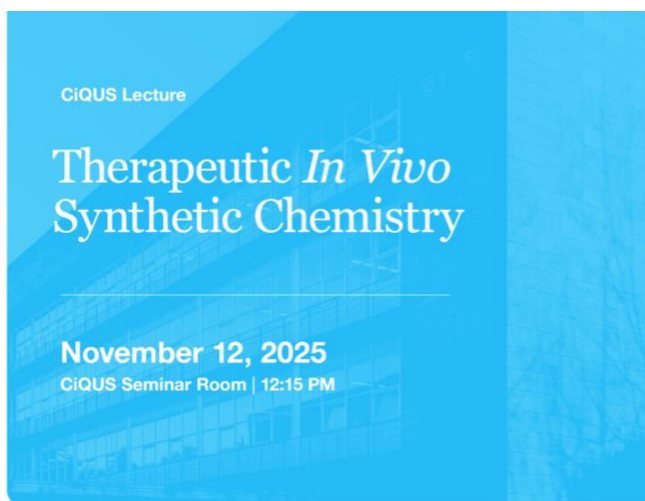


Dr. Katsunori Tanaka
Tokyo Institute of Technology**Dr. Katsunori Tanaka**

Department of Chemical Science and Engineering, School of Materials and Chemical
Technology, Institute of Science Tokyo, Japan.

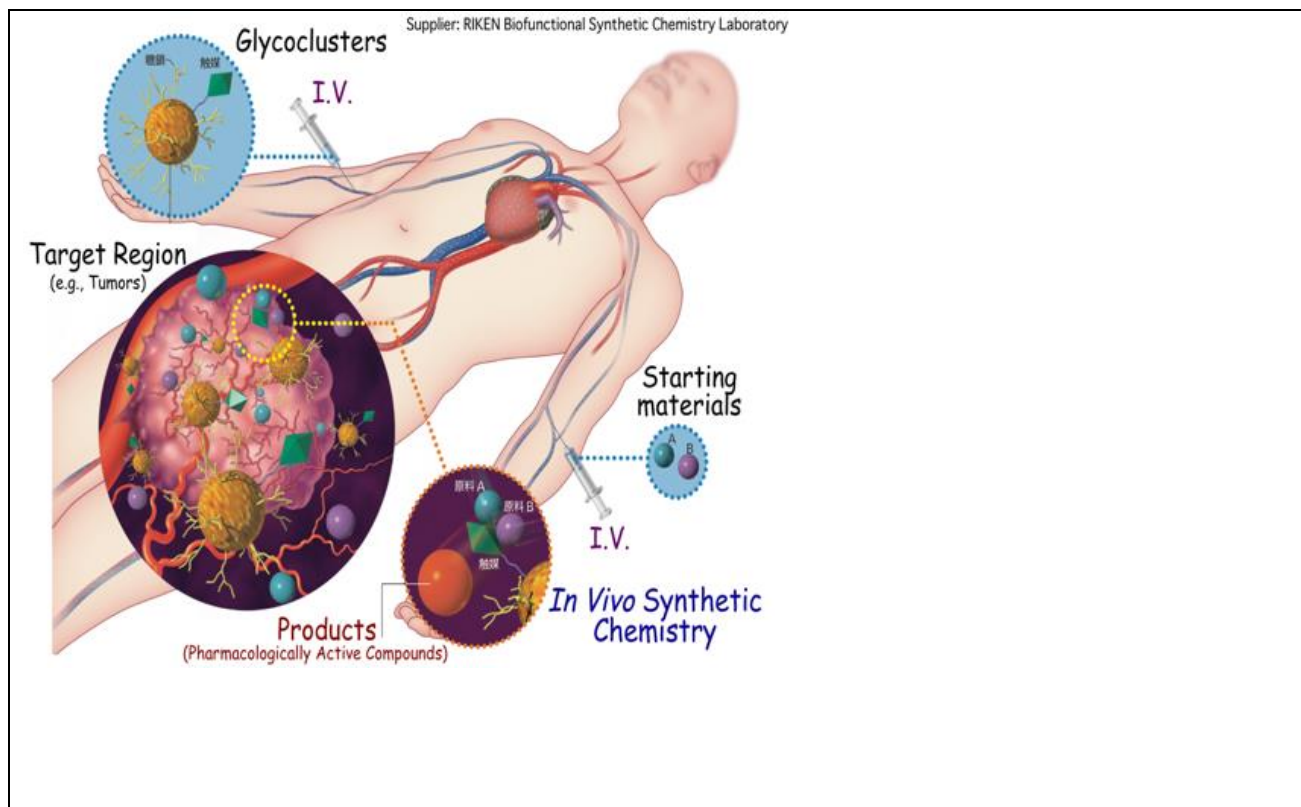
Biofunctional Synthetic Chemistry Laboratory, RIKEN Cluster for Pioneering
Research, Japan

