Japan

IST-P-01

Motonari Uesugi

Kyoto University

Professor

uesugi@scl.kyoto-u.ac.jp

Website	**https://www.scl.kyoto-u.ac.jp/~uesugi/index.php**
Social Media Channel	**https://twitter.com/MotonariU**
Research Field(s)	**Chemical biology**

Academic Career

B.S., 1990, Kyoto University; Ph.D., 1995, Kyoto University (advisor: Yukio Sugiura); Postdoctoral Training, 1995-1998, Harvard University (advisor: Gregory L. Verdine); Assistant Professor, 1998-2005, Baylor College of Medicine; Associate Professor (Tenured), 2005-2009, Baylor College of Medicine; Professor, 2005-present, Kyoto University

Selected Publications

1. Chemoproteomic Identification of Blue-Light-Damaged Proteins. Toh, K., et al. J. Am. Chem. Soc. 144(44), 20171–20176 (2022)

2. Magnetic Control of Cells by Chemical Fabrication of Melanin. Nishio, K., et al. J. Am. Chem. Soc. 144(37), 16720–16725 (2022)

3. Discovery of a phase-separating small molecule that selectively sequesters tubulin in cells. Ado, G., et al. Chemical Science 13, 5760-5766 (2022)

4. Chemical Genetics Reveals a Role of Squalene Synthase in TGFβ Signaling and Cardiomyogenesis. Takemoto, Y., et al. Angew. Chem. Int. Ed. 60(40), 21824-21831 (2021)

5. Discovery of Self-Assembling Small Molecules as Vaccine Adjuvants. Jin, S., et al. Angew. Chem. Int. Ed. 60(2), 961-969 (2021)

6. Discovery of a Small-Molecule-Dependent Photolytic Peptide. Takemoto, Y., et al. J. Am. Chem. Soc. 142(3), 1142-1146 (2020)

7. Chemoproteomic Profiling of a Pharmacophore-Focused Chemical Library. Punzalan, L., et al. Cell Chemical Biology 27(6), 708–718 (2020)

8. Vitamin D metabolite, 25-Hydroxyvitamin D, regulates lipid metabolism by inducing degradation of SREBP/SCAP. Asano, L., et al. Cell Chem Biol. 24, 207-217 (2017)

9. A small molecule that represses translation of G-quadruplex-containing mRNA. Katsuda, Y., et al. J. Am. Chem. Soc. 138, 9037-9040 (2016)

10. A potent and site-selective agonist of TRPA1. Takaya, J., et al. J. Am. Chem. Soc. 137, 15859–15864 (2015)

Japan

IST-P-02

Kazuya Kikuchi

Osaka University

Professor

kkikuchi@mls.eng.osaka-u.ac.jp

Website	**https://www-molpro-mls.eng.osaka-u.ac.jp/English/indexeng/indexENG.html**
Social Media Channel	
Research Field(s)	**Chemical biology**

Academic Career

B.S., 1988, Univ. of Tokyo; Ph.D., 1994, Univ. Of Tokyo (advisor: Masaaki Hirobe); Postdoctoral Training, 1994-1995, UCSD (advisor: Roger Y. Tsien), 1995-1996, the Scripps Research Institute (advisor: Donald Hilvert); Assistant Professor, 1997-2000, Univ. Of Tokyo; Associate Professor, 2000-2005, Univ. of Tokyo; Professor, 2005-present, Osaka University; Distinguished Professor, 2017-present, Osaka University

Selected Publications

1. Konishi, Y., Minoshima, M., Fujihara, K., Uchihashi, T. *Kikuchi, K. Elastic Polymer-coated Nanoparticles with Fast Clearance for 19FMR Imaging. Angew. Chem. Int. Ed., 62, e202308565 (2023).

2. Minoshima, M., Umeno, T., Kadooka, K., Roux, M., Yamada, N. *Kikuchi, K. Development of a Versatile Protein Labeling Tool for Live-Cell Imaging Using Fluorescent ß-Lactamase Inhibitors. Angew. Chem. Int. Ed., 62, e202301704 (2023).

3. Imoto, T., Minoshima, M., Yokoyama, T., Emery, B., Bull, S.D., Bito, H. *Kikuchi, K. A Photodeactivatable Antagonist for Controlling CREB Dependent Gene Expression. ACS Cent. Sci., 6, 1813-1818 (2020).

4. Hashimoto, R., Minoshima, M., Kikuta, J., Yari, S., Bull, S.D., Ishii, M., *Kikuchi, K. An Acid Activatable Fluorescence Probe for Imaging Osteocytic Bone Resorption Activity in Deep Bone Cavities. Angew. Chem. Int. Ed., 59, 20996-21000 (2020).

5. Minoshima, M., Kikuta, J., Omori, Y., Seno, S., Suehara, R., Maeda, H., Matsuda, H., Ishii, M., *Kikuchi, K. In vivo Multicolor Imaging with Fluorescent Probes Revealed the Dynamics and Function of Osteoclast Proton Pumps. ACS. Cent. Sci. 5, 1059-1066 (2019).

6. Hori, Y., *Kikuchi, K. Chemical Tools with Fluorescence Switches for Verifying Epigenetic Modifications. Acc. Chem. Res., 52, 2849-2857 (2019).

7. Hori, Y., Otomura, N., Nishida, A., Nishiura, M., *Kikuchi, K. Synthetic-Molecule/Protein Hybrid Probe with Fluorogenic Switch for Live-Cell Imaging of DNA Methylation. J. Am. Chem. Sci. 140, 1686-1690 (2018).

8. Akazawa, K., Sugihara, F., Nakamura, T., Matsushita, H., Mukai, H., Akimoto, R., Minoshima, M., Mizukami., S., *Kikuchi, K. Perfluorocarbon-Based 19F MRI Nanoprobes for In Vivo Multicolor Imaging. Angew. Chem. Int. Ed. 130, 16984-16989 (2018).

9. Sato, R., Kozuka, J., Ueda, M., Mishima, R., Kumagai, Y., Yoshimura, A., Minoshima, M., Mizukami, S., *Kikuchi, K. Intracellular Protein Labeling Probes for Multicolor Single-molecule Imaging of Immune Receptor-adaptor Molecular Dynamics. J. Am. Chem. Sci. 139, 17397-17404 (2017).

10. Hirayama, S., Hori, Y., Benedek, Z., Suzuki, T., *Kikuchi, K. Fluorogenic probes reveal a role of GLUT4 N-glycosylation in intracellular trafficking. Nat. Chem. Biol. 12, 853-859 (2016).

11. Maeda, H., Kowada, T., Kikuta, J., Furuya, M., Shirazaki, M., Mizukami, S., Ishii, M., *Kikuchi, K. Real-time intravital imaging of pH variation associated with osteoclast activity. Nat. Chem. Biol. 12, 579-585 (2016).

Japan

IST-P-05

Takeaki Ozawa

The University of Tokyo

Professor

ozawa@chem.s.u-tokyo.ac.jp

Website	https://analyt.chem.s.u-tokyo.ac.jp
Social Media Channel	https://twitter.com/ozawalab_analyt
Research Field(s)	Imaging, Optogenetics, Screening

Academic Career

Takeaki Ozawa received his PhD in 1998 from the University of Tokyo, before spending five years as a research associate and two years as a lecturer at the University. In 2005, he took an independent position as an associate professor at the Institute for Molecular Science, Japan for two years. He is currently a professor at the Department of Chemistry, School of Science, the University of Tokyo.

