ASHBi SignAC Technology Seminar

Optoproteomics: Enabling Nanoscopic Proteomic Discovery

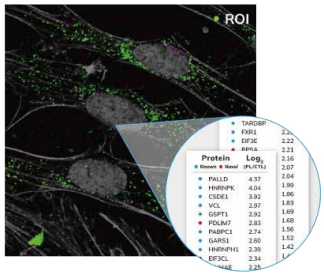
Date: Wednesday, 14 January 2026

Schedule:

①14:00-15:00 [English] ― Webinar

②15:00-16:00 [Japanese] ― Hybrid (On-site & Online)

③16:00-16:30 ― Individual Consultation Session



ROI Protein List

Lecturer:

- Dr. Jung-Chi Liao (Founder & CEO, Syncell) (English Webinar Session)
- Mr. Satoshi Sagara (SCRUM Inc.) (Japanese Hybrid-seminar Session)

Venue: ① Webinar / ② Hybrid meeting / ③ On-site only

Conference Room (B1F, Faculty of Medicine Bldg. B), Kyoto University / Zoom Online

* On-site participation will be closed when capacity is reached.

* Highspeed LAN/WiFi environment advised for stability

Registration:

https://forms.gle/r9j4z1yhXJrbbV89A

* Registration required

* Registration Deadline: Thursday, 8 January 2026

Microscopy-guided proteomic discovery at the nanoscopic (<100 nm) spatial precision is desired for revealing unknown protein constituents in specific disease- or functional-associated regions at the level of molecular-molecular interactions. Here, we achieve spatial protein purification by using Microscoop®, a firmware-integrated microscopy platform that triggers in situ subcellular photobiotinylation of proteins at user-defined regions of interest (ROIs), one field of view (FOV) at a time, for thousands of FOVs fully automatically. Sufficient proteins are biotinylated and pulled down from a cell, FFPE tissue, or fresh frozen tissue sample at up to 25-nm precision. Subsequent LC-MS/MS is implemented to reveal the subcellular proteome at high sensitivity, specificity, and spatial precision. Microscoop has been successfully used to identify novel protein constituents for subcellular organelles (stress granules, primary cilia), inter-organelle contact sites (mitochondria-lipid droplet contacts), surfaceome, aggregates/condensates (TDP-43 aggregates, amyloid β plagues, Polycomb repressive complex), cell proteomic subtyping (hippocampal vs cortical astrocytes), cell-cell interface (immune synapses), and others.

SignAC Single-Cell Genome Information Analysis Core

ASHBi WPI Kyoto University

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