

CURRICULUM VITAE

NAME: Tohru TAKARADA 宝田 徹



EDUCATION: 1990-1994, The University of Tokyo, Faculty of Eng., Dept. of Chem. & Biotech.

1994-1999, The University of Tokyo, Graduate School of Engineering

DEGREES: Dr. Engineering (1999), The University of Tokyo (東京大学)

APPOINTMENTS:

1999-2001: Postdoctoral Fellow, RCAST(先端研), The University of Tokyo

2001-2003: Research Associate, Department of Applied Chemistry, Kyushu University

2003-2007: Research Scientist (研究員), Bioengineering Laboratory (前田バイオ工学研究室), RIKEN

2007- : Senior Research Scientist (専任研究員), Bioengineering Laboratory (前田バイオ工学研究室), RIKEN

ACADEMIC ACTIVITIES:

Membership: The Society of Polymer Science, Japan, The Japan Society for Analytical Chemistry,
The Chemical Society of Japan, Japanese Society for Chemical Biology

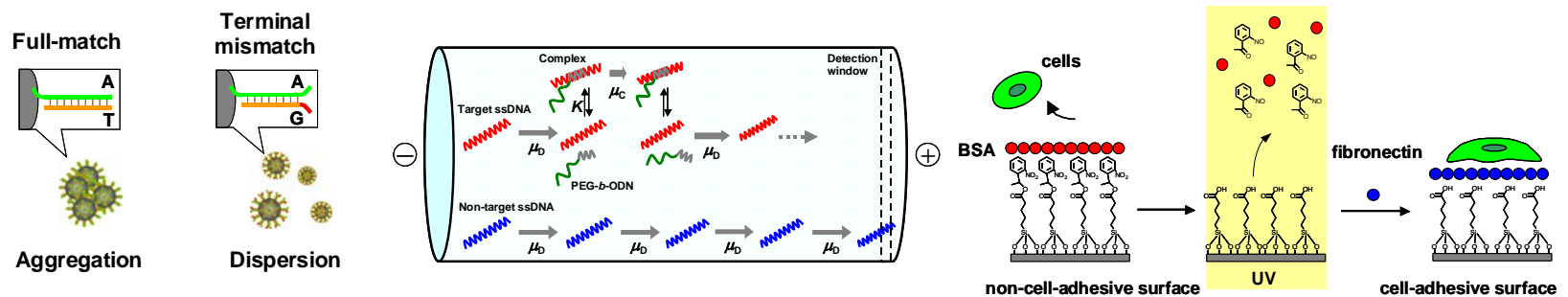
AWARDS: TAKAGI Award (2005), Innovation Award, The Japan Society for Analytical Chemistry (2006)

PUBLICATIONS (selected):

- 1) Kanayama N, Shibata H, Kimura A, Miyamoto D, Takarada T* & Maeda M: RAFT-generated polyacrylamide-DNA block copolymers for single-nucleotide polymorphysm genotyping by affinity capillary electrophoresis. ***Biomacromolecules*** 10: 805-813, 2009
- 2) Kikuchi Y, Nakanishi J,* Shimizu T, Nakayama H, Inoue S, Yamaguchi K, Iwai H, Yoshida Y, Horiike Y, , Takarada T* & Maeda M: Arraying heterotypic single cells on photoactivatable cell-culturing substrates. ***Langmuir*** 24: 13084-13095, 2008
- 3) Kanayama N, Takarada T,* Kimura A, Shibata H & Maeda M: Evaluation of single-base substitution rate in DNA by affinity capillary electrophoresis. ***Anal. Chim. Acta*** 619: 101-109, 2008
- 4) Miyamoto D, Tang Z L, Takarada T* & Maeda M: Turbidimetric detection of ATP using polymeric micelles and DNA aptamers. ***Chem. Commun.*** 4743-4745, 2007
- 5) Nakanishi J,* Kikuchi Y, Inoue S, Yamaguchi K, Takarada, T* & Maeda M: Spatiotemporal control of migration of single cells on a photoactivatable cell microarray. ***J. Am. Chem. Soc.*** 129: 6694-6695, 2007

Scientific Achievements

- 1. Molecular Mechanism of Non-Cross-Linking Aggregation of DNA-Carrying Polymeric Micelles**
 Entropic repulsion mainly contributes the colloidal stabilization of DNA-carrying polymeric micelles.
Manuscript in preparation
- 2. Turbidimetric Bioassay Using the Non-Cross-Linking Aggregation of DNA Micelles**
 The DNA-structure dependent, non-cross-linking aggregation of polymeric micelles allows us to detect SNPs, ATP and metal ions by the naked eye.
Chem. Lett.(2004) & Chem. Commun.(2007)
- 3. Novel Affinity Electrophoresis for SNP Allele Frequency Estimation**
 Hydrodynamic friction force-driven, sequence-selective separation of single-stranded DNA is achieved by using a well-defined DNA block copolymer as a novel affinity polymeric probes.
Anal. Sci.(2005), React. Funct. Polym.(2007), J. Sep. Sci.(2008), Anal. Chim. Acta (2008) & Biomacro. (2009)
- 4. Functional Cell-Culturing Substrate for Spatiotemporal Control of Single-Cell Adhesion**
 Facile and precise single-cell attachment is available on dynamic cell-culturing substrate using a photolysis-induced hydrophobicity change of the surface.
JACS (2004), Anal. Chim. Acta (2006), JACS (2007) Anal. Sci.(2008), Langmuir (2008) & Supramol. Chem. (2010)



Current Research Topics

- 1. Hybridization-Induced, Non-Cross-Linking Fusion of DNA-Carrying Polymeric Vesicles**
- 2. Affinity Electrophoretic Separation of Double-Stranded DNA Containing SNPs Using PEG-*b*-PNA Probes**