Selected Publications

1. Optogenetic decoding of Akt2-regulated cellular metabolic signaling pathways in skeletal muscle cells using transomics analysis. G. Kawamura, et al. Science Signaling, 16, eabn0782 (2023).
2. Class 3 PI3K participates in nuclear gene transcription and co-activates the circadian clock to promote de novo purine synthesis. C. Alkhoury, et al. Nature Cell Biol., 25, 975-988 (2023).
3. Lactate biosensors for spectrally and spatially multiplexed fluorescence imaging. Y. Nasu, et al., Nature Commun., 14, 6598 (2023).
4. Mechanistic insights into cancer drug resistance through optogenetic PI3K signaling hyperactivation. Y. Ueda, et al. Cell Chem. Biol. 29, 1576-1587 (2022).
5. N-Heterocyclic carbene-based C-centered Au(I)-Ag(I) clusters with intense phosphorescence and the ligand-specific, organelle-selective translocation in cells. Z. Lei, et al. Nature Commun., 13, 4288 (2022).
6. Castanospermine suppresses CD44 ectodomain cleavage as revealed by transmembrane bioluminescent sensors. N. Noda and T. Ozawa, J. Cell Sci., 135, jcs259314 (2022).
7. Discovery of a Phase-Separating Small Molecule That Selectively Sequesters Tubulin in Cells. G. Ado, et al., Chem. Sci., 13, 5760-5766 (2022).

Japan

IST-P-06

Hideko Nagasawa

Gifu Pharmaceutical University

Professor

hnagasawa@gifu-pu.ac.jp

Website	https://yakka-gifu-pu.jp/
Social Media Channel	https://twitter.com/aramitama
Research Field(s)	Medicinal chemistry, Anticancer drug, BNCT

Academic Career

B.S., 1983, Gifu Pharmaceutical University; Ph.D., 1988, Kyoto University (advisor: Kaoru Fuji); Assistant Professor, 1988-1997, School of Medicine, Keio University; Associate Professor, 1997-2006, Faculty of Engineering, The University of Tokushima; Visiting Associate Professor, 2004-2005, The Johns Hopkins University School of Medicine (Gregg Semenza); Professor, 2006-present, Gifu Pharmaceutical University

Selected Publications

1. Kariya, T., Hasegawa, H., Udagawa, T., Inada, Y., Nishiyama, K., Tsuji, M., Hirayama, T., Suzutani, T., Kato, N., Nagano S., and Nagasawa, H., Elucidation of the stereocontrol mechanisms of the chemical and biosynthetic intramolecular Diels–Alder cycloaddition for the formation of bioactive decalins, RSC Adv., 2023,13, 27828-27838.

2. Tsuji, M., Taira, H.., Udagawa, T., Aoki, T., Hirayama, T., and Nagasawa, H., Synthesis and photochemical properties of caged peroxides for photocontrol of cellular oxidative stress, Chem. Commun., 2023,59, 6706-6709

3. Kawai, K.; Hirayama, T.; Imai, H.; Murakami, T.; Inden, M.; Hozumi, I.; Nagasawa, H., Molecular Imaging of Labile Heme in Living Cells Using a Small Molecule Fluorescent Probe. J. Am. Chem. Soc. 2022, 144 (9), 3793-3803.

4. Sakai, T.; Matsuo, Y.; Okuda, K.; Hirota, K.; Tsuji, M.; Hirayama, T.; Nagasawa, H., Development of antitumor biguanides targeting energy metabolism and stress responses in the tumor microenvironment. Sci. Rep. 2021, 11 (1), 4852.

5. Mukaimine, A.; Hirayama, T.; Nagasawa, H., Asymmetric bismuth-rhodamines as an activatable fluorogenic photosensitizer. Org Biomol Chem 2021, 19 (16), 3611-3619.

6. Koike, K.; Nagano, M.; Ebihara, M.; Hirayama, T.; Tsuji, M.; Suga, H.; Nagasawa, H., Design, Synthesis, and Conformation-Activity Study of Unnatural Bridged Bicyclic Depsipeptides as Highly Potent Hypoxia Inducible Factor-1 Inhibitors and Antitumor Agents. J. Med. Chem. 2020, 63 (8), 4022-4046.

7. Isono, A.; Tsuji, M.; Sanada, Y.; Matsushita, A.; Masunaga, S.; Hirayama, T.; Nagasawa, H., Design, Synthesis, and Evaluation of Lipopeptide Conjugates of Mercaptoundecahydrododecaborate for Boron Neutron Capture Therapy. ChemMedChem 2019, 14 (8), 823-832.

8. Hirayama, T.; Inden, M.; Tsuboi, H.; Niwa, M.; Uchida, Y.; Naka, Y.; Hozumi, I.; Nagasawa, H., A Golgi-targeting fluorescent probe for labile Fe(ii) to reveal an abnormal cellular iron distribution induced by dysfunction of VPS35. Chem Sci 2019, 10 (5), 1514-1521.

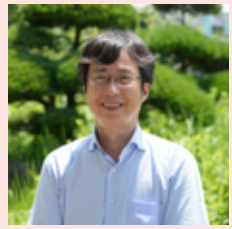
9. Niwa, M.; Hirayama, T.; Oomoto, I.; Wang, D. O.; Nagasawa, H., Fe(II) Ion Release during Endocytotic Uptake of Iron Visualized by a Membrane-Anchoring Fe(II) Fluorescent Probe. ACS Chem. Biol. 2018, 13 (7), 1853-1861.

10. Okuda, K.; Okabe, Y.; Kadonosono, T.; Ueno, T.; Youssif, B. G. M.; Kizaka-Kondoh, S.; Nagasawa, H., 2-Nitroimidazole-Tricarbocyanine Conjugate as a Near-Infrared Fluorescent Probe for in Vivo Imaging of Tumor Hypoxia. Bioconjugate Chem. 2012, 23 (3), 324-329.

Japan

IST-P-08

Takayoshi Suzuki



Osaka University

Professor

tkyssuzuki@sanken.osaka-u.ac.jp

Website	**https://www.sanken.osaka-u.ac.jp/labs/cmc/en/**
Social Media Channel	
Research Field(s)	**Medicinal chemistry, Organic chemistry, Chemical biology**

Academic Career

B.S., 1995, University of Tokyo; Ph.D., 2005, University of Tokyo; Visiting Investigator, 2007-2008, Scripps Research Institute; Assistant Professor, 2003-2009, Nagoya City University; Lecturer, 2009-2011, Nagoya City University; Professor, 2011-2019, Kyoto Prefectural University of Medicine; Professor, 2019-present, Osaka University.

Selected Publications

1. Discrete prefrontal neuronal circuits determine repeated stress-induced behavioral phenotypes in male mice. Li, H., et al. Neuron, 112, in press (2024) (doi: 10.1016/j.neuron.2023.12.004.)

2. Discovery of Selective Histone Deacetylase 1 and 2 Inhibitors: Screening of a Focused Library Constructed by Click Chemistry, Kinetic Binding Analysis, and Biological Evaluation. Itoh, Y., et al. J. Med. Chem., 66, 15171-15188 (2023)

3. Lysine-specific histone demethylase 1A (KDM1A/LSD1) inhibition attenuates DNA double strand break repair and augments efficacy of temozolomide in glioblastoma. Alejo, S., et al. Neuro Oncol., 25, 1249-1261 (2023)

4. Evolution of Slow-Binding Inhibitors Targeting Histone Deacetylase Isoforms. Mukherjee, A., et al. J. Med. Chem., 66, 11672-11700 (2023)

5. Recent progress on small molecules targeting epigenetic complexes. Itoh, Y., et al. Curr. Opin. Chem. Biol., 67, 102130 (2022)

6. Synthetic RNA Modulators in Drug Discovery. Zamani, F., Suzuki, T. J. Med. Chem., 64, 7110-7155 (2021)

7. Identification of Potent and Selective Inhibitors of Fat Mass Obesity Associated Protein Using a Fragment-Merging Approach. Prakash, M., et al. J. Med. Chem., 64, 15810-15824 (2021)

8. Cross-Species Chromatin Interactomes Drive Heterochromatin, Enhancer, and Transcriptional Rewiring in Epstein-Barr Virus Positive Gastric Adenocarcinoma. Okabe, A. et al. Nat. Genet., 52, 919-930 (2021)

9. Metalloprotein-Catalyzed Click Reaction for In Situ Generation of a Potent Inhibitor. Miyake, Y. et al. ACS Catal., 10, 5383-5392 (2020)

10. A metabolic pathway-oriented screening targeting S-adenosyl-L-methionine reveals the epigenetic remodeling activities of naturally occurring catechols. Ogihara, S., et al. J. Am. Chem. Soc., 142, 21-26 (2020)

