

Akira Katsuyama

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Education/Career:

2014: B.S. from Faculty of Pharmaceutical Science, Hokkaido University (Prof. Akira Matsuda)

2016: M. S. from Graduate School of Life Science, Hokkaido University (Prof. Satoshi Ichikawa)

2018: Ph. D. from Graduate School of Life Science, Hokkaido University (Prof. Satoshi Ichikawa)

2018-current: Assistant Professor, Faculty of Pharmaceutical Science, Hokkaido University (Prof. Satoshi Ichikawa)

Research Interests

Synthetic organic chemistry, Natural product, Medicinal chemistry, Total synthesis, Atropisomer,

Original papers

1. Kaguchi, R.; Katsuyama, A.*; Sato, T.; Takahashi, S.; Horiuchi, M.; Yokota, S.-i.; Ichikawa, S. Discovery of biologically optimized polymyxin derivatives facilitated by peptide scanning and *in situ* screening chemistry. ***J. Am. Chem. Soc.*** 2023, 145, 3665-3681.
2. Komatani, Y.; Momosaki, K.; Katsuyama, A.*; Yamamoto, K.; Kaguchi, R.; Ichikawa, S. Solid-phase total synthesis of sandramycin and its analogues. ***Org. Lett.*** 2023, 25, 543-548.
3. Nakaya, T.; Yabe, M.; Mashalidis, E. H.; Sato, T.; Yamamoto, K.; Hikiji, Y.; Katsuyama, A.; Shinohara, M.; Minato, Y.; Takahashi, S.; Horiuchi, M.; Yokota, S.-i.; Lee, S.-Y.;

- Ichikawa, S.* Synthesis of macrocyclic nucleoside antibacterials and their interactions with Mray. *Nature Commun.* 2022, 13, 7575.
4. Takashina, K.; Katsuyama, A.*; Kaguchi, R.; Yamamoto, K. Sato, T.; Takahashi, S.; Horiuchi, M.; Yokota, S.-i.; Ichikawa, S.* Solid-phase total synthesis of plusbacin A₃, *Org. Lett.* 2022, 24, 2253-2257.
 5. Katsuyama, A.; Yakushiji, F.; Ichikawa, S.* Solid-phase synthesis of fluorescent analogues of Park's nucleotide, lipid I and lipid II, *Tetrahedron Lett.* 2021, 153101.
 6. Miyachi, H. *; Kanamitsu, K.; Ishii, M.; Watanabe, E.; Katsuyama, A.; Otsuguro, S.; Yakushiji, F.; Watanabe, M.; Matsui, K.; Sato, Y.; Shuto, S.; Tadokoro, T.; Kita, S.; Matsumaru, T.; Matsuda, A.; Hirose, T.; Iwatsuki, M.; Shigeta, Y.; Nagano, T.; Kojima, H.; Ichikawa, S.; Sunazuka, T.; Maenaka, K.* Structure, solubility, and permeability relationships in a diverse middle molecule library. *Bioorg. Med. Chem. Lett.* 2021, 37, 127847.
 7. Terasawa, Y.; Sataka, C.; Sato, T.; Yamamoto, K.; Fukushima, Y.; Nakajima, C.; Suzuki, Y.; Katsuyama, A.; Matsumaru, T.; Yakushiji, F.; Yokota, S.-i.; Ichikawa, S.* Elucidating the structural requirement of uridylpeptide antibiotics for antibacterial activity. *J. Med. Chem.* 2020, 63, 9803-9827.
 8. Hirabayashi, J.; Yakushiji, F.; Katsuyama, A.; Ichikawa, S. Total synthesis of acaulide and acaulone A. *Org. Lett.* 2020, 22, 5545-5549.
 9. Kojima, K.; Yakushiji, F.; Katsuyama, A.; Ichikawa, S.* Total synthesis of echinomycin and its analogues. *Org. Lett.* 2020, 22, 4217-4221.
 10. Kitahata, S.; Katsuyama, A.; Ichikawa, S.* A synthesis strategy for the production of a macrolactone of gulmirecin A via a Ni(0)-mediated reductive cyclization reaction. *Org. Lett.* 2020, 22, 2697-2701.
 11. Yamamoto, K.; Sato, T.; Hikiji, Y.; Katsuyama, A.; Matsumaru, T.; Yakushiji, F.; Yokota, S.-i.; Ichikawa, S.* Synthesis and biological evaluation of Mray selective analogue of tunicamycins. *Nucleosides, Nucleotides & Nucleic Acids* 2020, 30, 349-364.
 12. Mashalidis, E. H.; Kaeser, B.; Terasawa, Y.; Katsuyama, A.; Kwon, D.-Y.; Lee, K.; Hong, J.; Ichikawa, S.*; Lee, S.-Y.* Chemical logic of Mray inhibition by antibacterial nucleoside natural products. *Nat. Commun.* 2019, 10, 2917.
 13. Yamamoto K.; Katsuyama A.; Ichikawa S*. Structural requirement of tunicamycin V for

MraY inhibition. *Bioorg. Med. Chem.* 2019, 27, 1714-1719.

14. Katsuyama, A.; Yakushiji, F.; Ichikawa, S.* Total synthesis of plusbacin A₃ and its dideoxy derivative using a solvent-dependent diastereodivergent Joullié–Ugi three-component reaction. *J. Org. Chem.* 2018, 83, 7085-7101.
15. Katsuyama, A.; Sato, K.; Yakushiji, F.; Matsumaru, T.; Ichikawa, S.*. Solid-phase modular synthesis of Park nucleotide and lipid I and lipid II analogues. *Chem. Phar. Bull.* 2018, 66, 84-95.
16. Katsuyama, A.; Paudel, A.; Panthee, S.; Hamamoto, H.; Kawakami, T.; Hojo, H.; Yakushiji F.; Ichikawa, S.*. Total Synthesis and Antibacterial Investigation of Plusbacin A₃. *Org. Lett.* 2017, 19, 3771-3774.
17. Katsuyama, A.; Matsuda, A.; Ichikawa, S.* Revisited mechanistic implications of the Joullié-Ugi three component reaction. *Org. Lett.* 2016, 18, 2552- 2555.

Reviews

18. Katsuyama, Akira and Ichikawa, Satoshi.* **Synthesis and Medicinal Chemistry of Muraymycins, Nucleoside Antibiotics**, *Chem. Pharm. Bull.* , **2018**, 66, 123-131.