tanaka.k.dg@m.titech.ac.jp; kotzenori@riken.jp

Abstract

The long-term goal of our research is to develop the working tools and methodologies that will form the foundation of “Therapeutic *In Vivo* Synthetic Chemistry”. The main benefit of this approach is that synthetic transformations can be directly performed at target regions within the body to generate molecules that elicit localized biological effects. This method should largely circumvent off-target binding and instability issues associated with current drug administration techniques. In these years, we have engaged this topic through two different approaches. The first is through the usage of glycosylated artificial metalloenzymes, where the primary aim is to exploit the chemoselectivity of embedded, non-natural transition metal catalysts for the synthesis/release of bioactive molecules. The second approach is rather centered on discovering chemical probes with novel and selective reactivity to biological metabolites naturally overexpressed in cancer cells. Once developed, the objective is then to adapt them for synthesizing diagnostic probes or anticancer drugs. A part of our strategies has already met with successful outcome in clinical trials and could be applied to pharmaceutical fields and hospitals. Overview and future prospect will be discussed.

Ref: <http://www.noritanaka-cap.mac.titech.ac.jp>



Biosketch

Dr. Katsunori Tanaka

Chief Scientist, Biofunctional Synthetic Chemistry Laboratory, RIKEN

Professor, School Materials and Chemical Technology, Tokyo Institute of Technology

Profile:

1998-1999 Researcher, Bayer Research Center

1999-2002 Department of Chemistry, Graduate School of Science, Kwansei Gakuin University
(Prof. Shigeo Katsumura)

2001-2003 JSPS Research Fellowship for Young Scientists

2002 Ph.D., Department of Chemistry, Graduate School of Science, Kwansei Gakuin University

2002-2005 Postdoctoral Researcher, Department of Chemistry, Columbia University, USA
(Prof. Koji Nakanishi)

2003-2005 JSPS Postdoctoral Fellowship for Research Abroad

2005-2012 Assistant Professor, Department of Chemistry, Graduate School of Science, Osaka University

2012-2017 Associate Chief Scientist, Biofunctional Synthetic Chemistry Laboratory, RIKEN

2014-2018 JST (Japan Science and Technology Agency)-PRESTO Researcher

2014-2022 Professor, Alexander Butlerov Institute of Chemistry, Kazan Federal University

2017-2022 Group Director, RIKEN-Max Planck Joint Center for Chemical Biology Research

2017-2022 Team Leader, GlycoTargeting Research Team

2019-2022 Adjunct Professor, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University

2012-current Adjunct Professor, Graduate School of Science and Engineering, Saitama University

2017-current Chief Scientist, Biofunctional Synthetic Chemistry Laboratory, RIKEN
2019-current Professor, Department of Chemical Science and Engineering, School Materials and Chemical Technology, Tokyo Institute of Technology (Cross appointment with RIKEN Chief Scientist)

Award (representative):

2002 The 2nd Young Scientists' Research Award in Natural Product Chemistry
2003 Young Scientist's Award on Circular Dichroism in Chemistry and Life Science
2004 The 46th Young Scientists' Research Award on the Chemistry of Natural Products
2006 The CSJ (Chemical Society of Japan) Lectureship Award for Young Chemist
2008 CSJ Lectureship Award
2009 Synthesis-Synlett Journal Award
2010 Eisai Award in Synthetic Organic Chemistry, Japan 2009
2010 The 46th the Japanese Society of Carbohydrate Research Award
2011 Incentive Award in Synthetic Organic Chemistry, Japan
2014 Asian Core Program Lectureship Awards from China
2014 Asian Core Program Lectureship Awards from Malaysia
2015 American Chemical Society (ACS) Division of Carbohydrate Chemistry, Horace S. Isbell Award
2018 Precious Metal Research Grant (Gold Award) from Tanaka Memorial Foundation
2018 JSPS Prize
2019 The Chemical Society of Japan (CSJ) Award for Creative Work
2022 Astellas Foundation for Research on Metabolic Disorders
2022 Kaneka Award by the Society of Synthetic Organic Chemistry, Japan
2023 FY2022 RIKEN EIHO Award from President of RIKEN

Hobbies:

Running, Electric guitar.