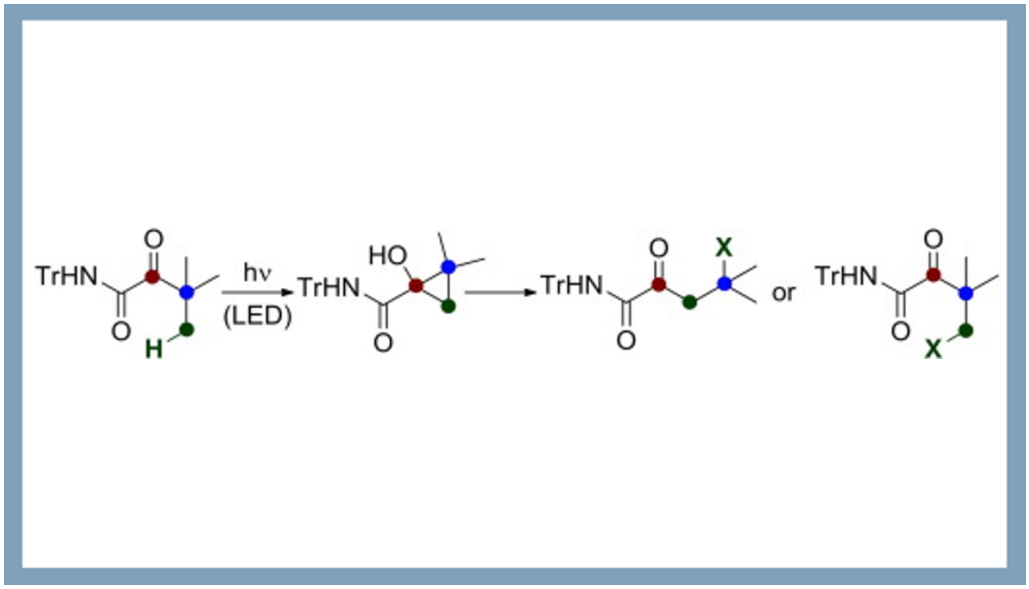
20) Wang, Q.; Kuramoto, Y.; Okazaki, Y.; **Ota, E.**; Morita, M.; Hirai, G.; Saito, K.; Sodeoka, M. "Synthesis of Polyunsaturated Fatty acid-containing glucuronosyl-diacylglycerol through Direct Glycosylation," *Tetrahedron Letters*, **2017**, *58*, 2915–2918.



21) **Ota, E.**; Mikame, Y.; Hirai, G.; Nishiyama, S.; Sodeoka, M. "Photochemical and Additive-free Coupling Reaction of α-Cumyl α-Ketoesters via Intermolecular C-H Bond Activation," *Synlett*, **2016**, *27*, 1128–1132.



22) **Ota, E.**; Mikame, Y.; Hirai, G.; Koshino, H.; Nishiyama, S.; Sodeoka, M. "Photo-induced Formation of Cyclopropanols from α-Ketoamides via γ-C-H bond activation," *Tetrahedron Letters*, **2015**, *56*, 5991–5994.



23) 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.

24) **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.

25) 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) " σ -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.