【原著論文】
＜A03 班＞
江口 正

1. Kudo, F., Kitayama, Y., Miyanaga, A., Numakura, M., Eguchi, T., “Stepwise Post-glycosylation Modification of Sugar Moieties in Kanamycin Biosynthesis”, ***ChemBioChem***, *22*, 1668–1675 (2021).
2. Kudo, F., Takahashi, T., Miyanaga, A., Nakazawa, Y., Nishino, K., Hayakawa, Y., Kawamura, K., Ishikawa, F., Iwai, N., Nagumo, Y., Usui, T., Eguchi, T., “Mutational Biosynthesis of the Hitachimycin Analogs Regulated by β-Phenylalanine Selective Adenylation Enzyme HitB”, ***ACS Chem. Biol.***, *16*, 539-547 (2021).
3. Kudo, F., Mori, A., Koide, Yajima, R., Takeishi, R., Miyanaga, A., Eguchi, T., “One-pot Enzymatic Synthesis of 2-Deoxy-*scyllo*-inosose from D-Glucose and Polyphosphate”, ***Biosci. Biotechnol. Biochem.***, *85*, 108-114 (2021).
4. Maruyama, C., Chinone, Y., Sato, S., Kudo, F., Ohsawa, K., Kubota, J., Hashimoto, J., Kozone, I., Doi, T., Shin-ya, K., Eguchi, T., Hamano, Y., “*C*-Methylation of *S*-Adenosyl-L-methionine Occurs prior to Cyclopropanation in the Biosynthesis of a Bacterial 1-Amino-2-methylcyclopropanecarboxylic Acid (Norcoronamic acid) in a Bacterium”, ***Biomolecules***, *10*, E775 (2020).
5. Kudo, F., Kitayama, Y., Miyanaga, A., Hirayama, A., Eguchi, T., “Biochemical and Structural Analysis of a Dehydrogenase KanD2 and an Aminotransferase KanS2 that are Responsible for the Construction of the Kanosamine Moiety in Kanamycin Biosynthesis”, ***Biochemistry***, *59*, 1470-1473 (2020).
6. Miyanaga, A., Kurihara, S., Chisuga, T., Kudo, F., Eguchi, T., “Structural Characterization of Complex of Adenylation Domain and Carrier Protein by using Pantetheine Cross-linking Probe“, ***ACS Chem. Biol.***, *15*, 1808-1812 (2020).
7. Miyanaga, A., Takaku, R., Takaishi, M., Tashiro, E., Kudo, F., Eguchi, T., “Generation of Incednine Derivatives by Mutasynthesis”, ***J. Antibiot.***, *73*, 794-797 (2020).
8. Sato, S., Kudo, F., Rohmer, M., Eguchi, T., “Characterization of Radical SAM Adenosylhopane Synthase, HpnH, which Catalyzes the 5’-Deoxyadenosyl Radical Addition to Diploptene in the Biosynthesis of C_{35} Bacteriohopanepolyols”, ***Angew. Chem. Int. Ed.***, *59*, 237-241 (2020).
9. Kudo, F., Tsunoda, T., Yamaguchi, K., Miyanaga, A., Eguchi, T., “Stereochemistry in the Reaction of the *myo*-Inositol Phosphate Synthase Ortholog Ari2 during Aristeromycin Biosynthesis”, ***Biochemistry***, *58*, 5112-5116 (2019).
10. Kawasaki, D., Miyanaga, M., Chisuga, T., Kudo, F., Eguchi, T., “Functional and Structural Analyses of Split-Dehydratase Domain in the Biosynthesis of Macrolactam Polyketide Cremimycin”, ***Biochemistry***, *58*, 4799-4803 (2019).
11. Kawasaki, D., Chisuga, T., Miyanaga, M., Kudo, F., Eguchi, T., “Structural Analysis of Glycine Oxidase Homologue CmiS2 Reveals a Unique Substrate Recognition Mechanism for Formation of a β-Amino Acid Starter Unit in Cremimycin Biosynthesis”, ***Biochemistry***, *58*, 2706-2709 (2019).
12. Zhang, X., Chen, W., Gao, Q., Yang, J., Yan, X., Zhao, H., Su, L., Yang, M., Gao, C., Yao, Y., Inoki, K., Li, D., Shao, R., Wang, S., Sahoo, N., Kudo, F., Eguchi, T., Ruan, B., Xu, H., “Rapamycin Directly Activates Lysosomal Mucolipin TRP Channels Independent of mTOR”, ***PLOS Biol.***, *17*, e3000252 (2019).
13. Kudo, F., Zhang, J., Sato, S., Hirayama, A., Eguchi, T., “Functional Characterization of 3-Aminobenzoic Acid Adenylation Enzyme PctU and UDP-*N*-Acetyl-D-Glucosamine: 3-Aminobenzoyl-ACP Glycosyltransferase PctL in Pactamycin Biosynthesis”, ***ChemBioChem***, *20*, 2458-2462 (2019).
14. Ishikawa, F., Miyanaga, A., Kitayama, H., Nakamura, S., Nakanishi, I., Kudo, F., Eguchi, T., Tanabe, G., “An Engineered Aryl Acid Adenylation Domain with an Enlarged Substrate Binding Pocket”, ***Angew. Chem. Int. Ed.***, *58*, 6906-6910 (2019).

