

7. Abstract

Several pharmaceuticals used in human and veterinary medicine could be detected in environment. To these compounds belongs Fluoroquinolones. Our work observed 4 fluoroquinolones (ofloxacin, norfloxacin, ciprofloxacin, enrofloxacin) in soils sample. Fluoroquinolones were determined by LC-FD. For extraction was used mixture of organic compounds (methanol: acetone; 1:1) and 1.0g of EDTA. Sample was 15 minutes shaken, 15 minutes in ultrasonic bath and 15 minutes of centrifugation. After that organic solution was evaporated by gentle stream of nitrogen in water bath. Rest from evaporation was dissolved in mQ-H₂O and clean-up was done. After evaporation after clean-up the rest was dissolved in mobile phase. Mobile phase was H₃PO₄: MeOH: ACN (920: 70: 10) and flow was 1.4mL/min.

Limit of quantification (LOQ) is For OFLO 5mg/L, for NOR is 0.083mg/L, for CIP is 0.116mg/L and for ENRO is 0.125mg/L. Mean recoveries ranged between 75% to 121%, for OFLO, NOR, CIPRO and ENRO.

At the beginning we tried also acidic type of extraction. Extraction was made with HCL, H₂SO₄, H₃PO₄ and HNO₃. In all cases we add EDTA because of interferences with other substances in samples.

We find out, that no complex is build between fluoroquinolones and EDTA. For clean-up from soil samples is better OASIS column HLB 6cc/200mg. Extraction in acidic conditions is suitable for extraction from water and sandy soil (without organic matter and microorganism). Stability study was done and Fluoroquinolones were stable minimal for one week at 4°C. Samples are stable minimal for 2 days at same temperature. Fluoroquinolones are decomposed at normal temperature and on the light (under UV).

