SYSTEMS AND METHODS FOR TWO-DIMENSIONAL RPLC-SFC CHROMATOGRAPHY

ABSTRACT

Provided are two-dimensional chromatography systems and methods for separating and/or analyzing complex mixtures of organic compounds. In particularly, a two-dimensional reversed-phase liquid chromatography (RPLC) – supercritical fluid chromatography (SFC) system is described including a trapping column at the interface which collects the analytes eluted from the first dimension chromatography while letting the RPLC mobile phase pass through. The peaks of interest from the RPLC dimension column are effectively focused as sharp concentration pulses on the trapping column, which is subsequently injected onto the second dimension SFC column. The system can be used for simultaneous achiral and chiral analysis of pharmaceutical compounds. The first dimension RPLC separation provides the achiral purity result, and the second dimension SFC separation provides the chiral purity result (enantiomeric excess).

[Fig.8A]