

平成22年度 研究業績

佐々木 誠 (東北大学大学院生命科学研究科、A02 班 公募班員)

1. 発表論文等 (査読付き論文, 著書, 総説等の発表状況)

- (1) Biosynthesis-Inspired Intramolecular Oxa-Conjugate Cyclization of α,β -Unsaturated Thioesters: Stereoselective Synthesis of 2,6-*cis*-Substituted Tetrahydropyrans
Fuwa, H.*; Noto, K.; Sasaki, M. *Org. Lett.* **2011**, *13*, 1820-1823.
- (2) A Convergent Synthesis of the C1–C16 Segment of Goniiodomin A via Palladium-Catalyzed Organostannane-Thioester Coupling
Fuwa, H.*; Nakajima, M.; Shi, J.; Takeda, Y.; Saito, T.; Sasaki, M.* *Org. Lett.* **2011**, *13*, 1106-1109.
- (3) Total Synthesis and Biological Assessment of (–)-Exiguolide and Analogues
Fuwa, H.*; Suzuki, T.; Kubo, H.; Yamori, T.; Sasaki, M. *Chem. Eur. J.* **2011**, *17*, 2678-2688.
- (4) Suppression of Colon Cancer Metastasis by Aes Through Inhibition of Notch Signaling
Sonoshita, M.; Aoki, M.; Fuwa, H.; Aoki, K.; Hosogi, H.; Sakai, Y.; Hashida, H.; Takabayashi, A.; Sasaki, M.; Robine, S.; Itoh, K.; Yoshioka, K.; Kakizaki, F.; Kitamura, T.; Oshima, M.; Taketo, M. M.* *Cancer Cell* **2011**, *19*, 125-137.
- (5) Asymmetric Synthesis and In Vivo Biological Inactivity of Right-Hand Terpenoid Fragment of Terpendole E
Oikawa, M.*; Hashimoto, R.; Sasaki, M. *Eur. J. Org. Chem.* **2011**, 538-546.
- (6) Studies toward the Total Synthesis of Gambieric Acids: Convergent Synthesis of the GHIJ-Ring Fragment Having a Side Chain
Tsubone, K.; Hashizume, K.; Fuwa, H.; Sasaki, M.* *Tetrahedron Lett.* **2011**, *51*, 548-551.
- (7) Synthetic Studies on Goniiodomin A: Convergent Synthesis of the C15–C36 Segment via Palladium-Catalyzed Organostannane-Thioester Coupling
Saito, T.; Fuwa, H.; Sasaki, M.* *Tetrahedron* **2011**, *66*, 429-445.
- (8) A Convergent Assembly of The Spiroacetal Subunit of Didemnaketal B
Fuwa, H.*; Noji, S.; Sasaki, M. *Org. Lett.* **2010**, *12*, 5354-5357.
- (9) An Enantioselective Total Synthesis of Aspergillides A and B
Fuwa, H.*; Yamaguchi, H.; Sasaki, M. *Tetrahedron* **2010**, *66*, 7492-7503.
- (10) Studies toward the Total Synthesis of Gambieric Acids: Stereocontrolled Synthesis of a DEFG-Ring Model Compound
Fuwa, H.*; Noji, S.; Sasaki, M.* *J. Org. Chem.* **2010**, *75*, 5072-5082.

