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Offer for master thesis project within the SB/ISIC/SwissCAT+ research infrastructure

Project 6 : Development of a 2D RPLC-SPE-SFC method

In the context of high-throughput molecular discovery, analytical methods play an essential role. They inform the database about the outcome of the reactions and, more generally, about the molecular properties. To extract the maximum amount of information, we tend to combine methods to generate multidimensional data matrices. An interesting coupling is that between reversed phase liquid chromatography (RPLC) for the chemical separation of reaction mixtures with the chiral supercritical fluid chromatography (SFC). Because the eluent used in RPLC is not necessarily compatible with direct injection into SFC, it is necessary to perform a solvent exchange (mainly to remove water). For this purpose, we use high-throughput solid phase extraction (SPE), which is performed on an automated Agilent Bravo liquid handler. The aim of the project is therefore to develop a method (LC->SPE->SFC) in order to maximize the robustness and recovery of the method.

Expected deliverables:

1. To perform a complete bibliography
2. To develop the complete methods
3. To perform qualification tests on known mixtures