Japan

IST-P-09

Kenji Monde

Hokkaido University

Professor

kmonde@sci.hokudai.ac.jp

Website	https://altair.sci.hokudai.ac.jp/infchb/index.html
Social Media Channel	https://www.facebook.com/profile.php?id=100011435296382
Research Field(s)	**Sphingolipid Chemical Biology, Chiral Chemistry, SWIR (Short wavelength infrared) Imaging**

Academic Career

B.S., 1984, Hokkaido University; Ph.D., 1993, Hokkaido University (advisor: Prof. T. Masamune, Prof. M. Takasugi); 1988-1993, Research Associate, Hokkaido University; 1994-1996, Postdoctoral Fellow, Columbia University (Professor K. Nakanishi); 1996-2000, Assistant Professor, Tohoku University (Professor N. Harada); 2001-2010, Associate Professor, Hokkaido University; 2010-Present, Professor, Hokkaido University; 2013-present Director of Frontier Research Center; 2019-2023 Visiting Senior Research Fellow of RIKEN; 2019–2023 Dean, Faculty of Advanced Life Science; 2023–Present Advisor to the president, Hokkaido University

Selected Publications

1. **Stereochemistry of Sphingolipids in Ganglioside GM3 Enhances Recovery of Nervous Functionality. Koolath, S., et al. ACS Med. Chem. Lett., 14, 1237–1241 (2023)**
2. **Shortwave-infrared (SWIR) emitting annexin V for high-contrast fluorescence molecular imaging of tumor apoptosis in living mice. Swamy, M. M. M., et al. RSC Advances, 12, 19632-19639 (2022)**
3. **Design and Synthesis of Ligand-Tag Exchangeable Photoaffinity Probe Utilizing Nosyl Chemistry, Saaidin, S. A., et al. Eur. J. Org. Chem., 2019, 7563-7567 (2019)**
4. **Malabaricone C as Natural Sphingomyelin Synthase Inhibitor against Diet-Induced Obesity and Its Lipid Metabolism in Mice, Othman, M. A., et al. ACS Med. Chem. Lett., 10, 1154-1158 (2019)**
5. **Preparation of Carbodiimides with One-Handed Axial Chirality, Taniguchi, T., et al. J. Am. Chem. Soc., 140, 15577-15581 (2018)**
6. **Structure-inspired design of a sphingolipid mimic sphingosine-1-phosphate receptor agonist from a naturally occurring sphingomyelin synthase inhibitor. Swamy, M. M. M., et al. Chem. Commun., 54, 12758 - 12761, (2018)**
7. **Facile Chemoselective Strategy toward Capturing Sphingoid Bases by Unique Glutaraldehyde Functionalized Resin. Gowda, S. B., et al. ACS Omega, 3, 753–759 (2018)**
8. **What Is the True Structure of D609, a Widely Used Lipid Related Enzyme Inhibitor? Kato, M., et al. Org. Lett., 18, 768-771 (2016)**
9. **Stereochemical Analysis of Glycerophospholipids by Vibrational Circular Dichroism. Taniguchi, T., et al. J. Am. Chem. Soc., 137, 12191–12194 (2015)**
10. **The Exciton Chirality Method in Vibrational Circular Dichroism. Taniguchi, T., Monde, K. J. Am. Chem. Soc. 134, 3695-3698 (2012)**

Japan

IST-P-10

Yasubumi Sakakibara

Keio University

Professor

yasu@bio.keio.ac.jp

Website	**https://www.st.keio.ac.jp/en/tprofile/bio/sakakibara.html**
Social Media Channel	
Research Field(s)	**Bioinformatics, Chemoinformatics, Metagenomics, Artificial intelligence**

Academic Career

B.S., 1983, M.S., 1985, Tokyo Institute of Technology; Dr Sci., 1991, Tokyo Institute of Technology; Researcher, 1985-1996, Fujitsu Laboratories Ltd; Research Associate, 1992-1993, University of California, Santa Cruz; Associate Professor, 1996-2002, Tokyo Denki University; Associate Professor, 2002-2005, Keio University; Professor, 2005-present, Keio University; Specially Appointed Professor, 2023-present, Kitasato University. His research interests include bioinformatics, chemoinformatics, metagenomics, and artificial intelligence.

Selected Publications

1. Ochiai T, Inukai T, Akiyama M, Furui K, Ohue M, Matsumori N, Inuki S, Uesugi M, Sunazuka T, Kikuchi K, Kakeya H, and Sakakibara Y. Variational autoencoder-based chemical latent space for large molecular structures with 3D complexity. Commun Chem, 6: 249 (2023).

2. Akiyama M and Sakakibara Y. Informative RNA base embedding for RNA structural alignment and clustering by deep representation learning. NAR Genom Bioinform, 4: lqac012 (2022).

3. Uehara M, Inoue T; Sakakibara Y. Intraintestinal analysis of the functional activity of microbiomes and its application to the common marmoset intestine. mSystems, 25: e0052022 (2022).

4. Watanabe N, Ohnuki Y, Sakakibara Y. Deep learning integration of molecular and interactome data for protein-compound interaction prediction. J Cheminform, 13(1): 36 (2021).

5. Jayakumar V, Sakakibara Y. Comprehensive evaluation of non-hybrid genome assembly tools for third-generation PacBio long-read sequence data. Brief Bioinform, 3 (2017).

6. Hoshino, A., Jayakumar, V. et al., Sakakibara, Y. Genome sequence and analysis of the Japanese morning glory, Ipomoea nil. Nature Commun, 7:13295 (2016).

7. Afiahayati, Sato, K., Sakakibara, Y. MetaVelvet-SL: An extension of the Velvet assembler to a de novo metagenomic assembler utilizing supervised learning. DNA Research, 22(1): 69-77 (2015).

8. Namiki, T., Hachiya, T., Tanaka, H., Sakakibara, Y. MetaVelvet: an extension of Velvet assembler to de novo metagenome assembly from short sequence reads. Nucleic Acids Res, 40(20): e155 (2012).

9. Sakakibara, Y., Hachiya, T., Uchida, M., Nagamine, N., Sugawara, Y., Yokota, M., Nakamura, M., Popendorf, K., Komori, T., Sato, K. COPICAT: A software system for predicting interactions between proteins and chemical compounds. Bioinformatics, 28(5): 1276-1277 (2012).

10. Nagamine N., Shirakawa, T., Minato, Y., Torii, K., Kobayashi, H., Imoto, M., and Sakakibara, Y. Integrating statistical predictions and experimental verifications for enhancing protein-chemical interaction predictions in virtual screening. PLoS Comput Biol, 5(6): e1000397 (2009).

Japan

IST-P-11

Hideaki Kakeya

Kyoto Univerisity

Professor

hkakeya@pharm.kyoto-u.ac.jp

Website	**https://www.pharm.kyoto-u.ac.jp/sc-molsci/indexen.html**
Research Field(s)	**Natural Product Chemistry, Chemical Biology, Medicinal Chemistry**

Academic Career

B.S., 1989, Keio University; Ph.D., 1994, Keio University (advisor: Kazuo Umezawa); 1994-2007, Research Scientist/Senior Scientist, RIKEN; 2007-present, Kyoto University.
1995, Visiting Scientist, U.C. Davis; 1998-2000, Visiting Scientist, M.I.T.; 2009, Visiting Professor, University of Louis Pasteur, Strasbourg; 2007-present, Visiting scientist, RIKEN.
Current Research Fields: chemical biology, natural product chemistry, medicinal chemistry

Selected Publications

1. Pan, Y. et al. Bisabosqual A: a novel asparagine synthetase inhibitor suppressing the proliferation and migration of human non-small cell lung cancer A549 cells. Eur. J. Pharmacol. 960, 176156 (2023). [press release]

2. Pan, C. et al. Amoxetamide A, a new anoikis inducer, produced by combined-culture of Amycolatopsis sp. and Tsukamurella pulmonis. J. Antibiot. doi: 10.1038/s41429-023-00668-1, in press (2023).

