OKAYAMA UNIV.

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EDUCATION

2006 Tokyo University of Science, Tokyo, JAPAN
Ph.D. Pharmaceutical Science
2003 Tokyo University of Science, Tokyo, JAPAN
M.Sc. Chemistry
2001 Tokyo University of Science, Tokyo, JAPAN
B.Sc. Chemistry

EMPLOYMENT

10. 2008–present Assistant Professor, Okayama University

AWARDS

2014 The Best Teacher Award in Faculty of Engineering, Okayama University
2009 Lectureship Award of the 89th Annual Meeting of the Chemical Society of Japan
2009 Science and Technology Award of Okayama Foundation of Science and Technology
2009 KANEKA CORPORATION Award in Synthetic Organic Chemistry, Japan
2006 Yamada Science Foundation Award (Support for Long-term Visit).

RESEARCH EXPERIENCE

04. 2006–09. 2008 Postdoctoral Fellow, Boston College, MA, USA.
"Three-Component Ag-Catalyzed Enantioselective Vinylogous Mannich and Aza-Diels-Alder Reactions with Alkyl-Substituted Aldehydes"
Research Advisor: Professor Amir H. Hoveyda

04. 2003–03. 2006 Graduate Student Research (Ph.D. course),
Tokyo University of Science, Tokyo, JAPAN
"Development of Catalytic and β-Selective Mannosylation Reactions and their Application to the Synthesis of Pentasaccharide Core of N-Glycans"
Research Advisor: Professor Teruaki Mukaiyama

04. 2001–03. 2003 Graduate Student Research (M.Sc. course)
Tokyo University of Science, Tokyo, JAPAN
"Development of New Glycosyl Donors for Stereoselective Sialylation, Glycosylation, and Mannosylation Reactions"
Research Advisor: Professor Teruaki Mukaiyama

04. 2000–03. 2001 Under Graduate Research, (B.Sc. course)
Tokyo University of Science, Tokyo, JAPAN
"Protic Acid Catalyzed Stereoselective Glycosylation Using Glycosyl Fluorides"
Research Advisor: Professor Teruaki Mukaiyama

RESEARCH INTERESTS

Asymmetric synthesis
Organocatalyst (especially chiral nucleophilic catalysts)
Multicomponent reaction
Natural product synthesis
Oligosaccharide synthesis

PROFESSIONAL AFFILIATIONS

The American Chemical Society
The Chemical Society of Japan
The Society of Synthetic Organic Chemistry, Japan,
The Pharmaceutical Society of Japan
The Kinki Chemical Society Japan

PUBLICATIONS

(22) **Remarkable Enhancement of the Rate of the Intramolecular Morita-Baylis-Hillman Reaction by the Combination of a Nucleophilic Catalyst and 1,3-Diphenyl-2-thiourea**
Hiroki Mandai,*, Keita Shimowaki, Koichi Mitsudo, and Seiji Suga,**Asian J. Org. Chem,* **2014**, *3*, 437-441.

(21) **Electro-reductive Halogen-Deuterium Exchange and Methylation of Aryl Halides in Acetonitrile**
Koichi Mitsudo,* Takahiro Okada, Shuichi Shimohara, Hiroki Mandai, Seiji Suga*
Electrochemistry, **2013**, *81*, 362-364.

(20) **Recyclable palladium catalyst in PEG/CH_3CN biphasic system for electro-oxidative wacker-type Reaction**
Koichi Mitsudo,* Satoshi Fukunaga, Tomoya Fujita, Hiroki Mandai, Seiji Suga, and Hideo Tanaka*
Electrochemistry, **2013**, *81*, 347-349.

(19) **Synthesis of Hexa(furan-2-yl)benzenes and Their π-Extended Derivatives**
Koichi Mitsudo,* Jyunji Harada, Yo Tanaka, Hiroki Mandai, Chie Nishioka, Hideo Tanaka, Atsushi Wakamiya, Yasujiro Murata, and Seiji Suga*
J. Org. Chem., **2013**, *78*, 2763–2768
Highlited in *Synfacts*, **2013**, *9*, 615.

(18) **Kinetic Resolution of Secondary Alcohols by Chiral DMAP Derivatives Prepared by the Ugi Multicomponent Reaction**
Hiroki Mandai,* Shunsuke Irie, Masaru Akehi, Kazunobu Yuri, Masaaki Yoden, Koichi Mitsudo, and Seiji Suga*
Heterocycles, **2013**, *87*, 329-340.

(17) **Site-Selective Sequential Coupling Reactions Controlled by "Electrochemical Reaction Site Switching": a Straightforward Approach to 1,4-Bis(diaryl)buta-1,3-diynes**
Koichi Mitsudo,* Natsuyo Kamimoto, Hiroki Murakami, Hiroki Mandai, Atsushi Wakamiya, Yasujiro Murata, Seiji Suga*
Org. Biomol. Chem. **2012**, *10*, 9562–9569.

