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Separation of seven flavonoids in *Astragali* radix using ultra-performance subcritical fluid chromatography on different stationary phases

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Recently, columns packed with sub-2 μm particles are widely employed in liquid chromatography (LC) but are rarely used in ultra-performance subcritical fluid chromatography (UPSFC). The purpose of this study was to compare the effects of different chromatographic column on the separation of seven different flavonoids. The analytes were including calycosin, calycosin-7-O-β-D-glucoside, medicarpin, formononetin, formononetin-7-O-β-D-glucoside, liquiritigenin and genistein. Separation of flavonoids in the analysis is still a challenge, ultra-performance subcritical fluid chromatography (UPSFC) was found to be an appropriate instrument for the rapid and efficient separation of flavonoids. Among the dedicated four different stationary phases charged hybrid modified with fluoro-phenyl moiety was found to be the most suitable providing the fast separation within 13min using gradient elution with carbon dioxide as a mobile phase and methanol as an organic modifier. Other tested stationary phases including BEH 2-EP, HSS C18 SB and BEH column. The baseline separation on these columns was achieved by mean of a change in organic modifier type, adjust temperature and pressure respectively. Quantitative performance was evaluated at optimized conditions and method validation was accomplished, the validation parameters such as linearity, sensitivity, precision, and accuracy were found to be satisfactory. Optimization techniques were successfully used in the determination of Radix *Astragali* in seven kinds of flavonoids. The sensitivity was sufficient for the analysis of real samples.

Biography

Shilan Feng has completed his PhD in 2003 from University of Chinese Academy of Sciences. She has published more than 100 papers about Traditional Chinese medicine research and has been serving as a teacher of School of Pharmacy, Lanzhou University.

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