3. Ozaki, M. et al. Separation of amyloid β fragment peptides with racemised and isomerised aspartic acid residues using an original chiral resolution labeling reagent. Analyst, 148, 1209-1213 (2023). [selected as Hot Articles & Cover Art]

4. Ikeda, H. et al. Identification of the polyether ionophore lenoremycin through a new screening strategy targeting cancer stem cells. J. Antibiot. 75, 671-678 (2022). [selected as a highlight article.] [press release]

5. Abe, T. et al. Pharmacologic characterization of TBP1901, a prodrug form of curcumin, and CRISPR-Cas9 screen for therapeutic targets of curcumin. Eur. J. Pharmacol. 935, 175321 (2022). [press release]

6. Kuranaga, T. et al. Highly sensitive labeling reagents for scarce natural products. ACS Chem. Biol. 15, 2499-2506 (2020). [Press release]

7. Sugiyama, R. et al. Chemical interaction of cryptic actinomycete metabolite 5-alkyl-1,2,3,4-tetrahydroquinolines through aggregate formation. Sugiyama, R. et al. Angew. Chem. Int. Ed. 58, 13486-13491 (2019). [Press release]

8. Kakeya, H. Natural products-prompted chemical biology: Phenotypic screening and a new platform for target identification. Kakeya, H. Nat. Prod. Rep. 33, 648-654 (2016)

9. Goto, Y.et al. UCHL1 provides diagnostic and antimetastatic strategies due to its deubiquitinating effect on HIF-1α. Goto, Y. et al. Nat. Commun. 6, 6153 (2015). [Press release]

10. Nishimura, S. et al. Marine antifungal theonelamides target 3b-hydroxysterol to activate Rho1 signaling. Nishimura, S. et al. Nat. Chem. Biol. 6, 519-526 (2010). [Press release]

Japan

IST-P-12

Yohei Sohma

Wakayama Medical University

Professor

ysohma@wakayama-med.ac.jp

Website	**https://www.wakayama-med.ac.jp/pharm/yakuhinkagaku/**
Social Media Channel	
Research Field(s)	**Peptide, Amyloid, Catalyst**

Academic Career

Ph.D., 2005, Kyoto Pharmaceutical University (advisor: Yoshiaki Kiso); Research Associate, 2006-2009, University of Chicago (advisor: Stephen B. H. Kent); Assistant Professor, 2009-2012, Kyoto Pharmaceutical University; Lecturer & Group Leader, 2012-2021, University of Tokyo; Professor, 2021-present, Wakayama Medical University
My research interests are exploring chemical transformation methods for peptides and proteins, and applying them to new modalities of drug development.

Selected Publications

1. Attenuation of α-synuclein aggregation by catalytic photo-oxygenation. Iwai, A. et al., Chem. Commun., 2023, 59, 5745-5748.

2. (Review paper) Chemical catalyst-promoted photooxygenation of amyloid proteins. Sohma, Y. et al., Org. Biomol. Chem., 2021, 19, 10017-10029.

3. Photo-oxygenation by a biocompatible catalyst reduces amyloid-β levels in Alzheimer's disease mice. Ozawa, S. et al., Brain, 2021, awab058.

4. Catalytic photooxygenation degrades brain Aβ in vivo. Nagashima, N. et al., Sci. Adv., 2021, 7, eabc9750.

5. Design, synthesis, and properties of a chemically-tethered amyloid-β segment trimer resistant to inter-trimer mis-aggregation. Shinoda, K. et al., J. Org. Chem., 2020, 85, 1635-1643.

6. Nanoscale View of Amyloid Photodynamic Damage. Bondia, P. et al., J. Am. Chem. Soc., 2020, 142, 922-930.

7. Photo-oxygenation inhibits tau amyloid formation. Suzuki, T. et al., Chem. Commun., 2019, 55, 6165-6168.

8. Near-infrared photoactivatable oxygenation catalysts of amyloid peptide. Ni, J. et al., Chem, 2018, 4, 807-820.

9. Switchable photooxygenation catalysts that sense higher-order amyloid structures. Taniguchi, A. et al., Nat. Chem. 2016, 8, 974.

10. (Review paper) Medicinal chemistry focusing on aggregation of amyloid-β. Sohma, Y., Chem. Pharm. Bull., 2016, 64, 1.

Japan

IST-P-13

Hiroyuki Nakamura

Tokyo Institute of Technology

Professor

hiro@res.titech.ac.jp

Website https://syn.res.titech.ac.jp/

Research Field(s) B-N heterocycles, Proximity labeling, Boron neutron capture therapy

Academic Career

B.S., 1991, Tohoku University, Ph.D., 1996, Tohoku University (advisor: Prof. Yoshinori Yamamoto); Assistant Professor, 1995–1997, Kyushu University, 1997-2002, Tohoku University; Visiting Assistant Professor, 2000-2001, University of Pittsburgh (advisor: Prof. Dennis P. Curran); Associate Professor, 2002-2006, Gakushuin University; Professor, 2006-2013, Gakushuin University; Professor, 2013-present; Tokyo Institute of Technology.

Selected Publications

1. Methylene Insertion into Nitrogen-Heteroatom σ-Bonds of 1,2-Azoles via a Zinc Carbenoid: An Alternative Tool for Skeletal Editing. M. Tsuda, T. Morita, Y. Morita, J. Takaya, H. Nakamura, Adv. Sci., 2307563 (2023).

2. Efficient neutron capture therapy of glioblastoma with pteroyl-closo-dodecaborate-conjugated 4-(p-iodophenyl)butyric acid (PBC-IP). K. Nishimura, H. Kashiwagi, T. Morita, Y. Fukuo, S. Okada, K. Miura, Y. Matsumoto, Y. Sugawara, T. Enomoto, M. Suzuki, K. Nakai, S. Kawabata, H. Nakamura, J. Control. Release, 360, 249-259 (2023).

3. Enantioselective Synthesis of Oxazaborolidines by Palladium-Catalyzed N–H/B–H Double Activation of 1,2-Azaborines. T. Morita, H. Murakami, Y. Asawa, H. Nakamura, Angew. Chem. Int. Ed., 61(7), e202113558 (2022).

4. Proximity Histidine Labeling by Umpolung Strategy Using Singlet Oxygen. K. Nakane, S. Sato, T. Niwa, M. Tsushima, S. Tomoshige, H. Taguchi, M. Ishikawa, H. Nakamura, J. Am. Chem. Soc. 143(20), 7726–7731 (2021).

5. Selective Purification and Chemical Labeling of Target Protein on Ruthenium Photocatalyst-Immobilized Affinity Beads M. Tsushima, S. Sato, H. Nakamura, Chem. Commun. 53, 4838 – 4841 (2017)

6. Generation of 4-Isoxazolyl Anion Species: Facile Access to Multifunctionalized Isoxazoles. T. Morita, S. Fuse, H. Nakamura, Angew. Chem. Int. Ed. 55(43), 13580-13584 (2016).

7. Total Synthesis of Feglymycin based on a Linear/Convergent Hybrid Approach using Micro-flow Amide Bond Formation. S. Fuse, Y. Mifune, H. Nakamura, H. Tanaka, Nature Commun. 7, 13491 (2016).

8. Synthesis of 2-Indolyltetrahydroquinolines via Zinc(II)-Catalyzed Intramolecular Hydroarylation-Redox Cross-Dehydrogenative Coupling of N-Propargylanilines with Indoles. G. Li and H. Nakamura, Angew. Chem. Int. Ed. 55(23), 6758-6761 (2016)

9. Maleimide-Functionalized closo-Dodecaborate Albumin Conjugates (MID-AC): The Unique Ligation at both Cysteine and Lysine Residues Enabling to Efficient Boron Delivery to Tumor for Neutron Capture Therapy. S. Kikuchi, D. Kanoh, S. Sato, Y. Sakurai, M. Suzuki, H. Nakamura, J. Control. Release, 237, 160–167 (2016).

10. Ligand-directed Selective Protein Modification Based on Local Single Electron Transfer Catalysis. S. Sato and H. Nakamura, Angew. Chem. Int. Ed. 52, 8681-8684 (2013).

