

MICROSCOOP[®]

Microscopy-Guided Proteomics

Spatial Protein Purification[™] by Automated Photo-Biotinylation

The first spatial proteomic platform that has been used to reveal novel protein constituents from a specific subcellular structure in fixed cells or tissue biospecimens (cryo-sections and FFPE).

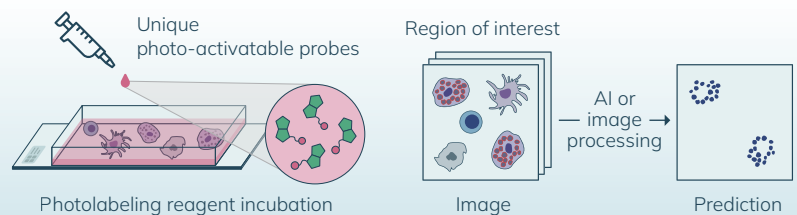
Product Features

- Isolates proteins from specific subcellular locations with high precision.
- Enables unbiased discovery of new protein constituents at your region of interest (ROI).
- No protein candidate list is needed in advance.
- Automatically photo-biotinylates proteins in millions of similar spatial targets.
- Discovers novel biomarkers or therapeutic targets of disease-associated locations.
- Subsequent LC-MS/MS analysis to reveal novel spatial proteomes.

MICROSCOOP[®] WORKFLOW

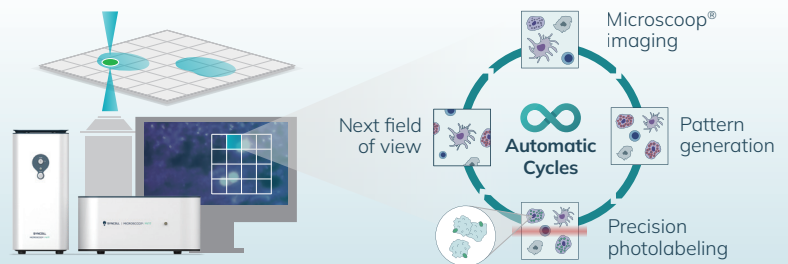
1 Microscopy Pattern Generation

Cells or tissue sections are immersed in media with photolabeling probes, and regions of interest are calculated on the fly by traditional image processing or AI deep learning.



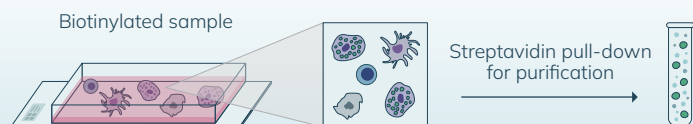
2 High-Content Photolabeling

Two-photon pattern illumination triggers protein labeling in the target areas of thousands of fields of view fully automatically.



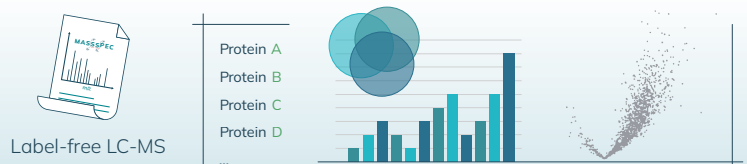
3 Protein Enrichment

Labeled samples are scraped and lysed, and biotinylated proteins are extracted from the samples to achieve spatial protein purification.



4 Proteomics

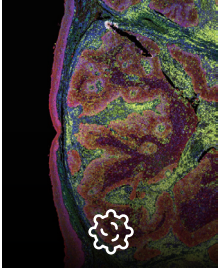
Enriched proteins are analyzed by LC-MS/MS to reveal the unbiased site-specific proteome.



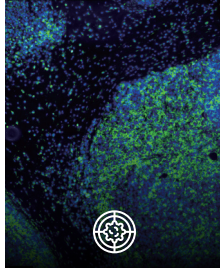
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is applicable to diverse biological problems

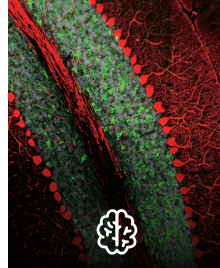
Broad Discovery Applications



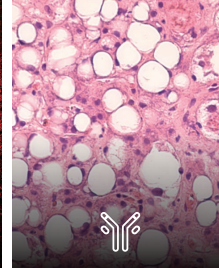
Oncology



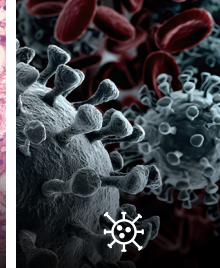
Cancer Immunotherapy



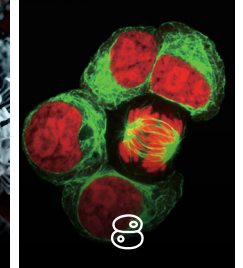
Neuroscience



Metabolic Disease



Cell Biology

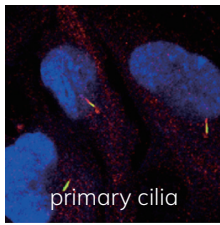


Developmental Biology

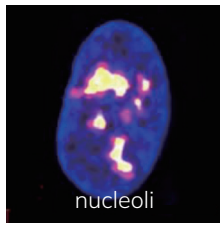
Applicable Cellular Patterns



Subcellular structures



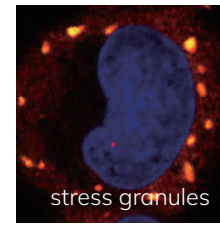
primary cilia



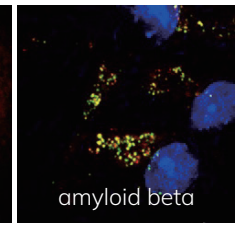
nucleoli



Aggregates



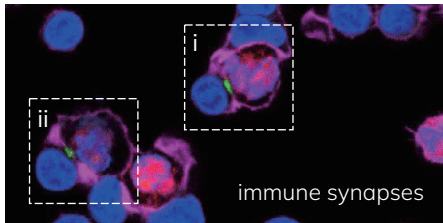
stress granules



amyloid beta



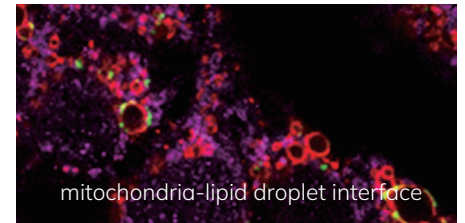
Cell-Cell contact sites



immune synapses



Organelles contact sites

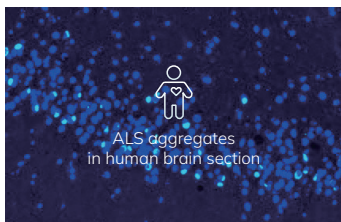


mitochondria-lipid droplet interface

Applicable Sample Types

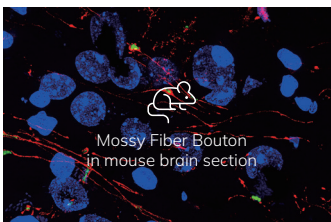


Tissue



ALS aggregates in human brain section

FFPE | Formalin-fixed & Paraffin-embedded



Mossy Fiber Bouton in mouse brain section

Fresh Frozen sections



Cells

Fixed Cultured

Primary Cells

Applicable Areas

• Disease Mechanisms

• Novel protein discovery

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Website



References