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Simultaneous determination of the residues of fourteen quinolones and fluoroquinolones in fish samples using liquid chromatography with photometric and fluorescence detection

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A chromatographic method is described for assaying fourteen quinolones and fluoroquinolones (pipemidic acid, marbofloxacin, norfloxacin, ciprofloxacin, danofloxacin, lomefloxacin, enrofloxacin, sarafloxacin, difloxacin, oxolinic acid, nalidixic acid, flumequine, and pyromidic acid) in fish samples. The samples were extracted with *m*-phosphoric acid/acetonitrile mixture (75:25, v/v),

purified, and preconcentrated on ENV + Isolute cartridges. The determination was achieved by liquid chromatography using C_{18} analytical column. A mobile phase composed of mixtures of methanol-acetonitrile-10mM citrate buffer at pH 4.5 delivered under optimum gradient program, at a flow rate of 1.5 ml/min, allows accomplishing the chromatographic separation in 26 minutes. For the detection were used serial
UV-visible diode-array at 280 nm and 25 nm and fluorescence detection at excitation wavelength/emission wavelength: 280/450, 280/495, and 280/405 nm. The detection and quantification limits were between 0.2 – 9.5and 0.7 – 32 µg/kg, respectively. The procedure was applied to the analysis of