Japan

IST-P-14

Hiroshi Abe

Nagoya University

Professor

abe.hiroshi.p4@f.mail.nagoya-u.ac.jp

Website	http://biochemistry.chem.nagoya-u.ac.jp/index-e/
Social Media Channel	https://www.facebook.com/hiroshi.abe.585112
Research Field(s)	RNA therapeutics, mRNA, Nucleic acid chemistry

Academic Career

Professor Hiroshi Abe, raised up in Hokkaido, Japan, got BS from Hokkaido University (1991-1996), MS from Hokkaido University(1996-1998), PhD from Hokkaido University (1998-2001). Postdoc Associate in Massachusetts Institute Technology (2001-2002). Postdoc Associate in Stanford University (2002-2005). Senior Research Scientist, RIKEN Advanced Science Institute (2005-2013). Associate Professor, Faculty of Pharmaceutical Sciences, Hokkaido University (2013-2015). Professor, Department of Chemistry, Graduate School of Science, Nagoya University (2015-current).

Selected Publications

1. Inagaki, M. & Abe, H. Cap analogs with a hydrophobic photocleavable tag enable facile purification of fully capped mRNA with various cap structures. Nat Commun. 2023 14(1), 2657.

2. Abe, N. & Abe, H. Complete Chemical Synthesis of Minimal Messenger RNA by Efficient Chemical Capping Reaction. ACS Chem. Biol. 2022, 17(6), 1308-1314.

3. Kawaguchi, D. & Abe, H. Phosphorothioate modification of mRNA accelerates the rate of translation initiation to provide more efficient protein synthesis. Angewandte Chemie International Edition 2020, 59(40), 17403-17407.

4. Shu, Z. & Abe. H. Disulfide-Unit Conjugation Enables Ultrafast Cytosolic Internalization of Antisense DNA and siRNA. Angewandte Chemie International Edition 2019, 131(20), 6683-6687.

5. Abe, N. & Abe. H. Rolling circle translation of circular RNA in living human cells. Scientific reports 2015, 5(1), 1-9.

Japan

IST-P-15

Shinya Hagihara

RIKEN

Team leader

hagi@riken.jp

Website http://molecular-bioregulation.riken.jp/index.html

Research Field(s) Plant chemical biology

Academic Career

B.S., 1998, Kyoto University; Ph.D., 2003, Kyoto University (advisor: Isao Saito); Postdoctoral Training, 2003-2007, RIKEN (advisor: Yukishige Ito); Postdoctoral Training, 2007-2008, University of Geneva (advisor: Stefan Matile); Assistant Professor, 2008-2013, Tohoku University, Associate Professor. 2013-2018, Nagoya University, Team Leader, 2018-present, RIKEN

Selected Publications

1. Development of 1,8-naphthalimide dyes for rapid imaging of subcellular compartments in plants. Kusano, S., et al. Chem. Commun., 58, 1685-1688 (2022)
2. Development of potent inhibitors for strigolactone receptor DWARF 14 Yoshimura, M., et al. Chem. Commun., 56, 14917-14919 (2020)
3. A super-sensitive auxin-inducible degron system with an engineered auxin-TIR1 pair Nishimura, K., et al. Nucleic Acids Res. 48, e108 (2020)
4. A Super Strong Engineered Auxin-TIR1 Pair. Yamada, R., et al. Plant. Cell. Physiol., 59, 1538-1544 (2018)
5. Rapid and reversible root growth inhibition by TIR1 auxin signalling. Fendrych, M., et al. Nat. Plants, 4, 453-459 (2018)
6. Chemical hijacking of auxin signaling with an engineered auxin-TIR1 pair. Uchida, N., et al. Nat. Chem. Biol., 14, 299-307 (2018)
7. Discovery of Shoot Branching Regulator Targeting Strigolactone Receptor DWARF14. Yoshimura, M., et al. ACS Cent. Sci., 4, 230-234 (2018)
8. Probing strigolactone receptors in Striga hermonthica with fluorescence. Tsuchiya, Y., et al. Science, 349, 864-868 (2015)

Japan

IST-P-16

Go Hirai

Kyushu University

Professor

gohirai@phar.kyushu-u.ac.jp

Website	**https://gohirailab.com/**
Social Media Channel	**https://twitter.com/HiraiLab_chem**
Research Field(s)	**Organic chemistry, Natural products, Carbohydrate chemistry**

Academic Career

B.S.: Tohoku University (1997, Prof. Masahiro Hirama)
Ph.D.: Tohoku University (2002, Prof. Masahiro Hirama)
Assistant Professor@Tohoku University (2002-2004. Prof. Mikiko Sodeoka)
Research Scientist@RIKEN (2004-2016, Prof. Mikiko Sodeoka)
Professor@Kyushu University (2016-)

Selected Publications

1. Photoredox-catalyzed protecting-group-free C-glycosylation with glycosyl sulfinate via the Giese reaction, Miura, T. et al. Chem. Commun., 59, 8564-8567 (2023).

2. Ligand-controlled Stereoselective Synthesis and Biological Activities of 2-Exomethylene Pseudo-glycoconjugates: Discovery of Mincle-Selective Ligands, Ikazaki, T. et al. Angew. Chem. Int. Ed., 62, e202302569 (2023).

3. Synthesis and biological activity of ganglioside GM3 analogues with a (S)-CHF-Sialoside linkage and an alkyne tag, Ota, E. et al. Glycoconj. J., 40, 333-341 (2023).

4. Modification of C3-position of 2,3-Dehydro-2-Deoxy-N-Acetylneuraminic Acid with An Acetic Acid Equivalent, Uezono, K. et al. Chem. Lett. 52, 71-74 (2023).

5. Transition-Metal-Free β-Selective C-Glycosylation of β-Glycosyl Boronate via Stereoretentive 1,2-Migration, Yasutomi, H. et al. Synlett 34, 347-352 (2022).

6. Effect of Alkynyl Group on Reactivity in Photoaffinity Labeling with 2-Thienyl-Substituted α-Ketoamide, Moriyama, T. et al. Chem. Eur. J. 28, e2021039 (2022).

7. Preparation of Oxysterols by C–H Oxidation of Dibromocholestane with Ru(Bpga) Catalyst, Fujii, Y. et al. Molecules 21, 225 (2022).

8. β-Glycosyl Trifluoroborates as Precursors for Direct α-C-Glycosylation: Synthesis of 2-Deoxy-α-C-glycosides, Takeda, D. et al. Org. Lett. 23, 1940-1944 (2021).

9. Ganglioside GM3 Analogues Containing Monofluoromethylene-linked Sialoside: Synthesis, Stereochemical Effects, Conformational Behavior, and Biological Activities, Hirai, G. et al. JACS Au, 1, 137-146 (2021).

10. Synthesis of DFGH-ring derivatives of physalins via one-pot construction of GH-ring and evaluation of their NF-κB inhibitory activity, Yoritate, M. et al. Org. Lett. 22, 8877-8881 (2020).

South Korea

IST-P-20

Young-Tae Chang

Pohang University of Science and Technology (POSTECH)

Professor

ytchang@postech.ac.kr

Website	**http://ytchang.postech.ac.kr/**
Social Media Channel	
Research Field(s)	**Fluorescence bioimaging, Chemical cellomics, Molecule based aging study**

Academic Career

B.S. 1991, Ph.D. 1997, POSTECH (advisor: Sung-Kee Chung); Postdoctoral Training, 1997-2000, UC Berkeley & Scripps (advisor: Peter Schultz); Assistant Professor, 2000-2005, NYU, Chemistry; Associate Professor, 2005-2007, NYU; Associate Professor, 2007-2012, NUS, Chemistry; Professor, 2012-2017, NUS, Chemistry; Professor, Lab head of Bioimaging Probe Development, Singapore Bioimaging Consortium, A*STAR, 2007-2017, 2017-present, POSTECH, Chemistry.