(16) **Kinetic Resolution of Secondary Alcohols by the Combination of a Chiral Brønsted Acid, DABCO, and Acetyl Chloride**
Hiroki Mandai,* Kyouta Murota, Koichi Mitsudo, Seiji Suga*
Org. Lett. **2012**, 14, 3486-3489.
Highlited in *Synfacts*, **2012**, *8*, 1031.; *Org. Process Res. Dev.*, **2012**, *16*, 1459-1467.

(15) **Studies on the Petasis Reaction of 2-Pyridinecarbaldehyde Derivatives and Its Products**
Hiroki Mandai,* Kyouta Murota, Seiji Suga*
Heterocycles **2012**, *85*, 1655-1669.

(14) **Synthesis of Nitrogen-Bridged Terthiophenes by Tandem Buchwald-Hartwig Coupling and Their Properties**
Koichi Mitsudo,* Shuichi Shimohara, Jun Mizoguchi, Hiroki Mandai, Seiji Suga*
Org. Lett. **2012**, *14*, 2702–2705.

(13) **Synthetic Studies of DMAP Derivatives by Diastereoselective Ugi Reaction**
Hiroki Mandai,* Shunsuke Irie, Koichi Mitsudo and Seiji Suga*
Molecules, **2011**, *16*, 8815-8832.

(12) **Kumada-Tamao-Corriu Coupling Using N-Heterocyclic Carbene Ligands Bearing Pyridyl and Ethylenedioxyl Moieties**
Koichi Mitsudo,* Yuta Doi, Syunsuke Sakamoto, Hiroki Murakami, Hiroki Mandai, and Seiji Suga*
Chem. Lett. **2011**, *40*, 936-938.

(11) **Induction of MMP-13 Expression in Bone-metastasizing Cancer Cells by Type I Collagen through Integrin α1β1 and α2β1-p38 MAPK Signaling**
Soichiro Ibaragi, Tsuyoshi Shimo,* Nur Mohammad Monsur Hassan, Sachiko Isowa, Naito Kurio, Hiroki Mandai, Shinichi Kodama and Akira Sasaki
Anticancer Res, **2011**, *31*, 1307-1313.

(10) **An improved protocol for Petasis reaction of 2-pyridinecarbaldehydes**
Hiroki Mandai,* **Kyouta Murota and Takashi Sakai**
Tetrahedron Lett. **2010**, *51*, 4779-4782.

(9) **Three-Component Ag-Catalyzed Enantioselective Vinylogous Mannich and Aza-Diels-Alder Reactions with Alkyl-Substituted Aldehydes**
Hiroki Mandai, Kyoko Mandai, Marc L. Snapper,* and Amir H. Hoveyda*
J. Am. Chem. Soc. **2008**, *130*, 17961–17969.

(8) **6-Nitro-2-benzothiazolyl α-mannoside: A Highly Efficient Mannosyl Donor in Constructing βMan(1→4)GlcN Linkage and Its Application to the Synthesis of Pentasaccharide Core of *N*-Glycans**
Hiroki Mandai and Teruaki Mukaiyama*
Bull. Chem. Soc. Jpn. **2006**, *79*, 479-488.

(7) **Efficient and Concise Synthesis of βMan(1→4)GlucN linkage by using 6-Nitro-2-benzothiazolyl α-mannoside**
Hiroki Mandai and Teruaki Mukaiyama*
Chem. Lett. **2005**, *34*, 702-703.

(6) **6-Nitro-2-benzothiazolyl α-Glucoside and α-Mannoside in β-Selective Glycosylations**
Takashi Hashihayata, Hiroki Mandai, and Teruaki Mukaiyama*
Bull. Chem. Soc. Jpn. **2004**, *74*, 169-178.

(5) **Catalytic and β-Stereoselective Mannosylation of Several Acceptors with Mannosyl 6-Nitro-2-benzothiazoate**
Takashi Hashihayata, Hiroki Mandai, and Teruaki Mukaiyama*
Chem. Lett. **2003**, *32*, 442-443.

(4) **Glucosyl 6-Nitro-2-benzothiazoate. A Highly Efficient Donor for β-Stereoselective Glycosylation**
Teruaki Mukaiyama,* Takashi Hashihayata, and Hiroki Mandai
Chem. Lett. **2003**, *32*, 340-341.

(3) **A Catalytic and α-Selective Sialylation Using Novel 5-Azide Sialyl Fluoride**
Teruaki Mukaiyama,* Hiroki Mandai, and Hideki Jona
Chem. Lett. **2002**, *31*, 1182-1183.

(2) **Protic Acid Catalyzed Stereoselective Glycosylation Using Glycosyl Fluorides**
Hideki Jona, Hiroki Mandai, Warinthorn Chavasiri, Kazuya Takeuchi, and Teruaki Mukaiyama*
Bull. Chem. Soc. Jpn. **2002**, *75*, 291-309.

(1) **A Catalytic and Stereoselective Glycosylation with Glucopyranosyl Fluoride by Using Protic Acids**
Hideki Jona, Hiroki Mandai, and Teruaki Mukaiyama*
Chem. Lett. **2001**, *30*, 426-427.