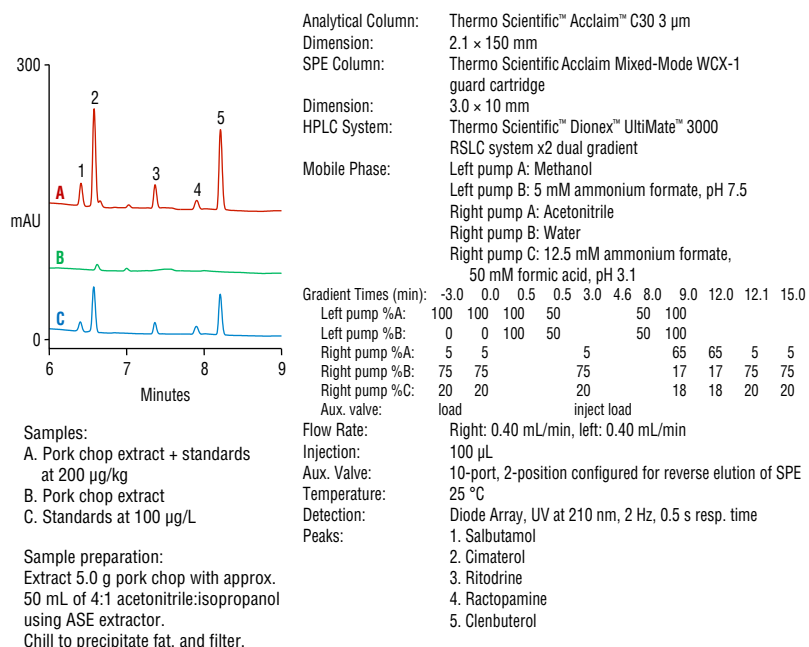


Beta-agonists in Pork Using In-line SPE



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Clenbuterol is the most well-publicized member of a group of beta-adrenergic agonist and non-steroidal anabolic agents that decrease body fat and increase muscle. Unethical farmers and athletes are known to use these drugs. There have been public outbreaks of clenbuterol poisoning due to contaminated meat. The U.S. Department of Agriculture tests animal carcasses for a handful of these drugs (http://www.fsis.usda.gov/PDF/CLG_AGON_1_03.pdf). The World Anti-Doping Agency has banned these drugs, and routinely tests athletes for them. Since trace levels are very low, some form of cleanup and concentration is required.

In this example, we extracted pork with organic solvents in an Accelerated Solvent Extractor. Evaporation and reconstitution proved troublesome, so we avoided that by using solid-phase extraction (SPE). SPE is most effective when it is orthogonal to the analytical separation, so we used cation exchange to retain the drugs, and washed away lipids and other interferences with organic solvent. The auxiliary valve then transferred the drugs to an Acclaim C30 column for RP-HPLC analysis.