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Zahra Ramezani, Roya Mirzajani, Fatemeh Kardani

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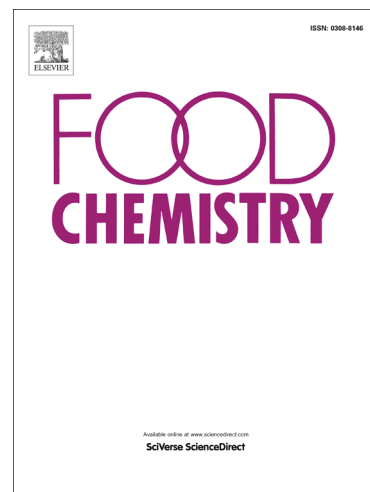
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A novel ultrasound-assisted back extraction reverse micelles method coupled with gas chromatography-flame ionization detection for determination of aldehydes in heated edibles oils

Zahra Ramezani ^a, Roya Mirzajani* ^b, Fatemeh Kardani ^b

^aFaculty of Pharmacy, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

^bChemistry Department, College of Science, Shahid Chamran University of Ahvaz, Iran

Abstract

A novel ultrasound-assisted back extraction reverse micelles coupled with gas chromatography-flame ionization detection has been developed for the extraction and determination of some short chain aldehydes in different heated edible oil samples. After the homogenization of the oil samples with Triton X-100, 200 μL of methanol was added to facilitate the phase separation. The aqueous micelle phase has been separated by centrifugation, then it was treated with a mixture of H_2O : CHCl_3 and ultrasonic vibration, were used to effectively back-extraction of the analytes into the chloroform phase. The sedimented organic phase was obtained after centrifugation, withdrawn into the microsyringe and directly injected into the GC-FID system. The calibration graphs were linear in the range 0.05-20 mg L^{-1} . The limits of detection were in the range of 0.02-0.15 mg L^{-1} . This procedure was successfully applied for determination of propanal, butanal, hexanal and heptanal in real heated oil samples".

Keywords: Edible oils, propanal, butanal, hexanal, heptanal, reverse micelle

Corresponding author: E-mail address: rmirzajani@scu.ac.ir (R. Mirzajani) Tel./ Fax +986113738044

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