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CURRICULUM VITAE

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**RESEARCH EXPERIENCE:**

RIKEN CLST, Molecular Network Control Factors Development Unit, 2016-present. Research Scientist

Yokohama City University, Department of Regenerative Medicine, 2015-2016. Technical Staff

RIKEN Systems and Structural Biology Center, 2012-2015. Visiting Researcher

RIKEN Systems and Structural Biology Center, 2010-2012. Postdoctoral Researcher

RIKEN Systems and Structural Biology Center, 2008-2010. Research Associate

RIKEN Genomic Sciences Center, 2005-2008. Technical Staff

Ochanomizu University, Faculty of science, 2003-2005. Researcher

**EDUCATION:**

Ph.D.

Department of Bioscience and Biotechnology, Graduate School of Bioresource and  
Bioenvironmental Sciences, Kyushu University, March 2010

**FELLOWSHIP:**

JSPS Postdoctoral Fellow (PD), 2012-2015

JSPS Grants-in-Aid for Young Scientists, 2012-2015

## PUBLICATION:

1. **Fluorimetric assays for *N*-acetylgalactosamine-6-sulfatase and arylsulfatase B based on the natural substrates for confirmation of mucopolysaccharidoses types IVA and VI**  
Arun Babu Kumar, Zdenek Spacil, Farideh Ghomashchi, Sophia Masi, **Tomomi Sumida**, Makoto Ito, Frantisek Turecek, C. Ronald Scott and Michael H. Gelb.  
*Clinica Chimica Acta*, **451**(Pt B), 125-8 (2015).
2. **Conserved Neutralizing Epitope at Globular Head of Hemagglutinin in H3N2 Influenza Viruses**  
Yoshitaka Iba, Yoshifumi Fujii, Nobuko Ohshima, **Tomomi Sumida**, Ritsuko Kubota-Koketsu, Mariko Ikeda, Motoaki Wakiyama, Mikako Shirouzu, Jun Okada, Yoshinobu Okuno, Yoshikazu Kurosawa and Shigeyuki Yokoyama.  
*Journal of Virology*, **88**(13), 7130-7144 (2014).
3. **A novel crystal form of pyrrolysyl-tRNA synthetase reveals the pre- and post-aminoacyl-tRNA**  
Tatsuo Yanagisawa, **Tomomi Sumida**, Ryohei Ishii and Shigeyuki Yokoyama.  
*Acta Crystallographica Section D Biological Crystallography*, **69**, 5-15 (2013).
4. **Gaining insight into the inhibition of glycoside hydrolase family 20 exo- $\beta$ -*N*-acetylhexosaminidases**  
**Tomomi Sumida**, Keith A Stubbs, Makoto Ito and Shigeyuki Yokoyama  
*Organic & Biomolecular Chemistry*, **10**, 2607-2612 (2012).
5. **Molecular cloning and catalytic mechanism of a novel glycosphingolipid-degrading  $\beta$ -*N*-acetylgalactosaminidase from *Paenibacillus* sp. TS12**  
**Tomomi Sumida**, Ken Fujimoto, and Makoto Ito.  
*Journal of Biological Chemistry*, **286**, 14065-14072 (2011).

### **\*Glycoside Hydrolase family 123**

Glycosphingolipid-degrading  $\beta$ -*N*-acetylgalactosaminidase NgaP, which specifically hydrolyzes the non-reducing terminal  $\beta$ -GalNAc linkage but not  $\beta$ -GlcNAc linkage, is the first  $\beta$ -*N*-acetylgalactosaminidase (EC 3.2.1.53) to have its primary structure elucidated. Since the primary structure of NgaP is totally new, Glycoside Hydrolase Family 123 was created as a new family of  $\beta$ -*N*-acetylgalactosaminidases.

<http://www.cazy.org/GH123.html>

[https://www.cazypedia.org/index.php/Glycoside\\_Hydrolase\\_Family\\_123](https://www.cazypedia.org/index.php/Glycoside_Hydrolase_Family_123)

6. **Crystallization and preliminary X-ray crystallographic study of GenX, a lysyl-tRNA synthetase paralogue from *Escherichia coli*, in complex with translation elongation factor P**  
**Tomomi Sumida**, Tatsuo Yanagisawa, Ryohei Ishii, Shigeyuki Yokoyama  
*Acta Crystallographica. Section F*, **66**, 1115-1118 (2010).

7.

**A paralog of lysyl-tRNA synthetase aminoacylates a conserved lysine residue in translation elongation factor P**

Tatsuo Yanagisawa\*, Tomomi Sumida\*, Ryohei Ishii, Chie Takemoto and Shigeyuki Yokoyama. \*These authors contributed equally to this work.

Nature Structure Molecular Biology, **17**, 1136-1143 (2010).

8.

**Modeling of tRNA-assisted mechanism of Arg activation based on a structure of Arg-tRNA synthetase, tRNA, and ATP analog (ANP)**

Michiko Konno, Tomomi Sumida, Emiko Uchikawa, Yukie Mori, Tatsuo Yanagisawa, Shunichi Sekine, and Shigeyuki Yokoyama.

FEBS Journal, **276**, 4763-4779 (2009).

9.

**Molecular cloning and crystal structural analysis of a novel  $\beta$ -N-acetylhexosaminidase from *Paenibacillus* sp. TS12 capable of degrading glycosphingolipids**

Tomomi Sumida, Ryohei Ishii, Tatsuo Yanagisawa, Shigeyuki Yokoyama and Makoto Ito.

Journal of Molecular Biology, **392**, 87-99 (2009).

10.

**Molecular cloning and characterization of a novel glucocerebrosidase of *Paenibacillus* sp. TS12.**

Tomomi Sumida, Noriyuki Sueyoshi, and Makoto Ito.

Journal of Biochemistry, **132**, 237-243 (2002).

11.

**Utilization of ganglioside-degrading *Paenibacillus* sp. TS12 for production of glucosylceramide**

Tomomi Sumida, Noriyuki Sueyoshi, and Makoto Ito.

Applied and Environmental Microbiology, **68**, 5241-5248 (2002).