日本分析化学会　中国四国支部　愛媛地区講演会

第10回　先端ナノ・バイオ分析セミナー

日時：2024.02.22 (Thr)　13:00 – 14:00
場所：愛媛大学理学部講義棟 S24

Speaker

Prof. Mikael Lindgren

Biophysics group, department of Physics
NTNU , Norway

“Use of fluorescent protein markers and cell-models for studying amyloids in neurodegenerative diseases“

Misfolding of proteins into amyloid aggregates is a crucial factor in the pathology of most neurodegenerate diseases, such as Parkinson (PD) or Alzheimer (AD). A current trend in amyloid research is to understand amyloid polymorphism and its relation to disease and cellular cytotoxicity. Adding to the structural complexity of amyloids, the cellular environment in which the amyloid protein tends to form aggregates, is also known to influence its molecular conformation. Fluorescent probes can be designed to be specific to certain different amyloid protein types, as well as discriminate between polymorphs of the same protein amyloid type [1-4]. It will be given a short review and an update on the current development of our research around these topics. It will be focused on recent *in-vitro* cell-models to understand the conformation-specific amyloid pathology in cellular milieu. Here, we present the preliminary results of the hyperspectral imaging and FLIM of amyloid Transthyretin (ATTR) filaments in Human Embryonic Kidney (HEK)293. It will also be shown in seeding experiments how fragments of the Cov-SAR-2 virus’ spike protein can initiate amyloidosis in HEK293 cells transfected to express excess of human a-synuclein and its A53T modified variant.

1. S. Nyström, et al., ACS Chemical Biology (2013), 8 (6), 1128-1133.
2. J. Zhang, et al., Chem. Eur. J. (2018), 24(28) 7210-7216.
3. K. Yuzu, et al., RCS Advances (2020), 10(62), 37721-37727.
4. L. Björk, et al., Chem. ChemBioChem (2023), 24, e202300044.

共催：プラズマ医療、農水産応用研究ユニット

連絡先：化学コース　座古保（ext.9609）