

2nd International Conference and Expo on **Separation Techniques**

September 26-28, 2016 Valencia, Spain

A simple, accurate, time-saving and green method for the determination of 15 sulfonamides and metabolites in serum samples by ultra-high performance supercritical fluid chromatography

Feng Zhang

Chinese Academy of Inspection & Quarantine, China

Sulfonamides are a large group of synthetic antibiotics which has anti-bacterial properties. They have a good antibacterial effect on both Gram-positive and Gram-negative bacteria. Sulfonamides are commonly prescribed in human and veterinary medicine against many kinds of infections. In order to investigate the pharmacodynamics and pharmacokinetics of different sulfonamides, establishing a detection method of multiple sulfonamides and their metabolites in serum is necessary. An analytical method based on ultra-high performance supercritical fluid chromatography (UHPSFC) with photo-diode array detection (PDA) has been developed to quantify 15 sulfonamides and their N₄-acetylation metabolites in serum. Under the optimized gradient elution conditions, it took only 7 min to separate all 15 sulfonamides and the critical pairs of each parent drug and metabolite were completely separated. Variables affecting the UHPSFC were optimized to get a better separation. The performance of the developed method was evaluated. The UHPSFC method allowed the baseline separation and determination of 15 sulfonamides and metabolites with a limit of detection ranging from 0.15 to 0.35 g/mL. Recoveries between 90.1 and 102.2% were obtained with satisfactory precision since relative standard deviations were always below 3%. Hence, the proposed method is simple, accurate, time-saving and green; it is applicable to a variety of sulfonamides detection in serum samples.

Biography

Feng Zhang has completed his PhD from Dalian Institute of Chemical Physics, Chinese Academy of Sciences in the year 2005. He has done his Post-doctoral research from Max Planck Institute of Biochemistry under the funding of Max-Planck Society. He has worked as a Senior Expert of Food Safety at the Chinese Academy of Inspection and Quarantine. In 2014, he was assigned as the Director of the Institute of Food Safety and focusing on Chromatography/Mass Spectrometry Techniques applied to food, tobacco, proteomics, metabolomics and pharmaceutical research. He has published more than 40 papers in reputed journals, 4 books and has authorized 3 patents.

fengzhang@126.com

Notes: