

Protein science and chromatin biology - deciphering the protein language for gene regulation in health and disease

Forskningsleder Ole Nørregaard Jensen

Gruppens kerneforskningsområder

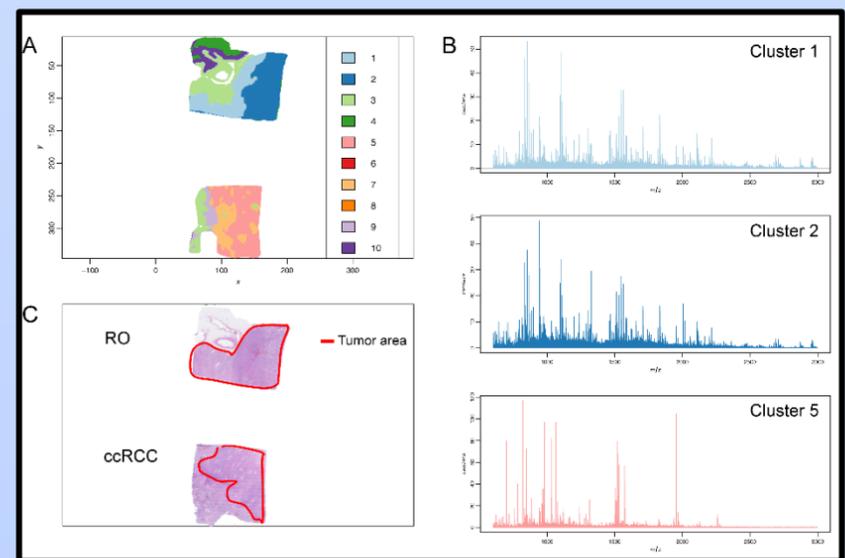
The Jensen laboratory is part of the Protein Research Group at the SDU Department of Biochemistry and Molecular Biology. We study proteins with a focus on chromatin biology and the regulatory roles of co-occurring protein post-translational modifications, such as methylation, acetylation and phosphorylation, during cellular development and in disease.

We rely on computational biology and bioinformatics research for data integration and interpretation of complex data sets obtained by mass spectrometry. Studies of proteins provide a foundation for understanding the molecular details of diseases and for development of diagnostics methods and novel treatment modalities.

We develop advanced mass spectrometry based technologies to identify and quantify proteins isolated from e.g. stem cells and various mammalian organs, such as liver, heart, brain and kidney. Recently, we initiated bioimaging projects on kidney cancer tumors using new mass spectrometry imaging technologies. We also embark on studies of protein based drugs (insulin, EPO, growth factors, etc.) in order to improve technologies for molecular characterization and drug quality control.



Er du interesseret i at skrive projekt i gruppen, så kontakt:
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Projekter

Beskrivelse

Classification of kidney cancer tumors by mass spectrometry imaging.

We collaborate with Odense University Hospital to reveal novel molecular features of cancer tumors. We envision that molecular imaging will assist in the classification and staging of cancer tumors and in designing treatment protocols for individual patients.

Efficient computational analysis of mass spectra for accurate protein identification and assignment of regulatory features in health and disease.

We develop and apply computational methods to extract information from highly complex mass spectra. We are interested in machine learning approaches for data mining.

Gas-phase separation of proteins and peptides using ion mobility spectrometry.

We are interested in separation of near-identical and isomeric peptides and proteins. We investigate the utility of ion mobility spectrometry for this purpose, and also for improving specificity and sensitivity in biomolecular characterization of proteins and proteomes.

Tidligere studerende

Simone Sidoli, PhD, assistant professor, Albert Einstein College of Medicine, New York, USA.

Frederik Holck, Cand. scient., phd-studerende, SDU (ON Jensen group)

Christian Ravnsborg, CEO, Evosep Biosystems, Odense, DK