

CURRICULUM VITAE

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EDUCATION:

Ph.D., M.S., Bioorganic Chemistry Hokkaido University, Sapporo, Japan Thesis Advisor: Professor Nabeta Kensuke	March 2011
B.Sc., Bioorganic Chemistry Hokkaido University, Sapporo, Japan Thesis Advisor: Professor Nabeta Kensuke	March 2006

PROFESSIONAL EXPERIENCE:

2017/4-	School of Pharmacy, University of Shizuoka Assistant Professor
2015-2017	UCLA, Chemical and Biomolecular Engineering Postdoctoral Fellow Principal Investigator: Professor Yi Tang
2014-2015	UC Berkeley, Chemical and Biomolecular Engineering Visiting scholar Principal Investigator: Assistant professor Wenjun Zhang
2011-2014	School of Pharmacy, University of Shizuoka Postdoctoral Fellow Principal Investigator: Professor Kenji Watanabe Research: Biosynthetic study on azaphilones from fungi
2006-2011	Department of Applied Bioscience, Hokkaido University Principal Investigator: Professor Kensuke Nabeta Research: Biological activity of ppGpp in chloroplasts

HONORS AND AWARDS:

Postdoctoral fellowship (Fellowship of Astellas Foundation, JAPAN) 2015-2016
Postdoctoral fellowship (The Uehara Memorial Foundation, JAPAN) 2014-2015
Training Grant. Japan Society for the Promotion of Science 2009-2011

PROFESSIONAL SOCIETIES:

American chemical society
Japan Society for Bioscience, Biotechnology, and Agrochemistry
The Pharmaceutical Society of Japan

PUBLICATIONS:

1. Ohashi M., Liu F., Hai Y., Chen M., Tang M.C., Yang Z., Sato M., Watanabe K., Houk K.N., Tang Y. "SAM-Dependent Enzyme-Catalysed Pericyclic Reactions in Natural Product Biosynthesis." *Nature*, **2017**, 549, 502-506.
2. Harris N.C., Sato M., Herman N.A., Twigg F., Cai W., Liu J., Zhu X., Downey J., Khalaf R., Martin J., Koshino H., Zhang W. "Biosynthesis of Isonitrile Lipopeptides by Conserved Non-ribosomal Peptide Synthetase Gene Clusters in Actinobacteria" *Proc. Natl. Acad. Sci. U. S. A.*, **2017**, 114, 7025-7030.
3. Kishimoto S, Tsunematsu Y, **Sato M**, Watanabe K. "Elucidation of biosynthetic pathways of natural products." *Chem. Rec.*, **2017**, 17, 1-15.
4. **Sato M**, Dander J.E, Sato C, Hung Y.S, Gao S.S, Tang M.C, Hang L, Winter J.M, Garg N.K, Watanabe K, Tang Y. "Collaborative Biosynthesis of Maleimide- and Succinimide-Containing Natural Products by Fungal Polyketide Megasyntases." *J. Am. Chem. Soc.*, **2017**, 139, 5317-5320.
5. Kishimoto S, **Sato M**, Tsunematsu Y, Watanabe K. "Evaluation of Biosynthetic Pathway and Engineered Biosynthesis of Alkaloids." *Molecules*, **2016**, 21, E1078.
6. **Sato M**, Winter J.M, Kishimoto S, Noguchi H, Tang Y, Watanabe K. "Collaborative Biosynthesis of Maleimide- and Succinimide-Containing Natural Products by Fungal Polyketide Megasyntases." *Org. Lett.*, **2016**, 18, 1446-1449.
7. **Sato M**, Yagishita F, Mino T, Uchiyama N, Patel A, Chooi Y.H, Goda Y, Xu W, Noguchi H,

Yamamoto T, Hotta K, Houk K.N, Tang Y, Watanabe K. "Involvement of Lipocalin-like CghA in Decalin-Forming Stereoselective Intramolecular [4+2] Cycloaddition."

ChemBioChem, 2015, 16, 2294-2298.

