

MULTI-RESIDUE DETERMINATION OF SEVENTEEN SULFONAMIDES AND FIVE TETRACYCLINES IN FISH TISSUE USING A MULTI-STAGE LC-ESI-MS/MS APPROACH BASED ON ADVANCED MASS SPECTROMETRIC TECHNIQS.

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In this work, a strategy was newly developed to rapidly screen seventeen sulfonamides and five tetracyclines in a single run from the fish tissue using ultra-high-performance liquid chromatography (UHPLC) coupled with comprehensive mass spectrometric approaches including precursor ion scan and data dependent scan.

The product ions for precursor-ion scanning were selected by studying the MS/MS fragmentation of the analytes. All sulfonamides share the same diagnostic product ion at m/z 156 in positive MS/MS scan while for tetracycline antibiotics the diagnostic product ion was proved to be at m/z 153.8. Further characterization of each compound was performed using a data dependent scan. The collision energy selected for the fragmentation of each compound to the product ion was optimised as well as the ion-abundance threshold settings for data-dependent acquisition. This approach has proven to be a highly selective, sensitive tool for rapid screening and detection of non targeted components in fish tissue and requires a minimum sample preparation such as one extraction step and a clean up step using dispersive SPE.