

Cell Death Signaling lab

Pyroptosis, Epigenetics and Proteomics

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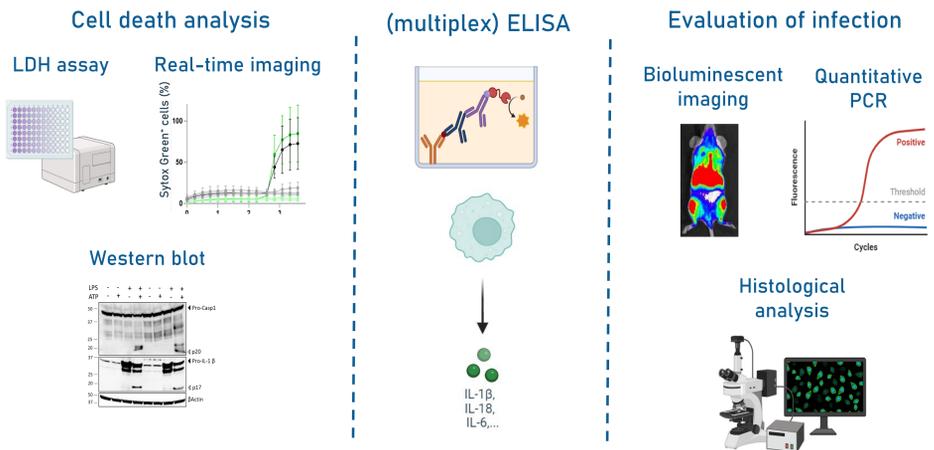
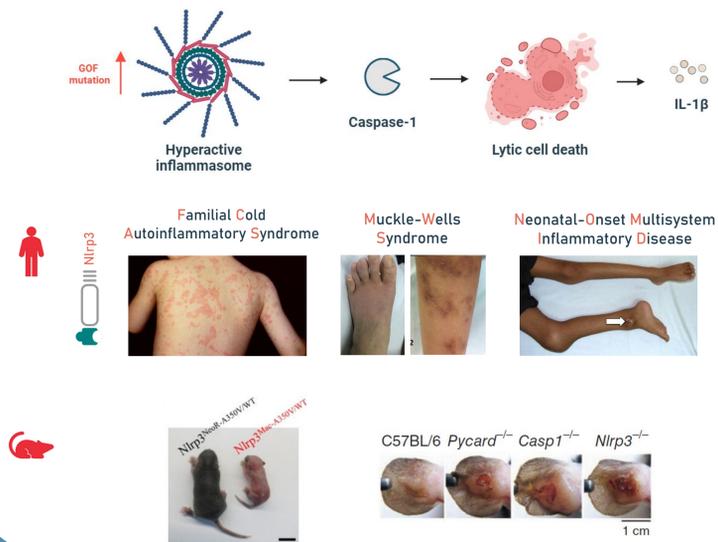


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Pyroptosis team

Inflammasomes are large protein complexes activated by microbial- as well as danger-associated molecular patterns. Activated inflammasomes elicit **pyroptotic cell death**, which releases the pro-inflammatory cytokine IL-1 β .

