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Determination of 17 α -ethynylestradiol, carbamazepine, diazepam, simvastatin, and oxybenzone in fish livers

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ABSTRACT

A method using liquid chromatography/tandem mass spectrometry (LC/MS/MS) was developed for the determination of 17 α -ethynylestradiol in fish liver; a second method using LC/MS was developed for the determination of carbamazepine, diazepam, simvastatin, and oxybenzone in fish liver. The fish liver samples were extracted and cleaned up by using liquid-liquid extraction and solid-phase extraction before the extracts were analyzed by LC/MS or LC/MS/MS with electrospray negative and positive ionization. Recoveries of the 5 target compounds from spiked catfish liver ranged from $72 \pm 2\%$ to $100 \pm 3\%$. Limits of quantification for the 5 compounds were between 4.2 and 12.3 ng/g (wet weight). Ten turbot (*Pleuronichthys verticalis*) liver samples were analyzed; levels of 17 α -ethynylestradiol, carbamazepine, diazepam, simvastatin, and oxybenzone were below the detection limits. Diazepam was detected in all 10 fish liver samples as concentrations ranging from 23 to 110 ng/g (wet weight).

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