15. Cieślak, J., Miyanaga, A., Takaishi, M., Kudo, F., Eguchi, T., Functional and Structural Characterization of Adenylation Enzyme IdnL7 Involved in Incednine Biosynthesis, ***Acta Crystallogr F Struct. Biol. Commun.***, *F75*, 299-306 (2019).
16. Kudo, F., Miyanaga, A., Eguchi, T., "Structural Basis of Nonribosomal Codes for Nonproteinogenic Amino Acid Selective Adenylation Enzymes in the Biosynthesis of Natural Products", ***J. Ind. Microbiol. Biotechnol.***, *46*, 515-536 (2019).
17. Miyanaga, A., Kudo, F., Eguchi, T., "Protein–Protein Interactions in Polyketide Synthase–Nonribosomal Peptide Synthetase Hybrid Assembly Lines", ***Nat. Prod. Rep.***, *35*, 1185-1209 (2018).
18. Sato, S., Miyanaga, A., Kim, S-Y., Kuzuyama, T., Kudo, F., Eguchi, T., "Biochemical and Structural Analysis of FomD that Catalyzes the Hydrolysis of Cytidylyl (*S*)-2-Hydroxypropylphosphonate in Fosfomycin Biosynthesis", ***Biochemistry***, *57*, 4858-4866 (2018).
19. Sato, S., Kudo, F., Kuzuyama, T., Hammerschmidt, F., Eguchi, T., "*C*-Methylation Catalyzed by Fom3, a Cobalamin-Dependent Radical *S*-Adenosyl-L-methionine Enzyme in Fosfomycin Biosynthesis, Proceeds with Inversion of Configuration", ***Biochemistry***, *57*, 4963-4966 (2018).
20. Hirayama, A., Chu, J., Goto, E., Kudo, F., Eguchi, T., "NAD^+-Dependent Dehydrogenase PctP and PLP-Dependent Aminotransferase PctC Catalyze the First Post-glycosylation Modification of Sugar Intermediate in Pactamycin Biosynthesis", ***ChemBioChem***, *19*, 126-130 (2018).
21. Miyanaga, A., Ouchi, R., Ishikawa, F., Goto, E., Tanabe, G., Kudo, F., Eguchi, T., "Structural Basis of Protein–Protein Interactions between a *trans*-Acting Acyltransferase and Acyl Carrier Protein in Polyketide Disorazole Biosynthesis", ***J. Am. Chem. Soc.***, *140*, 7970-7978 (2018).
22. Watanabe, S., Ozawa, H., Kato, H., Nimura-Matsune, K., Hirayama, T., Kudo, F., Eguchi, T., Kakinuma, K., Yoshikawa, H., "Carbon-free Production of 2-Deoxy-scyllo-inosose (DOI) in Cyanobacterium *Synechococcus elongatus* PCC 7942", ***Biosci. Biotechnol. Biochem.***, *82*, 161-165 (2018).
23. Miyanaga, A., Takayanagi, R., Furuya, T., Kawamata, A., Itagaki, T., Iwabuchi, Y., Kanoh, N., Kudo, F., Eguchi, T., "Substrate Recognition by a Dual Functional P450 Monooxygenase Involved in FD-891 Biosynthesis", ***ChemBioChem***, 18, 2179-2187 (2017).
24. Cho, S.-H., Kim, S.-Y., Tomita, T., Shiraishi,T., Park, J.-S., Sato, S., Kudo, F., Eguchi, T., Funa, N., Nishiyama, M., Kuzuyama, T., "Fosfomycin Biosynthesis via Transient Cytidylylation of 2-Hydroxyethylphosphonate by the Bifunctional Fom1 Enzyme", ***ACS Chem. Biol.***, *12*, 2209-2215 (2017).
25. Sato, S., Kudo, F., Kim, S.-Y., Kuzuyama, T., Eguchi, T., "Methylcobalamin-Dependent Radical SAM C-Methyltransferase Fom3 Recognizes Cytidylyl-2-hydroxyethylphosphonate and Catalyzes the Nonstereoselective C-Methylation in Fosfomycin Biosynthesis", ***Biochemistry***, 56, 3519-3522 (2017).
26. Amagai, K., Ikeda, H., Hashimoto, J., Kozone, I., Izumikawa, M., Kudo, F., Eguchi, T., Nakamura, T., Osada, H., Takahashi, S., Shin-ya, K., "Identification of a Gene Cluster for Telomestatin Biosynthesis and Heterologous Expression Using a Specific Promotor in a Clean Host", ***Sci. Rep.***, *7*, 3382 (2017).
27. Chisuga, T., Miyanaga, A., Kudo, F., Eguchi, T., "Structural Aanalysis of the Dual Function Thioesterase SAV606 Unravels the Mechanism of Michael Addition of Glycine to an α,β-Unsaturated Thioester", ***J. Biol. Chem.***, *292*, 10926-10937 (2017).
28. Cieślak, J., Miyanaga, A., Takaku, R., Takaishi, M., Amagai, K., Kudo, F., Eguchi, T., "Biochemical Characterization and Structural Insight into Aliphatic β-Amino Acid Adenylation Enzymes IdnL1 and CmiS6", ***Proteins***, *85*, 1238-1247 (2017).
29. Kudo, F., Tokumitsu, T., Eguchi, T., "Substrate Specificity of Radical *S*-Adenosyl-L-methionine Dehydratase AprD4 and Its Partner Reductase AprD3 in the C3′-