1. Inflammasome signaling is important in autoinflammatory disease and infection

2. Techniques to evaluate the role of cell death and cytokine release in infections and autoinflammatory diseases

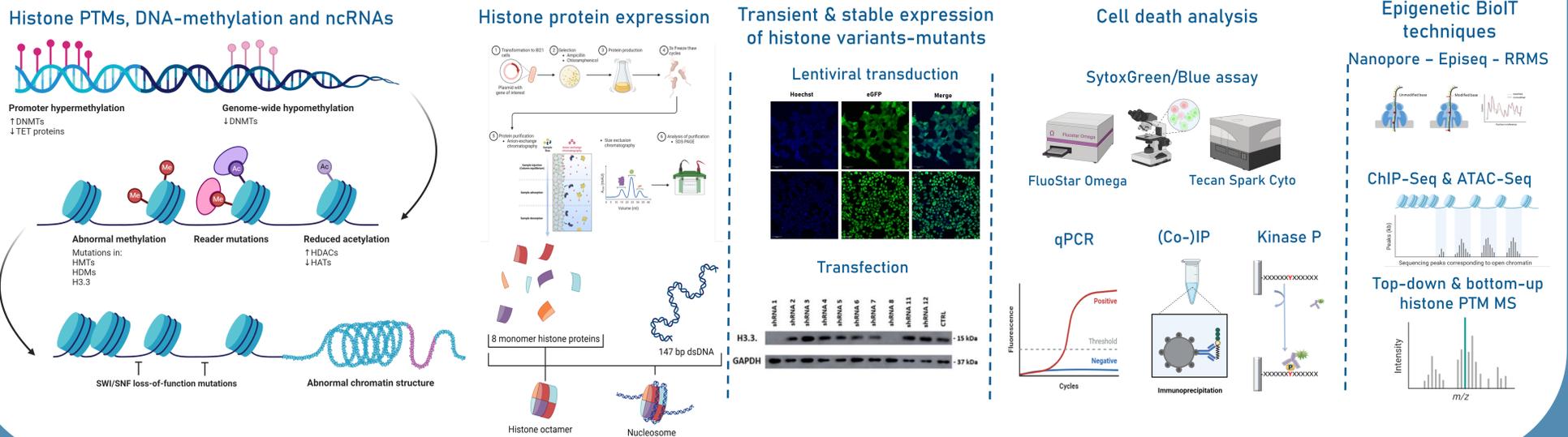


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Epigenetics team

Epigenetics consists of the causative role of heritable and environmental changes in gene expression, without altering the DNA sequence.

1. Epigenetics is an important driver of cancer therapy resistance

2. Techniques to evaluate the role of epigenetics in cancer therapy response and ferroptosis cell death signaling



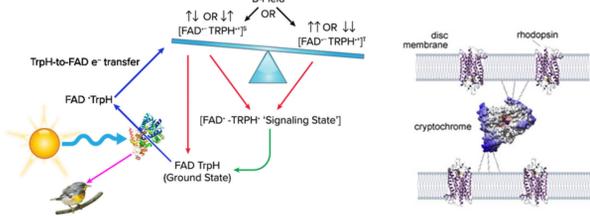
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Proteomics

Quantum Biology is the study of biological effects, based on the laws of quantum physics

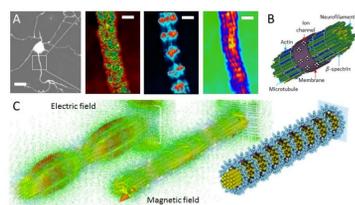
1. Quantum biology may explain many unresolved questions about intra- and inter cellular/tissue signaling

2. Proteomics techniques to examine biological effects for a quantum origin

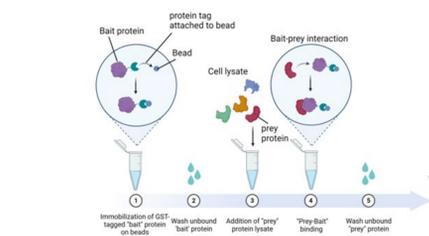
(Earth)magnetic field sensing



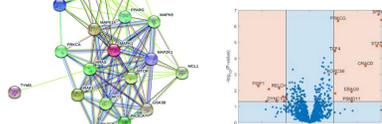
Ultrafast microtubule light energy transport



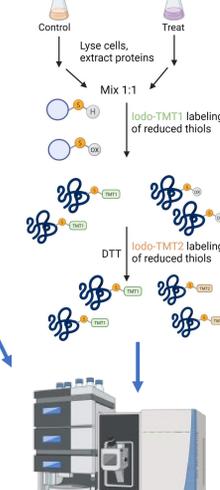
Protein-protein interactions



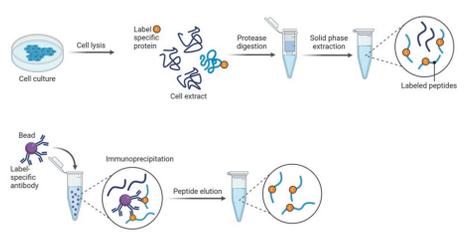
Data analysis



Redox proteomics



Posttranslational and chemical modification of proteins



Protein identification, quantification and characterization by LC-MS