Selected Publications

1. Development of a Fluorescent Probe for M2 Macrophages via Gating-Oriented Live-Cell Distinction, Cho, H.; Kwon, H. Y.; Lee, S. H.; Lee, H. G.; Kang, N. Y.*; Chang, Y. T.* J. Am. Chem. Soc. 2023, 145, 2951-2957.

2. Visualizing inflammation with an M1 macrophage selective probe via GLUT1 as the gating target, Cho, H.; Kwon, H. Y.; Sharma, A.; Lee, S. H.; Liu, X.; Miyamoto, N.; Kim, J. J., Im, S. H.; Kang, N. Y.; Chang, Y. T .* Nat. Commun. 2022, 13:5974.

3. A SLC35C2 transporter-targeting fluorescent probe for the selective detection of B lymphocytes identified by SLC-CRISPRi and unbiased fluorescence library screening, Gao, M.; Lee, S. H.; Das, R. K.; Kwon, H. Y.; Kim, H. S.; Chang, Y. T.* Angew. Chem. Int. Ed. Engl. 2022, 61, 202202095.

4. Fluorescent probe strategy for live cell distinction, Liu, X.; Chang, Y. T.* Chem. Soc. Rev. 2022, 51, 1573-1591.

5. Neutrophil Selective Fluorescent Probe Development through Metabolism-Oriented Live-cell Distinction, Gao, M.; Lee, S. H.; Park, S. H.; Ciaramicoli, L. M.; Kwon, H. Y.; Cho, H.; Jeong, J.; Chang, Y. T.* Angew. Chem. Int. Ed. Engl. 2021, 60, 23742-23749.

6. Lipid-Oriented Live-Cell Distinction of B and T Lymphocytes, Kwon, H. Y.; Kumar Das, R.; Jung, G. T.; Lee, H. G.; Lee, S. H.; Berry, S. N.; Tan, J. K. S.; Park, S.; Yang, J. S.; Park, S.; Baek, K.; Park, K. M.; Lee, J. W.; Choi, Y. K.; Kim, K. H.; Kim, S.; Kim, K. P.; Kang, N. Y.*; Kim, K.*; Chang, Y. T.* J. Am. Chem. Soc. 2021, 143, 5836-5844.

7. Multimodal imaging probe development for pancreatic β-cells: from fluorescence to PET, Kang, N. Y.; Lee, J.; Lee, S. H.; Song, I. H.; Hwang, Y. H.; Kim, M. J.; Phue, W. H.; Agrawalla, B. K.; Wan, S. Y. D.; Lalic, J.; Park, S. J.; Kim, J. J.; Kwon, H. Y.; Im, S. H.; Bae, M. A.; Ahn, J. H.; Lim, C. S.; Teo, A. K. K.; Park, S.; Kim, S. E.; Lee, B. C.; Lee, D. Y.*; Chang, Y. T.* J. Am. Chem. Soc. 2020, 142, 3430-3439.

South Korea

IST-P-21

Ja-Hyoung Ryu

Ulsan National Institute of Science and Technology (UNIST)

Professor

jhryu@unist.ac.kr

Website	**https://leegroup.chembiol.re.kr/**
Research Field(s)	**Supramolecular chemistry, Synthetic peptide assembly, Nano-medicine**

Academic Career

B.S., 2000, Yonsei University; M.S., 2002, Yonsei University; Ph.D., 2006, Yonsei University (advisor: Myongsoo Lee); Postdoctoral Training, 2007-2011, University of Massachusettes Amherst (advisor: S. Thayumanavan); Assistant Professor, 2012-2016, Ulsan National Institute of Science and Technology; Associate Professor, 2017-2022, Ulsan National Institute of Science and Technology; Full Professor, 2022-present, Ulsan National Institute of Science and Technology;

Selected Publications

1. Supramolecular Senolytics via Intracellular Oligomerization of Peptides in Response to Elevated Reactive Oxygen Species Levels in Aging Cells. Ryu, J.-H., et al. J. Am. Chem. Soc. 145, 21991-22008 (2023)

2. Intra-Lysosomal Peptides Assembly for the High Selectivity Index against Cancer, Ryu, J.-H., et al. J. Am. Soc. Chem. 145, 18414-18431 (2023)

3. Spatiotemporal Self-Assembly of Peptide Amphiphile by Carbonic Anhydrase IX-Targeting Induces Cancer-Lysosomal Membrane Disruption. Ryu, J.-H., et al. JACS Au 2, 2539-2547(2022)

4. Intramitochondrial Co-assembly between ATP and Nucleopeptide Induces Cancer Cell Apoptosis. Ryu, J.-H., et al. Chem. Sci. 13, 6197-6204 (2022)

5. Stimuli-Responsive Adaptive Nanotoxin to Directly Penetrate the Cellular Membrane by Molecular Folding and Unfolding. Ryu, J.-H., et al. J.Am. Chem. Soc. 144, 5503-5526 (2022)

6. Intramitochondrial Disulfide Polymerization Controls Cancer Cell Fate. Ryu, J.-H., et al. ACS Nano 15, 14492- 14058 (2021)

7. Heterochiral Assembly of Amphiphilic Peptides inside the Mitochondria for Supramolecular Cancer Therapeutics. Ryu, J.-H., et al. ACS Nano. 13, 11022-11033 (2019)

8. Cloaking Nanoparticles with Protein Corona Shield for Targeted Drug Delivery. Ryu, J.-H., et al. Nat. Commun. 9, 4548 (2018)

9. Cancer Mitochondria-Targeted Photodynamic Therapy with Supramolecular Assembly of HA and Near IR Cyanine Dye. Ryu, J.-H., et al. Chem. Sci. 8, 8351-8356 (2017)

10. Mitochondria localization induced self-assembly of peptide amphiphiles for cellular dysfunction, Ryu, J.-H., et al. Nat. Commun. 8, 26 (2017)

South Korea

IST-P-22

Jun-Seok Lee

Korea University

Associate Professor

junseoklee@korea.ac.kr

Website	https://leegroup.chembiol.re.kr
Social Media Channel	https://twitter.com/junseoklee?lang=en
Research Field(s)	**Chemical proteomics, Fluorescent sensors, Host-pathogen interaction**

Academic Career

B.S., 2005, POSTECH;
Ph.D., 2009, New York University (advisor: Young-Tae Chang);
2010-2021 Principal/Senior/Research Scientist, Korea Institute of Science and Technology;
2013-2021, Associate & Assistant Professor, KIST-School UST;
2021-present, Associate Professor, Korea University College of Medicine

Selected Publications

1. Fluorescent Phenotyping of Blood Cells Using a Differential Sensing Strategy: Differentiating Physiological Aging Stages and Neuro-degenerative Disease Drugs. Lee, J. H., et al. Chem. Eur. J. in press (2023)

2. Recent advances in enzyme-activated NIR fluorescent probes for biological applications. Jeong, H. et al., Trends Anal. Chem. 168, 117335 (2023)

3. Multifunctional Photo-Cross-linking Probes: From Target Protein Searching to Imaging Applications. Kozoriz. K. et al., Acc. Chem. Res. 56, 1, 25-36 (2023).

