

Quantitative and confirmatory analysis of veterinary drug residues in food of animal origin by UPLC-MS/MS after QuEChERS clean-up

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This research paper reports the development and validation of a UPLC-MS/MS method for determining the major classes of anthelmintic drug residues in muscle, liver and milk. Samples were prepared using the rapid QuEChERS preparation technique. Purified extracts were separated on a HSS T3 UPLC column (100 x 2.1 mm) and detected by tandem mass spectrometry operating in multiple reaction monitoring mode. The method takes advantage of the rapid polarity switching and fast scanning capability of the instrument, which allows the analysis of both negatively and positively charged analytes in a single 12.5 minute injection. As a result, the assay uses significantly less solvent compared to conventional HPLC methods and has reduced solvent consumption in the authors laboratory by 80%. The method has been validated according to 2002/657EC criteria in muscle, liver and milk. The technology is currently being applied on the EU FP6 project *ProSafeBeef* to investigate the safety of EU beef.