

## **Kosuke Dodo**

Senior Research Scientist

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### **Education:**

- 1995-1999 Faculty of Pharmaceutical Sciences, The University of Tokyo (BS)  
1999-2001 Graduate School of Pharmaceutical Sciences, The University of Tokyo (MS)  
2001-2004 Graduate School of Engineering, Tohoku University (Ph.D.)

### **Professional Career:**

- 2004-2007 Special Postdoctoral Researcher; RIKEN  
2007-2008 Assistant Professor; The Institute of Molecular and Cellular Biosciences,  
The University of Tokyo  
2008-2013 Research Scientist; Synthetic Organic Chemistry Laboratory, RIKEN  
2008-2013 Group Leader; ERATO Sodeoka Live Cell Chemistry Project  
2014-present Senior Research Scientist; Synthetic Organic Chemistry Laboratory, RIKEN CPR  
2015-present Senior Research Scientist; Catalysis and Integrated Research Group, RIKEN CSRS

### **Research Field**

Chemical Biology, Medicinal Chemistry, Synthetic Organic Chemistry, Biological Chemistry

### **Research Interests**

- 1) Development and mechanistic study of cell death inhibitors & inducers
- 2) Raman imaging for visualization of small molecules
- 3) Chemical methodologies for identification of binding proteins & sites of bioactive compounds

### **Selected Publications**

- 1) Indolylmaleimide Derivative IM-17 Shows Cardioprotective Effects in Ischemia-Reperfusion Injury  
**Kosuke Dodo**, Tadashi Shimizu, Jun Sasamori, Kazuyuki Aihara, Naoki Terayama, Shuhei Nakao, Katsuya Iuchi, Masahiro Takahashi, Mikiko Sodeoka  
*ACS Med. Chem. Lett.* **2018**, *9*, 182-187.
- 2) Hyperoxidation of Ether-Linked Phospholipids Accelerates Neutrophil Extracellular Trap Formation  
Satoshi Yotsumoto, Yuito Muroi, Tatsuya Chiba, Rio Ohmura, Maki Yoneyama, Megumi Magarisawa, **Kosuke Dodo**, Naoki Terayama, Mikiko Sodeoka, Ryohei Aoyagi, Makoto Arita, Satoko Arakawa, Shigeomi Shimizu, Masato Tanaka  
*Sci. Rep.* **2017**, *7* (1), 16026.

- 3) Specific Fluorescence Labeling of Target Protein by Using Ligand–4-Azidophthalimide Conjugate  
Kosuke Chiba, Miwako Asanuma, Minoru Ishikawa, Yuichi Hashimoto, **Kosuke Dodo**, Mikiko Sodeoka, Takao Yamaguchi  
*Chem. Commun.* **2017**, *53*, 8751-8754.
- 4) Crystal structural characterization reveals novel oligomeric interactions of human voltage-dependent anion channel 1  
Toshiaki Hosaka, Masateru Okazaki, Tomomi Kimura-Someya, Yoshiko Ishizuka-Katsura, Kaori Ito, Shigeyuki Yokoyama, **Kosuke Dodo**, Mikiko Sodeoka, Mikako Shirouzu  
*Protein Science* **2017**, *26*, 1749-1758.
- 5) Noncanonical Function of a Small-Molecular Virulence Factor Coronatine against Plant Immunity: An In Vivo Raman Imaging Approach  
Minoru Ueda, Syusuke Egoshi, **Kosuke Dodo**, Yasuhiro Ishimaru, Hiroyuki Yamakoshi, Takeshi Nakano, Yousuke Takaoka, Shinya Tsukiji, Mikiko Sodeoka  
*ACS Central Science* **2017**, *3*, 462-472.
- 6) Alkyne-Tag SERS Screening and Identification of Small-Molecule-Binding Sites in Protein  
Jun Ando, Miwako Asanuma, **Kosuke Dodo**, Hiroyuki Yamakoshi, Satoshi Kawata, Katsumasa Fujita, Mikiko Sodeoka  
*J. Am. Chem. Soc.* **2016**, *138*, 13901-13910.
- 7) Structure-activity relationship study of 3-amino-2-indolylactam derivatives: Development of inhibitors of oxidative stress-induced necrosis  
**Kosuke Dodo**, Kenji Hayamizu, Tadashi Shimizu, Mikiko Sodeoka  
*Chem. Pharm. Bull.* **2016**, *64*, 886-898.
- 8) VDAC3 gating is activated by suppression of disulfide-bond formation between the N-terminal region and the bottom of the pore  
Masateru Okazaki, Katsue Kurabayashi, Miwako Asanuma, Yohei Saito, **Kosuke Dodo**, Mikiko Sodeoka  
*Biochim. Biophys. Acta* **2015**, *1848*, 3188-3196.
- 9) Unique features of chiral palladium enolates derived from  $\beta$ -ketoamide: Structure and catalytic asymmetric Michael and fluorination reactions  
Kenji Hayamizu, Naoki Terayama, Daisuke Hashizume, **Kosuke Dodo**, and Mikiko Sodeoka  
*Tetrahedron* **2015**, *71*, 6594-6601.
- 10) Sphingomyelin distribution in lipid rafts of artificial monolayer membranes visualized by Raman microscopy  
Jun Ando, Masanao Kinoshita, Jin Cui, Hiroyuki Yamakoshi, **Kosuke Dodo**, Katsumasa Fujita, Michio Murata, and Mikiko Sodeoka  
*Proc. Nat. Acad. Sci.* **2015**, *112*, 4558-4563.
- 11) Structure–activity relationships of benzhydrol derivatives based on 10-acetoxychavicol acetate (ACA) and their inhibitory activities on multiple myeloma cell growth via inactivation of the NF-kappaB pathway

Takashi Misawa, **Kosuke Dodo**, Minoru Ishikawa, Yuichi Hashimoto, Morihiko Sagawa, Masahiro Kizaki, Hiroshi Aoyama  
*Bioorg. Med. Chem.* **2015**, *23*, 2241-2246.

