Contribution ID: **160** Type: **Commercial Communication**

A biolayer interferometry overview and BLI-MS combination to detect unknow binding partners in crude biological extracts

Wednesday, 14 September 2022 12:15 (30 minutes)

Interactions between biomolecules serve as key triggers for many biological processes and, therefore, provide perfect targets for therapeutics and drug discoveries. Biological binding interactions are a dynamic process driven by changes to the environment. Therefore, techniques used to characterize these interactions needs to accommodate the level of biological complexity in order to fully understand these systems.
Biolayer Interferometry (BLI) monitors binding interactions based on molecular accumulation that take place during complex formation. The binding complex is established at the biosensor surface by immobilization of one binding partner (ligand) and directly monitoring the binding of the analyte supplied from solution. The complex formation and dissociation are monitored in real time, providing kinetics and affinity data.
In a recent work from Proteomics Platform Necker at University of Paris, the researchers combined BLI and mass spectrometry (MS) in order to identify the proteins interacting with the bait. Coupling BLI with mass spectrometry (MS) is appealing as it can allow the identification of unknown partners captured during the association in complex biological mixtures or identify new binding partners of the protein bait immobilized on the biosensor as “capture molecule”.

[1] V. Jung, K. Roger, C. Chuon, L. Pannetier, J. Lipecka, J.S. Gomez, P. Chappert, A. Charbit, I. C. Guerrera. Proteomics. 2022 May; 22(9):e2100031

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Session Classification: Commercial Presentations