

HONG KONG RNA CLUB

Seminar

香港城市大學
City University of Hong Kong



25 Mar 2019 (Mon) / 4:30-5:30pm

B6-605, Yeung Kin Man Acad. Building (AC1)

City University of Hong Kong

Guest Speaker:

Prof. Naoki Sugimoto
Frontier Institute for
Biomolecular Engineering Research
Konan University, Kobe, Japan



RNAs in Molecular Crowding World

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RNAs in Molecular Crowding World

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Abstract

Non-canonical structures of nucleic acids such as a triplex and a quadruplex are stabilized under conditions that mimic the crowded cellular conditions and have been detected in cells. It is possible that the non-canonical structures act as “functional codes” triggered by different molecular environments that regulate gene expression epigenetically.

In this lecture, I will talk how the structures, properties, and functions of nucleic acids differ under various conditions such as highly crowded environments and affect the gene expression (1). I also discuss quantitatively the effects of the chemical environments, especially crowding condition, on the gelation process of repeated RNAs *in vitro*, and the toxicity of RNAs in patients with neurodegenerative disorders.

Acknowledgements: The author is grateful to the colleagues named in the cited papers from my laboratory, institute (FIBER), and other places. This work was supported by grants-in-aid for scientific research from the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and Japan Society for the Promotion of Science (JSPS), especially a Grant-in-Aid for Scientific Research on Innovative Areas “Chemistry for Multimolecular Crowding Biosystems” (JSPS KAKENHI Grant JP17H06351), MEXT- Supported Program for the Strategic Research Foundation at Private Universities (2014–2019), Japan, The Hirao Taro Foundation of Konan Gakuen for Academic Research, The Okazaki Kazuo Foundation of Konan Gakuen for Advanced Scientific Research, and The Chubei Itoh Foundation.

1. N. Sugimoto and colleagues, **Anal. Chem.** **2019**, in press, **J. Am. Chem. Soc.** **2018**, *140*, 5774-5783, **J. Am. Chem. Soc.** **2018**, *140*, 642-651, **Angew. Chem. Int. Ed.** **2018**, *57*, 15723-15727, **Angew. Chem. Int. Ed.** **2018**, *57*, 6868-6872, **Nature Struct. Mol. Bio.** **2018**, *25*, 279-288, **Nucleic Acids Res.**, **2018**, *46*, 4301–4315, **Proc. Natl. Acad. Sci. U. S. A.** **2017**, *114*, 9605-9610, **J. Am. Chem. Soc.** **2017**, *139*, 7768-7779, **Nucleic Acids Res.** **2017**, *45*, 7021-7030, **Nucleic Acids Res.** **2017**, *45*, 461-469, **Sci. Rep.** **2017**, *7*, 15191, and so on.