4. Orthogonally-Tunable and ER-Targeting Fluorophores Detect Avian Influenza Virus Early Infection. Kang, T. et al., Nat. Common. 13, 5841 (2022)

5. Targeted Degradation of Transcription Co-activator SRC-1 through the N-Degron Pathway. Lee. Y. et al., Angew. Chem. Int. Ed., 59,17548 (2020)

6. Discrimination of Avian Influenza Virus using Host-cell Infection Fingerprinting by Sulfinate-based Fluorescence Superoxide Probe. Hong S. C., et al., Angew. Chem. Int. Ed., 57, 9716 (2018)

7. A vinyl sulfone-based fluorogenic probe capable of selective labeling of PHGDH in live mammalian cells. Pan. S. et al., Angew. Chem. Int. Ed., 57, 579 (2018)

8. Bulk aggregation based fluorescence turn-on sensors for selective detection of progesterone in aqueous solution. Hong, S. C., et al., Angew. Chem. Int. Ed., 56, 14642 (2017)

9. A suite of "minimalist" photo-crosslinkers for live-cell imaging and chemical proteomics: Case study with BRD4 inhibitors. Pan, S., et al., Angew. Chem. Int. Ed., 56, 11816 (2017)

China

IST-P-25

Xiaoguang Lei

Peking University

Professor

xglei@pku.edu.cn

Website http://www.chem.pku.edu.cn/leigroup/

Research Field(s) Natural product chemical biology, Chemical genetics, Drug discovery

Academic Career

B.S., 2001, Peking University; Ph.D., 2006, Boston University (advisor: John Porco); Postdoctoral Training, 2006-2008, Columbia University (advisor: Samuel Danishefsky); PI and Director of Chemistry Center, 2008-2014, NIBS; Professor, 2014-present, Peking University

Selected Publications

1. Bin Jiang, et al, Xiaoguang Lei*, Jianbin Yan* "Characterization and heterologous reconstitution of Taxus biosynthetic enzymes leading to baccatin III" Science 2024, 383, 622-629

2. Kai Wang, et al., Xiaoguang Lei*, Jie Qiao*, Changtao Jiang* "Microbial-host-isozyme analyses reveal microbial DPP4 inhibition as a potential antidiabetic target" Science 2023, 381, eadd5787

3. Junping Fan, et al., Xiaoguang Lei* "Structural basis of TRPV3 inhibition by an antagonist" Nature Chem. Biol. 2023, 19, 81-90

4. Jianyong Du, et al., Xiaoguang Lei*, Jing-Wei Xiong* "A small-molecule cocktail promotes mammalian cardiomyocyte proliferation and heart regeneration" Cell Stem Cell 2022, 29, 545-558

5. Lei Gao, et al., Xiaoguang Lei* "Enzymatic control of endo and exo stereoselective Diels-Alder reactions with broad substrate scope" Nature Catalysis 2021, 4, 1059-1069

6. Lei Gao, et al., Xiaoguang Lei* "FAD-dependent Enzyme-Catalysed Intermolecular [4+2] Cycloaddition in Natural Product Biosynthesis" Nature Chemistry, 2020, 12, 620-628

7. Wu, F.; et al.; Lei, X.* "Chrysomycin A Derivatives for the Treatment of Multidrug Resistant Tuberculosis" ACS Cent. Sci. 2020, 6, 928-938

8. Wang W, et al., Lei X,* Zhou JM* "An Arabidopsis Secondary Metabolite Directly Targets Expression of the Bacterial Type III Secretion System to Inhibit Bacterial Virulence" Cell Host & Microbe 2020, 27, 601–613

9. Sourav Banerjee, et al., and Xiaoguang Lei* "Inhibition of dual-specificity tyrosine phosphorylation-regulated kinase 2 perturbs 26S proteasome-addicted neoplastic progression" Proc. Natl Acad. Sci. USA 2019, 116, 24881-24891

10. Wang, G.*; et al.; Lei, X.*; Wang, X.* "Small Molecule Activation of the TRAIL Receptor DR5 in Human Cancer Cells" Nature Chem. Biol. 2013, 9, 84-89

11. Sun, L.; et al.; Lei, X.*; Wang, X.* "Mixed Lineage Kinase Domain-like Protein Mediates Necrosis Signaling Downstream of RIP3 Kinase" Cell 2012, 148, 213-227

China

IST-P-26

Yan Zhang

Nanjing University

Professor

njuzy@nju.edu.cn

Website	**https://chem.nju.edu.cn/zy_16329/list.htm**
Social Media Channel	
Research Field(s)	**Bioorthogonal chemistry, Optochemical biology**

Academic Career

B.S., 1997, Jilin University; Ph.D., 2002, Nanjing University (advisor: Jian-hua Xu); Postdoctoral Training, 2002-2004, Hong Kong University of Science and Technology (advisor: Bing Xu); 2004-2006, Stanford University, Molecular Imaging Program at Stanford (advisor: Jianghong Rao); Professor, 2006-present, Nanjing University

Selected Publications

1. Wang, W., Zhu, C., Zhang, B., Feng, Y., Zhang, Y., Li J. Self-Assembled Nano-PROTAC Enables Near-Infrared Photodynamic Proteolysis for Cancer Therapy, J. Am. Chem. Soc. 2023, 145, 16642-16649.

2. Zhu, C., Wang, W., Wang, Y., Zhang, Y., Li, J., Dendronized DNA Chimeras Harness Scavenger Receptors To Degrade Cell Membrane Proteins, Angew. Chem. Int. Ed. 2023, 62, e202300694.

3. Xi, Z.; Kong, H.; Chen, Y.; Deng, J.; Xu,W.; Liang, Y.; Zhang, Y. Metal- and Strain-Free Bioorthogonal Cycloaddition of o-Diones with Furan-2(3H)-one as Anionic Cycloaddend, Angew. Chem. Int. Ed. 2022, e202200239.

4. Wang,Y.; Bai, H.; Miao, Y.; Weng, J.; Huang, Z.; Fu, J.; Zhang, Y.; Lin, J.; Ye, D. Tailoring a Near-Infrared Macrocyclization Scaffold Allows the Control of In Situ Self-Assembly for Photoacoustic/PET Bimodal Imaging, Angew. Chem. Int. Ed. 2022, e202200369.

5. Wang, Y.; Weng, J.; Lin, J.; Ye, D.; Zhang, Y. NIR Scaffold Bearing Three Handles for Biocompatible Sequential Click Installation of Multiple Functional Arms, J. Am. Chem. Soc. 2020, 142, 2787-2794.

6. Wang, Y.; Hu, X.; Weng, J.; Li, J.; Fan, Q.; Zhang, Y.; Ye, D. A Photoacoustic Probe for the Imaging of Tumor Apoptosis by Caspase-Mediated Macrocyclization and Self-Assembly. Angew. Chem. Int. Ed. 2019, 58, 4886-4890.

7. Li, J.; Kong, H.; Huang, L.; Cheng, B.; Qin, K.; Zheng M.; Yan, Z.; Zhang, Y. Visible Light-Initiated Bioorthogonal Photoclick Cycloaddition. J. Am. Chem. Soc. 2018, 140, 14542-14546.

China

IST-P-27

Zhu-Jun Yao

Nanjing University

Professor

yaoz@nju.edu.cn

Website	**https://chem.nju.edu.cn/yzj/list.htm**
Social Media Channel	
Research Field(s)	**Natural product, Chemical biology, Medicinal chemistry**

Academic Career

B.S., 1990, Fudan University; Ph.D., 1995, Shanghai Institute of Organic Chemistry/Chinese Academy of Sciences (advisor: Yu-Lin Wu); Postdoc, 1996-1999, NCI/NIH (US) (advisor: Terrence R. Burke, Jr.); Assis. Prof., 1995-1999, SIOC/CAS; Professor, 1999-2016, SIOC/CAS; Professor, 2008-present, Nanjing University.

Selected Publications

1. Isochromenylium/Isoquinolinium-Mediated One-Pot Annulationto Hexahydropyrazinoisoquinolines. Synthesis of Quinocarcinol. Wang, T.; Wang, Y.; Feng, D.; Wang, M.; Yang, X.; Yao, Z.-J.* Org. Lett. 2023, 25, 8803−8808.

2. Simplified hybrids of two anticancer bistetrahydroisoquinoline alkaloids ecteinascidin 743 and cribrostatin 4 and inhibitory activity against proliferation of cancer cells. Wang, M.; Yu, B.-B.; Yao, Z.-J.* Org. Biomol. Chem. 2022, 20, 8438 - 8442.

3. Enantioselective Total Synthesis of (+)-Sieboldine A and Analogues Thereof. Huang, B.-B.;# Zhao, Y.-L.;# Lei, K.; Zhong, L.-R.; Yang, X.; Yao, Z.-J.*Org. Lett. 2022, 24, 7517−7521.

4. Annonaceous Acetogenin Mimic AA005 Inhibits the Growth of TNBC MDA-MB-468 Cells by Altering Cell Energy Metabolism. Yu, B.-B.; Yuan, H.; Chen, Y.-C.; Zhou, D.-X.; Gan, Z.-J.; Wang, J.; Li, J.-X.;* Yao, Z.-J.* ChemBioChem 2022, 23(16), e202200250.

