KAGOSHIMA UNIVERSITY
Department of Biochemistry and Molecular Biology
Graduate School of Medical and Dental Sciences
Sakuragaoka, Kagoshima 890-8544, JAPAN

WiSH セミナー/南九州先端医療開発センター研究セミナー/
生化学･分子生物学分野セミナー/医学研究講義

日時：2023年1月17日(火) 17:30～18:30
(時間が30分繰り下げになりました)
場所：南九州先端医療開発センター　セミナー室　（研究棟2, 2階）

Reading m^{6}A signals in neurons and at the synapses

Dan Ohtan Wang, Ph.D.

Principle Investigator, RIKEN BDR

N6-Methyladenosine (m^{6}A) RNA modification is a highly prevalent RNA modification expressed abundantly in mammalian brain. In recent years, m^{6}A signal has been shown to be required for fundamental brain functions such as development, regeneration, learning and memory, circadian rhythm, and more. But how the signals are transduced into neuronal and synaptic functions remains poorly understood. Previously, we have cataloged synaptically localized m6A-modified transcripts in synaptosomes, which included thousands of modified transcripts involved in neurodevelopmental and neuropsychiatric pathways. Now to understand how in dendrites and axons of neurons is the m^{6}A signal decoded, we focused on two cytoplasmic m^{6}A reader YTH family proteins: YTHDF1 and YTHDF3, and generated transgenic mice models with specific deletion of YTHDF1 or YTHDF3 in mature excitatory neurons. Using a high-throughput fluorescence imaging methods, we performed morphometric analysis on thousands of spines in each animal in the cortex, hippocampus, and amygdala. We observed massive alterations. Interestingly the alterations differed in brain regions and in branch types, supporting the functional relevance of m6A signals to local spine development and the circuit connectivity through excitatory synaptic transmission.

本セミナーは英語で行われる予定です。Zoom オンライン配信もいたします。
Zoom でのご参加をご希望の方には下記連絡先にお問い合わせください。
ミーティング情報をお伝えいたします。

This seminar will be given in English.

学部生、大学院生、職員・教員、どなたでも歓迎です。ご自由にご参加ください。

問い合わせ先：生化学・分子生物学分野　奥野
(内線 5246 または okuno@m.kufm.kagoshima-u.ac.jp)