



## Closed-loop stripping analysis of synthetic musk compounds from fish tissues with measurement by gas chromatography–mass spectrometry with selected-ion monitoring

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### Abstract

Synthetic musk compounds have been found in surface water, fish tissues, and human breast milk. Current techniques for separating these compounds from fish tissues require tedious sample clean-up procedures. A simple method for the determination of synthetic musk compounds in fish tissues has been developed. Closed-loop stripping of saponified fish tissues in a 1-l Wheaton purge-and-trap vessel is used to strip compounds with high vapor pressures such as synthetic musks from the matrix onto a solid sorbent (Absolut Nexus). This technique is useful for screening biological tissues that contain lipids for musk compounds. Analytes are desorbed from the sorbent trap sequentially with polar and nonpolar solvents, concentrated, and directly analyzed by high resolution gas chromatography coupled to a mass spectrometer operating in the selected ion monitoring mode. In this paper, we analyzed two homogenized samples of whole fish tissues with spiked synthetic musk compounds using closed-loop stripping analysis and pressurized liquid extraction (PLE). The analytes were not recovered quantitatively but the extraction yield was sufficiently reproducible for at least semi-quantitative purposes (screening). The method was less expensive to implement and required significantly less sample preparation than the PLE technique.

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