5. Azaphilones as Activation-Free Primary Amine-Specific Bioconjugation Reagents for Peptides, Proteins and Lipids. Yi, S.; Wei, S.; Wu, Q.; Wang, H.;* Yao, Z.-J.* Angew. Chem. Int. Ed. 2022, 61(6), e202111783.

6. Artemisinin derivative ART1 induces ferroptosis by targeting the HSD17B4 protein essential for lipid metabolism and direct induction of lipid peroxidation. Xie, J.;† Zhu, G.;† Gao, M.;† Xi, J.; Chen, G.; Ma, X.; Yan, Y.; Wang, Z.; Xu, Z.-J.; Chen, H.-J.; Hao, H.-D.; Zhang, Y.; Yao, Z.-J.;* Zhu, J.*CCS Chemistry 2021, 3, 664−677.

7. Enantioselective Total Synthesis of (+)-Plumisclerin A. Gao, M.; Wang, Y.-C.; Yang, K.-R.; He, W.; Yang, X.-L.; Yao, Z.-J.* Angew. Chem. Int. Ed. 2018, 57, 13313-13318.

8. Kinetic or Dynamic Control on a Bifurcating Potential Energy Surface? An Experimental and DFT Study of Gold-Catalyzed Ring Expansion and Spirocyclization of 2-Propargyl-β-tetrahydrocarbolines. Zhang, L.; Wang, Y.; Yao, Z.-J.; Wang, S.-z.;* Yu, Z.-X.* J. Am. Chem. Soc. 2015, 137, 13290−13300.

9. Asymmetric Cascade Annulation Based on Enantioselective Oxa Diels−Alder Cycloaddition of in Situ Generated Isochromenyliums by Cooperative Binary Catalysis of Pd(OAc)2 and (S)-Trip. Yu, S.-Y.; Zhang, H.; Gao, Y.; Mo, L.; Wang, S.-z.; Yao, Z.-J.* J. Am. Chem. Soc. 2013, 135, 11402−11407.

10. Protecting Group-Free Total Synthesis of (-)-Lannotinidine B. Ge, H. M.; Zhang, L.-D.; Tan, R. X.; Yao, Z.-J.*J. Am. Chem. Soc. 2012, 134, 12323-12325.

China

IST-P-28

Huan Wang

Nanjing University

Professor

wanghuan@nju.edu.cn

Website	**https://hysz.nju.edu.cn/wanghuan/index.htm**
Social Media Channel	
Research Field(s)	**Peptide, Protein, Natural product, Enzyme**

Academic Career

B.S., 2005, Peking University; Ph.D., 2010, University of Maryland at College Park (advisor: Steven E. Rokita); Postdoctoral Training, 2010-2014, University of Illinois at Urbana-Champaign (advisor: Wilfred van der Donk); Associate Professor, 2014-2015, Nanjing University; Professor, 2015-present, Nanjing University

Selected Publications

1. Discovery and biosynthesis of tricyclic copper-binding ribosomal peptides containing histidine-to-butyrine crosslinks, Yuqing Li, Yeying Ma, Yinzheng Xia, Tao Zhang, Shuaishuai Sun, Jiangtao Gao,* Hongwei Yao* and Huan Wang* Nat. Commun. 2023, 14, 2944

2. Conformational remodeling enhances activity of lanthipeptide zinc-metallopeptidases, Chang Zhao, Wangjian Sheng, Ying Wang, Jie Zheng, Xiangqian Xie, Yong Liang, Wanqing Wei,* Rui Bao* and Huan Wang* Nat. Chem. Biol. 2022, 18, 724-732

3. Biosynthesis of Gut-Microbiota-Derived Lantibiotics Reveals a Subgroup of S8 Family Proteases for Class III Leader Removal, Yingying Zhang, Zhilai Hong, Liang Zhou, Zhenkun Zhang, Ting Tang, Erpeng Guo, Jie Zheng, Ciji Wang, Lei Dai, Tong Si* and Huan Wang* Angew. Chem. Int. Ed. 2022, 61, e202114414

4. Light-controlled Tyrosine Nitration of Proteins, Tengfang Long, Lei Liu, Youqi Tao, Wanli Zhang, Jiale Quan, Jie Zheng, Julian D. Hegemann, Motonari Uesugi, Wenbing Yao, Hong Tian* and Huan Wang* Angew. Chem. Int. Ed. 2021, 60, 13414-13422

5. Utilization of Lanthipeptide Synthetases is a General Strategy for the Biosynthesis of 2-Aminovinyl-Cysteine Motifs in Thioamitides, Jingxia Lu, Yuan Wu, Yuqing Li and Huan Wang* Angew. Chem. Int. Ed. 2021, 60, 1951-1958.

India

IST-P-31

Surajit Ghosh

Indian Institute of Technology Jodhpur

Professor

sghosh@iitj.ac.in

Website http://home.iitj.ac.in/~sghosh/index.php

Research Field(s) Chemical Biology, Chemical Neuroscience, Biophysical Platform

Academic Career

BSc Calcutta University, India 1998, MSc Calcutta University, India 2000, PhD Indian Institute of Technology Kanpur 2008, Post Doc, European Molecular Biology Laboratory, Heidelberg, Germany 2010, Scientist, CSIR-Indian Institute of Chemical Biology Kolkata 2011-2019, Professor at Indian Institute of Technology Jodhpur 2019-Till date

Selected Publications

1. Potential Broad-Spectrum Antimicrobial, Wound Healing and Disinfectant Cationic Peptide Crafted from Snake Venom. Sen, S., et al. Jouranl of Medicinal Chemistry 2023, 66, 16, 11555–11572.

2. Amyloid-Inspired Engineered Multidomain Amphiphilic Injectable Peptide Hydrogel-An Excellent Antibacterial, Angiogenic, and Biocompatible Wound Healing Material. Mukherjee, N., et al. ACS Applied Materials & Interfaces 2023, 15, 28, 33457–33479

3. Discovery of Imidazole-based GSK3β Inhibitors for Transdifferentiation of Human Mesenchymal Stem Cells to Neurons: A Potential Single-Molecule Neurotherapeutic Foresight. Gupta, V., et al., Frontiers in Molecular Neuroscience, 2022, p.678.

4. Evolution of Potential Antimitotic Stapled Peptide from Multiple Helical Peptide Stretches of Tubulin Heterodimer Interface: Helix-Mimicking Stapled Peptide Tubulin Inhibitors. Adak, A., et al., Journal of Medicinal Chemistry 2022, 65, 13866–13878

5. Design and Development of Benzothiazole-based Fluorescent Probes for Selective Detection of A Aggregates in Alzheimer's Diseases. Mallesh, R., et al. ACS Chemical Neuroscience, 2022, 13, 2503–2516

6. Biocompatible Lipopeptide-Based Antibacterial Hydrogel. Adak, A., et al. Biomacromolecules, 2019, 20, 5, 1889-1898

7. Potential Neuroprotective Peptide Emerged from Dual Neurotherapeutic Targets: A Fusion Approach for the Development of anti-Alzheimer's Lead. Mondal, P., et al. ACS Chem Neurosci. 2019, 10, 2609-2620

8. Discovery of Neuro-regenerative Peptoid from Amphibian Neuropeptide Inhibits Aβ Toxicity and Crossed Blood-Brain Barrier. Pradhan, K., et al. ACS Chem Neurosci. 2019, 10, 3, 1355-1368.

9. Spatial Position Regulates Power of Tryptophan: Discovery of Major Groove Specific Nuclear Localizing Cell Penetrating Tetrapeptide. Bhunia, D., et al. J Am Chem Soc., 2018, 140, 1697-1714.

10. Biodegradable Neuro-Compatible Peptide Hydrogel Promotes Neurite Outgrowth, Shows Significant Neuroprotection, and Delivers Anti-Alzheimer Drug. Adam, A., et al. ACS Appl Mater Interfaces. 2017, 9, 5067-5076.