- 12) A sensitive and specific Raman probe based on bisarylbutadiyne for live cell imaging of mitochondria  
Hiroyuki Yamakoshi, Almar Palonpon, **Kosuke Dodo**, Jun Ando, Satoshi Kawata, Katsumasa Fujita, and Mikiko Sodeoka  
*Bioorg. Med. Chem. Lett.* **2015**, *25*, 664-667.
- 13) A “Catch-and-Release” Protocol for Alkyne-Tagged Molecules Based on a Resin-Bound Cobalt Complex for Peptide Enrichment in Aqueous Media  
Ayako Miyazaki, Miwako Asanuma, **Kosuke Dodo**, Hiromichi Egami, and Mikiko Sodeoka  
*Chem. Eur. J.* **2014**, *20*, 8116-8128.
- 14) Turn-ON fluorescent affinity labeling using a small bifunctional O-nitrobenzoxadiazole unit  
Takao Yamaguchi, Miwako Asanuma, Shuichi Nakanishi, Yohei Saito, Masateru Okazaki, **Kosuke Dodo** and Mikiko Sodeoka  
*Chem. Sci.* **2014**, *5*, 1021-1029.
- 15) Simultaneous imaging of protonated and deprotonated carbonylcyanide p-trifluoromethoxyphenylhydrazone in live cells by Raman microscopy  
Hiroyuki Yamakoshi, Almar F Palonpon, **Kosuke Dodo**, Jun Ando, Satoshi Kawata, Katsumasa Fujita, and Mikiko Sodeoka  
*Chem. Comm.* **2014**, *50*, 1341-1343.
- 16) Epidithiodiketopiperazine as a pharmacophore for protein lysine methyltransferase G9a inhibitors: Reducing cytotoxicity by structural simplification  
Shinya Fujishiro, **Kosuke Dodo**, Eriko Iwasa, Yuou Teng, Yoshihiro Sohtome, Yoshitaka Hamashima, Akihiro Ito, Minoru Yoshida, and Mikiko Sodeoka  
*Bioorg. Med. Chem. Lett.* **2013**, *23*, 733-736.
- 17) Alkyne-tag Raman imaging for visualization of mobile small molecules in live cells  
Hiroyuki Yamakoshi, **Kosuke Dodo**, Almar Flotildes Palonpon, Jun Ando, Katsumasa Fujita, Satoshi Kawata, and Mikiko Sodeoka  
*J. Am. Chem. Soc.* **2012**, *134*, 20681-20689.
- 18) Catch & release of alkyne-tagged molecules in water by polymer-supported cobalt complex  
Hiromichi Egami, Shinji Kamisuki, **Kosuke Dodo**, Miwako Asanuma, Yoshitaka Hamashima, and Mikiko Sodeoka  
*Org. Biomol. Chem.* **2011**, *9*, 7667-7670.
- 19) Imaging of EdU, an alkyne-tagged cell proliferation probe, by Raman microscopy  
Hiroyuki Yamakoshi, **Kosuke Dodo**, Masaya Okada, Jun Ando, Almar Palonpon, Katsumasa Fujita, Satoshi Kawata, and Mikiko Sodeoka  
*J. Am. Chem. Soc.* **2011**, *133*, 6102-6105.
- 20) Development of selective inhibitors of necrosis  
Mikiko Sodeoka and **Kosuke Dodo**

*Chem. Rec.*, **2010**, *10*, 308-314.

- 21) Unnatural enantiomer of chaetocin shows strong apoptosis-inducing activity through caspase-8/caspase-3 activation

Yuou Teng, Katsuya Iuchi, Eriko Iwasa, Shinya Fujishiro, Yoshitaka Hamashima, **Kosuke Dodo**, and Mikiko Sodeoka

*Bioorg. Med. Chem. Lett.*, **2010**, *20*, 5085-5088.

- 22) Antiproliferative and apoptosis-inducing activities of alkyl gallate and gallamide derivatives related to (-)-epigallocatechin gallate

**Kosuke Dodo**, Taro Minato, Tomomi Noguchi-Yachide, Masami Suganuma, and Yuichi Hashimoto

*Bioorg. Med. Chem.*, **2008**, *16*, 7975-7982.

- 23) Inhibition of hydrogen peroxide-induced necrotic cell death with 3-amino-2-indolylmaleimide derivatives

**Kosuke Dodo**, Miho Katoh, Tadashi Shimizu, Masahiro Takahashi, and Mikiko Sodeoka

*Bioorg. Med. Chem. Lett.*, **2005**, *15*, 3114-3118.

### **Honors**

2012 Research Project Award, The Society of Synthetic Organic Chemistry, Japan

2018 Konica Minolta Imaging Science Encouragement Award, Konica Minolta Science and Technology Foundation, Japan