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### Determination of 17 $\alpha$ -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 $\alpha$ -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 five target compounds from spiked catfish liver ranged between 72  $\pm$  2% and 100  $\pm$  3%. Quantification limits for the five compounds ranged between 4.2 and 12.3 ng/g (wet weight). Ten turbot (*Pleuronichthys verticalis*) liver samples were analyzed; levels of 17 $\alpha$ -ethynylestradiol, carbamazepine, simvastatin, and oxybenzone were below the detection limits. Diazepam was detected in all 10 fish liver samples at concentrations ranging between 23 and 110 ng/g (wet weight).

#### Full Text

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