- (11) A Concise Total Synthesis of (\pm)-Centrolobine
Fuwa, H.*; Noto, K.; Sasaki, M. *Heterocycles* **2010**, *82*, 641-647.
- (12) The Marine Polyether Gambierol Enhances Muscle Contraction and Blocks a Transient K^+ Current in Skeletal Muscle Cells
Schlumberger, S.; Ouanounou, G.; Girard, E.; Sasaki, M.; Fuwa, H.; Louzao, M. C.; Botana, L. M.; Benoit, E.; Molgó, J.* *Toxicon* **2010**, *55*, 785-791.
- (13) A Series Of Structurally Novel Heterotricyclic α -Amino-3-Hydroxyl-5-Methyl-4-Isoxazole-Propionate Receptor-Selective Antagonists
Gill, M. B.; Frausto, S.; Ikoma, M.; Sasaki, M.; Oikawa, M.; Sakai, R.; Swanson, G. T.* *Br. J. Pharmacol.* **2010**, *159*, 1417-1429.
- (14) Improved Synthesis and In Vitro/In Vivo Activities of Natural Product-Inspired, Artificial Glutamate Analogs
Oikawa, M.*; Ikoma, M.; Sasaki, M.; Gill, M. B.; Swanson, G. T.; Shimamoto, K.; Sakai, R. *Bioorg. Med. Chem.* **2010**, *18*, 3795-3804.
- (15) An Efficient Synthesis of 2,6-Disubstituted 2,3-Dihydro-4H-Pyran-4-Ones via Sonogashira Coupling of *p*-Toluenethiol Esters
Fuwa, H.*; Matsukida, S.; Sasaki, M. *Synlett* **2010**, 1239-1242.
- (16) A Unified Total Synthesis of Aspergillides A and B
Fuwa, H.*; Yamaguchi, H.; Sasaki, M. *Org. Lett.* **2010**, *12*, 1848-1851.
- (17) Stereoselective Synthesis of Substituted Tetrahydropyrans via Domino Olefin Cross-Metathesis/Intramolecular Oxa-Conjugate Cyclization
Fuwa, H.*; Noto, K.; Sasaki, M. *Org. Lett.* **2010**, *12*, 1636-1639.
- (18) A Concise Total Synthesis of (+)-Neopeltolide
Fuwa, H.*; Saito, A.; Sasaki, M. *Angew. Chem., Int. Ed.* **2010**, *49*, 3041-3044.
- (19) Calcium Oscillations Induced by Gambierol in Cerebellar Granule Cells
Alonso, E.; Vale, C.; Sasaki, M.; Fuwa, H.; Konno, Y.; Botana, L. M.* *J. Cell. Biochem.* **2010**, *109*, 497-508.
- (20) 平成22年度 理科年表 (国立天文台編, 丸善)
佐々木 誠 編集
生体物質 物 182-物 193, 生理活性物質 物 195-物 199.

2. 学会発表等（国内外の招待講演および国際会議での発表状況）

(1) 複雑な海洋天然物の全合成

佐々木 誠, 第 13 回生命化学研究会「分子で拓く生命化学」, 秋保, 2011.1.8 (招待講演) .

(2) Synthetic Studies on Polycavernoside A

Kasai, Y.; Sasaki, M. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(3) Studies toward the Total Synthesis of goniiodomin A: Convergent synthesis of the C12–C36 Fragment

Saito, T.; Fuwa, H.; Sasaki, M. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(4) Convergent Synthesis of the GHIJ-Ring Fragment of Gambieric Acids

Tsubone, K.; Hashizume, K.; Fuwa, H.; Sasaki, M. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(5) Convergent Synthesis of the A/BCD-Ring Fragment of Gambieric Acid A

Ishigai, K.; Fuwa, H.; Sasaki, M. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(6) Exploration of Skeletal Structure-Activity Relationships of Gambierol

Suga, Y.; Goto, T.; Ogata, Y.; Fuwa, H.; Sasaki, M. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(7) Studies toward the Total Synthesis of Didemnaketals

Noji, S.; Fuwa, H.; Sasaki, M. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(8) Practical Total Synthesis of (+)-Neopeltolide

Saito, A.; Fuwa, H.; Sasaki, M. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (ポスター発表) .

(9) Concise Total Synthesis of (+)-Neopeltolide

Fuwa, H.; Saito, A.; Sasaki, M. The 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem 2010), Honolulu, Hawaii, USA, 2010.12.15-20 (口頭発表) .

(10) 環状エーテル構造を含む海洋天然物の全合成

佐々木 誠, 第 27 回有機合成化学セミナー, 神戸, 2010.9.2-4 (招待講演).

3. 特許

(1) 抗癌作用を有するマクロリド化合物

国立大学法人東北大学, 不破春彦, 佐々木誠, 久保裕司, 鈴木隆哉
特願 2010-286945, 2010.12.24

4. 学会・シンポジウム等の開催状況

特になし

5. 受賞等

(1) 野地沙也加 (修士 2 年)

生命科学研究所長賞 東北大学大学院生命科学研究科, 2011.3.25

6. 新聞報道等

(1) 抗がん物質 合成成功 東北大グループ新薬開発へ応用も

不破春彦, 佐々木誠, 河北新報 3 面, 2011.2.7

7. 領域内の共同研究の準備・実施状況とその成果

特になし

8. その他特記事項

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