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Automated HPLC determination of ofloxacin in chicken meat with on-line microextraction

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Antibiotics are used not only to treat food animals but also to prevent them from developing diseases and to promote their growth. Abuse in food animals has important consequences for public health, as it promotes the development of antibiotic-resistant bacteria and resistance genes that can be passed on to people [Europe, World Health Organization. ISBN 978 92 890 1421 2]. Thus, the monitoring of antibiotics presence in food products is an important challenge of public health.

There are quite numerous techniques for the determination of antibiotics in food samples. Most of them are based on capillary electrophoresis (CE) and HPLC. However, due to the complex matrix there is a necessity to carry out multi-step tedious sample preparation, which often involves centrifugation. This circumstance makes it difficult to automate CE and HPLC determinations of antibiotics in food samples.

In the current study, on-line Dispersive liquid-liquid microextraction (DLLME) using switchable polarity dispersant coupled with HPLC system has been developed. The method proposed includes three sample preparation steps: US assisted extraction of ofloxacin from meat samples, filtration and following DLLME.

The proposed method was successfully applied to the determination of ofloxacin in chicken meat and the analytical results agreed well with the results obtained with reference CE method.

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