Deoxygenation of Aminoglycoside Antibiotics", ***J. Antibiot.***, *70*, 423-428 (2017).

30. Miyanaga, A., Kudo, F., Eguchi, T., "Mechanisms of β-Amino Acid incorporation in Polyketide Macrolactam Biosynthesis", ***Curr. Opin. Chem. Biol.***, 35, 58-64 (2016).
31. Kudo, F., Tsunoda, T., Takashima, M., Eguchi, T., "Five-membered Cyclitol Phosphate Formation by a myo-Inositol Phosphate Synthase Ortholog in the Biosynthesis of the Carbocyclic Nucleoside Antibiotic Aristeromycin", ***ChemBioChem***, *17*, 2143-2148 (2016).

【総説・解説】
＜A03 班＞
江口 正

1. 工藤史貴，江口正，"生体内におけるラジカル反応：ラジカル酵素による炭素-炭素結合形成反応"，**化学**，*75*，64-65（2020）.
2. 佐藤秀亮，工藤史貴，江口正，"抗生物質ホスホマイシン生合成の全貌解明"，**バイオサイエンスとインダストリー**，*77*，378-379（2019）.
3. 宮永顕正，工藤史貴，江口正，"天然物生合成酵素によるキャリアータンパク質の認識機構"，**バイオサイエンスとインダストリー**，*74*，382-387（2017）.

【招待講演】
＜A03 班＞
江口 正

1. 2019/12/６　科学研究費補助金 新学術領域研究（研究領域提案型）生物合成系の再設計による複雑骨格機能分子の革新的創成科学、第５回公開シンポジウム、北里大学、東京、「非天然型天然物の生合成リデザインを指向する微生物二次代謝生合成系の精密機能解析 ～ポリケチドマクロラクタム抗生物質の生合成～」
2. 2019/7/3　第５４回天然物化学談話会、定山渓温泉、「１つの化合物から始まった２０年にわたる天然物化学研究」
3. 9th US-Japan Seminar on the Biosynthesis of Natural Products, May 30- Jun 4, 2017, UCLA Lake Arrowhead Conference Center, Lake Arrowhead, CA 92352, USA, "Radical SAM Enzymes involved in Natural Product Biosynthesis"
4. 2017/12/16　科学研究費補助金 新学術領域研究（研究領域提案型）生物合成系の再設計による複雑骨格機能分子の革新的創成科学、第３回公開シンポジウム、東京工業大学、東京、「非天然型天然物の生合成リデザインを指向する微生物二次代謝生合成系の精密機能解析 ～アミノグリコシド抗生物質修飾反応～」
5. 2017/1/28　科学研究費補助金 新学術領域研究（研究領域提案型）生物合成系の再設計による複雑骨格機能分子の革新的創成科学、第 1 回公開シンポジウム、東京大学、東京、「非天然型天然物の生合成リデザインを指向する微生物二次代謝生合成系の精密機能解析 ～マクロラクタム抗生物質の生合成マシナリーの解析～」

【受賞、表彰等】
＜A03 班＞
江口 正

1. 日本農芸化学会、2018 BBB 論文賞
2. Japan Antibiotics Research Association, The Journal of Antibiotics, Ōmura Award 2018