8. Winter J.M, Cascio D, Dietrich D, **Sato M**, Watanabe K, Sawaya M.R, Vederas J.C, Tang Y. "Biochemical and Structural Basis for Controlling Chemical Modularity in Fungal Polyketide Biosynthesis."
J. Am. Chem. Soc., 2015, 137, 9885-9893.
9. **Sato M**, Yamada H, Hotta K, Noguchi H, Watanabe K. "Identification and characterization of shanorellin biosynthetic pathway."
MedChemComm, 2015, 6, 425-430.
10. **Sato M**, Takahashi T, Ochi K, Matsuura H, Nabeta K, Takahashi K. "Overexpression of *RelA/SpoT* homologs, *PpRSH2a* and *PpRSH2b*, induces the growth suppression of the moss *P. patens*."
Biosci. Biotechnol. Biochem., 2015, 79, 36-44.
11. Hotta K, Keegan R.M, Ranganathan S, Fang M, Bibby J, Winn M.D, **Sato M**, Lian M, Watanabe K, Rigden D.J, Kim C.Y. "Conversion of a disulfide bond into a thioacetal group during echinomycin biosynthesis."
Angew. Chemie. Int. Ed. Engl., 2014, 86, 242-248.
12. Nakazawa T, Ishiuchi K, **Sato M**, Tsunematsu Y, Sugimoto S, Gotanda Y, Noguchi H, Hotta K, Watanabe K. "Targeted disruption of transcriptional regulators in *Chaetomium globosum* activates biosynthetic pathways and reveals transcriptional regulator-like behavior of aureonitol."
J. Am. Chem. Soc., 2013, 135, 13446-13455.
13. **Sato M**, Nakazawa T, Tsunematsu Y, Hotta K, Watanabe K. "Echinomycin biosynthesis."
Curr. Opin. Chem. Biol., 2013, 17, 537-545.
14. Winter J.M, **Sato M**, Sugimoto S, Chiou G, Garg N.K, Tang Y, Watanabe K. "Identification and characterization of the chaetoviridin and chaetomugilin gene cluster in *Chaetomium globosum* reveal dual functions of an iterative highly-reducing polyketide synthase."
J. Am. Chem. Soc., 2012, 134, 17900-17903.
15. Ishiuchi K, Nakazawa T, Ookuma T, Sugimoto T, **Sato M**, Tsunematsu Y, Ishikawa N, Noguchi H, Hotta, K, Moriya, H, Watanabe, K. "Establishing a new methodology for genome mining and biosynthesis of polyketides and peptides through yeast molecular genetics."
ChemBioChem, 2012, 13, 846-854.
16. Kitaoka N, Matsubara T, **Sato M**, Takahashi K, Wakuta S, Kawaide H, Matsui H, Nabeta K,

Matsuura H. "Arabidopsis CYP94B3 encodes jasmonyl-L-isoleucine 12-hydroxylase, a key enzyme in the oxidative catabolism of jasmonate."

Plant Cell Physiol., **2011**, 52, 1757-1765.

17. Hashimoto T, Takahashi K, **Sato M**, Bandara P.K.G.S.S, Nabeta K. "Cloning and characterization of an allene oxide cyclase, PpAOC3, in *Physcomitrella patens*."

Plant Growth Regulation, **2011**, 65, 239-245.

18. Saruwatari T, Praseuth A.P, **Sato M**, Torikai K, Noguchi H, Watanabe K. "A comprehensive overview on genomically directed assembly of aromatic polyketides and macrolide lactones using fungal megasynthases."

J. Antibiot., **2011**, 64, 9-17.

19. Bandara P.K.G.S.S, Takahashi K, **Sato M**, Matsuura H, Nabeta K. "Cloning and Functional Analysis of an Allene Oxide Synthase in *Physcomitrella patens*."

Biosci. Biotechnol. Biochem., **2009**, 73, 2356-2359.

20. **Sato M**, Takahashi K, Ochiai Y, Hosaka T, Ochi K, Nabeta K. "Bacterial alarmone, guanosine 5'-diphosphate 3'-diphosphate (ppGpp), predominantly binds the β ' subunit of plastid-encoded plastid RNA polymerase in chloroplasts."

ChemBioChem, **2009**, 10, 1227-1233.