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Optimization of flow splitters for preparative SFC-MS

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Supercritical Fluid chromatography (SFC) is recognized as a powerful technology for the separation and purification of small chiral and achiral compounds. The flow splitter is a critical instrument component in Preparative SFC-MS instruments that enable efficient and reliable fraction collection by mass. In this study, the evaluation and optimization of tunable and passive flow splitters for preparative SFC-MS are discussed. It has been shown that the passive splitter designed for the Prep100 SFC-MS system can successfully replace the tunable splitter. After several modifications of the passive splitter we were able to minimize the solvent usage for the make-up pump and sustain high resolution, high reproducibility, good peak shape and good recovery of standards. These studies helped us to simplify the instrument hardware, decreased instruments downtime due to splitter clogging and improved the overall reliability and robustness of the Prep100 SFC-MS system.

Biography

Irina Khachian has extensive experience in analytical chemistry. She is an Associate Scientist in the Structure Guided Chemistry Department at Dart NeuroScience. Her main focus is on the purification and analysis of small molecules using SFC-MS and HPLC-MS techniques. She is using the latest generation of instruments such as UPC2 and QDa and designs novel components to improve the performance of analytical chemistry systems. She received her MS in Analytical Chemistry from the University of Louisville, Kentucky.

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