Séminaire

CONFÉRENCIER INVITÉ

Vendredi 28 Mai 2021 à 11h

Visioconférence

Institut de biologie structurale - 71 avenue des Martyrs CS 10090 38044 Grenoble Cedex 9 - T.+33 (0)4 57 42 85 00

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Exploring cellular organization in native cell extracts with cryo-electron microscopy

Cellular function can be portrayed by the concept of interconnected protein communities. These communities describe functionally synchronized biomolecular networks consisting of associated entities of several macromolecular complexes, arranged in close proximity. For example, protein communities may effectively transduce signals, regulate protein synthesis on local cellular demand and actively transfer substrates along enzymatic pathways (dubbed metabolons). However, their characterization is highly challenging, due to their sheer size, inherent flexibility, stoichiometric variability and overall sophistication. In this talk, I will first introduce methods to detect, characterize, visualize and structurally investigate protein communities from native cell extracts. Then, I will present the latest laboratory results on the studies of the endogenous, giant eukaryotic pyruvate dehydrogenase complex (PDHc) from active, native cell extracts. In particular, the integration of cryo-electron microscopy (cryoEM) with complementary methods allowed us to elucidate the endogenous PDHc structure that included a massive nanocompartment. This unique arrangement, the pyruvate dehydrogenase factory, forms a transient reaction chamber that spatially confines the enzymes involved in pyruvate oxidation. I conclude that cryoEM-based analysis of protein communities will likely have a major impact on expanding the current view of subcellular structure and function. .

Hôte : Ambroise Desfosses (IBS/MICA)

Ce séminaire aura lieu uniquement par visoconférence :

https://cnrs.zoom.us/j/95178216855

(ID de réunion : 951 7821 6855 - Code : y2JQbq)