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Exploring the world of biological lipids –deuteration, purification and characterisation of yeast lipids for native-like cell membrane models at ESS

Tuesday, 21 March 2023 16:00 (2 hours)

Neutron scattering is well-suited to the study of biological membrane lipids and has the potential to contribute unique view into the role membranes play in both health and disease, as well as medical treatments, by employing deuterium labeling. However, modeling the lipid environment in living cells poses a challenge due to their complex and tightly-controlled composition. By extracting and purifying biological lipid mixtures from cell cultures it is possible to reconstitute model membranes that capture the lipid complexity found in cells and to re-create specific membrane environments, e.g. those found in human mitochondria. We present here recent results on the large-scale deuteration, purification and characterization of yeast membrane lipids at the ESS DEMAX platform and illustrate some of their properties and interactions studied by neutron scattering.

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