



Toru Komatsu

Toru Komatsu was born in Japan. He was awarded a Ph.D. by the University of Tokyo Graduate School of Pharmaceutical Sciences in 2009 (Prof. Tetsuo Nagano) and during 2009-2011 worked as a postdoctoral fellow at Johns Hopkins University School of Medicine (Assist. Prof. Takanari Inoue) and at the Scripps Research Institute (Prof. Benjamin F. Cravatt). He became assistant professor at the University of Tokyo Graduate School of Pharmaceutical Sciences in 2011 (Prof. Tetsuo Nagano and Prof. Yasuteru Urano).

His main research interest is development of chemical-biological tools to discover, characterize, and control enzymatic functions related to the mechanisms of diseases. He has been developing fluorescent substrate sensors that can report the specified enzymatic activities in living samples. Based on this technology to monitor enzymes' live functions, he recently established the methodology of discovering disease-related enzymes by globally monitoring the enzyme activities using the library of substrates and characterizing their target proteins (JACS 2013, JACS 2015). In one example, he developed a way of globally monitoring the peptide-metabolizing enzymatic activities and discovered/characterized a novel endopeptidase activity that was elevated in colorectal tumor cells (JACS 2017). Currently, he is developing various methodologies of enzymomics (omics of enzymes) for further characterization of disease-related proteins as potential drug targets or biomarkers.

