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学歴・職歴

2013年3月 東京大学薬学部卒業
2015年3月 東京大学大学院薬学系研究科修士課程修了
2015年4月 日本学術振興会特別研究員 DC1
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2018年4月 東京大学大学院薬学系研究科・博士研究員
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2020年4月 日本学術振興会海外特別研究員
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受賞歴

2020年2月 第36回 井上研究奨励賞
2022年6月 日本薬学会 生薬天然物部会奨励賞

学術論文リスト

1. Mori, T.,[†] **Nakashima, Y.**,[†] Chen, H., Hoshino, S., Mitsuhashi, T., Abe, I. “Structure-based redesign of Fe(II)/2-oxoglutarate-dependent oxygenase AndA to catalyze spiro-ring formation.” *Chem. Commun.* 58, 5510-5513 (2022)
†co-first author
2. Wang, X.-H.,[†] Gao, B.-W.,[†] **Nakashima, Y.**,[†] Mori, T., Zhang, Z.-X., Kodama, T., Lee, Y.-E., Zhang, Z.-K., Wong, C.-P., Liu, Q.-Q., Qi, B.-W., Wang, J., Li, J., Liu, X., Abe, I., Morita, H., Tu, P.-F., Shi, S.-P. “Identification of a diarylpentanoid-producing polyketide synthase revealing an unusual biosynthetic pathway of 2-(2-phenylethyl)chromones in agarwood.” *Nature Commun.* 13, Article number: 348 (2022)
†co-first author
3. Lee, Y. E., **Nakashima, Y.**, Kodama, T., Chen, X., Morita, H. “Dual engineering of olivetolic acid cyclase and tetraketide synthase to generate longer alkyl-chain olivetolic acid analogs.” *Org. Lett.* 24, 410-414 (2022)
4. **Nakashima, Y.**, Brewitz, L., Tumber, A., Salah, E., Schofield, C. J. “2-Oxoglutarate derivatives can selectively enhance or inhibit the activity of human oxygenases.” *Nature Commun.* 12, Article number: 6478 (2021)

5. Brewitz, L., **Nakashima, Y.**, Tumber, A., Salah, E., Schofield, C. J. "Fluorinated derivatives of pyridine-2,4-dicarboxylate are potent inhibitors of human 2-oxoglutarate dependent oxygenases." *J. Fluor. Chem.* 247, Article number: 109804 (2021)
6. Brasnett, A., Pfeffer, I., Brewitz, L., Chowdhury, R., **Nakashima, Y.**, Tumber, A., McDonough, M. A., Schofield, C. J. "Human oxygenase variants employing a single protein fell ligand are catalytically active." *Angew. Chem. Int. Ed.* 60, 14657-14663 (2021)
7. Figg, W. D. Jr, McDonough, M. A., Chowdhury, R., **Nakashima, Y.**, Zhang, Z., Holt-Martyn, J. P., Krajnc, A., Schofield, C. J. "Structural Basis of Prolyl Hydroxylase Domain Inhibition by Molidustat." *ChemMedChem* 16, 2082-2088 (2021)
8. Brewitz, L., **Nakashima, Y.**, Schofield, C. J. "Synthesis of 2-oxoglutarate derivatives and their evaluation as cosubstrates and inhibitors of human aspartate/asparagine- β -hydroxylase." *Chem. Sci.* 12, 1327-1342 (2020)
9. Choi, H., Hardy, A. P., Leissing, T. M., Chowdhury, R., **Nakashima, Y.**, Ge, W., Markoulides, M., Schotti, J. S., Gerken, P. K., Thorbjornsrud, H., Kang, D., Hong, S., Lee, J., McDonough, M. A., Park, H., Schofield C. J. "A Human protein hydroxylase that accepts D-residues." *Commun. Chem.* 3, Article number: 52 (2020)
10. **Nakashima, Y.**, Mori, T., Nakamura, H., Awakawa, T., Hoshino, S., Senda, M., Senda, T., Abe, I. "Structure function and engineering of multifunctional non-heme iron dependent oxygenases in fungal meroterpenoid biosynthesis." *Nature Commun.* 9, Article number: 104 (2018)
11. **Nakashima, Y.**, Mitsuhashi, T., Matsuda, Y., Senda, M., Sato, H., Yamazaki, M., Uchiyama, M., Senda, T., Abe, I. "Structural and computational bases for dramatic skeletal rearrangement in anditomin biosynthesis." *J. Am. Chem. Soc.* 140, 9743-9750 (2018)
12. Awakawa, T., Mori, T., **Nakashima, Y.**, Zhai, R., Wong, C. P., Hillwig, M. L., Liu, X., Abe, I. "Molecular basis for Mg²⁺-dependent allosteric control of indole prenylation by aromatic prenyltransferase AmbP1." *Angew. Chem. Int. Ed.* 57, 6810-6813 (2018)
13. Wong, C. P., Awakawa, T., **Nakashima, Y.**, Mori, T., Zhu, Q., Liu, X., Abe, I. "Two distinct substrate binding modes for the normal and reverse prenylations of hapalindoles by the prenyltransferase AmbP3." *Angew. Chem. Int. Ed.* 57, 560-563 (2018)
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15. **Nakashima, Y.**, Egami, Y., Kimura, M., Wakimoto, T., Abe, I. "Metagenomic analysis of the sponge *Discodermia* reveals the production of the cyanobacterial natural product kasumigamide by 'Entotheonella.'" *PLoS ONE*, 11(10): e0164468 (2016)

16. Matsuda, Y., Iwabuchi, T., Fujimoto, T., Awakawa, T., **Nakashima, Y.**, Mori, T., Zhang, H., Hayashi, F., Abe, I. "Discovery of key dioxygenases that diverged the paraherquonin and acetoxylhydroaustin pathways in *Penicillium brasilianum*" **J. Am. Chem. Soc.** 138, 12671-12677 (2016)
17. Okada, M., Sugita, T., Akita, K., **Nakashima, Y.**, Tian, T., Li, C., Mori, T., Abe, I. "Stereospecific prenylation of tryptophan by a cyanobacterial post-translational modification enzyme." **Org. Biomol. Chem.** 14, 9639-9644 (2016)
18. Wakimoto, T., Egami, Y., **Nakashima, Y.**, Wakimoto, Y., Mori, T., Awakawa, T., Ito, T., Kenmoku, H., Asakawa, Y., Piel, J., Abe, I. "Calyculin biogenesis in a marine sponge and microbe symbiont association." **Nature Chem. Biol.** 10, 648-655 (2014)

著書・総説

1. **中嶋優**, 阿部郁朗, 「多段階反応を触媒する酸化酵素のエンジニアリング」**現代化学**, 567, 17-21 (2018)