

Web of Science

Search

Search Results

My Tools ▾

Search History

Marked List

110 of 752

Ultrasound-assisted temperature-controlled ionic liquid dispersive liquid-phase microextraction combined with reversed-phase liquid chromatography for determination of organophosphorus pesticides in water samples

By: **Albishri, HM** (Albishri, Hassan M.)^[1]; **Aldawsari, NAM** (Aldawsari, Naflaa A. M.)^[1]; **Abd El-Hady, D** (Abd El-Hady, Deia)^[2,3]

ELECTROPHORESIS

Volume: 37 Issue: 19 Pages: 2462-2469 Special Issue: SI

DOI: 10.1002/elps.201600107

Published: OCT 2016

[View Journal Impact](#)

Abstract

A rapid and sensitive ultrasound-assisted temperature-controlled ionic liquid (IL) dispersive liquid-phase microextraction (UTILDLPME) combined with reversed-phase liquid chromatography-ultraviolet (RPLC-UV) was developed for the determination of five organophosphorus pesticides (OPPs; azinphos-methyl, chloropyriphos, parathion-methyl, diazinon, and phosalone) in water samples. Parameters including IL type, IL volume, ionic strength, sonication time, heating/cooling temperature, centrifugal time, and speed were investigated. The extraction procedure was induced by the formation of cloudy solution, which was composed of 75 μ L of 1-butyl-3-methylimidazolium hexafluorophosphate ([C4MIM] PF6) dispersed entirely into 5 mL sample solution with the assistance of ultrasound for 3 min and temperature at 40 degrees C. Under optimal conditions, linearity of the five OPPs was obtained in the range of 0.09-200 ng/mL with correlation coefficients of 0.998 or more. Limits of detection and limits of quantitation ranged from 0.01 to 0.1 ng/mL and from 0.05 to 0.4 ng/mL, respectively. Compared with conventional microextraction techniques, the proposed UTILDLPME exhibited the highest extraction efficiency ranging between 90 and 98% for targeted OPPs. Furthermore, the proposed UTILDLPME/RPLC was successfully applied to different water samples (tap, well, and lake water) showing relative recoveries ranging from 96.9 to 103.2%. Therefore, UTILDLPME/RPLC-UV could be a simple, rapid, sensitive, and efficient routine technique for determination of OPPs in water.

Keywords

Author Keywords: HPLC; Ionic liquids; Microextraction; Organophosphorus pesticides; Ultrasound

KeyWords Plus: BIOLOGICAL-FLUIDS; PERFORMANCE; PRECONCENTRATION; EXTRACTION; HERBICIDES; HONEY

Author Information

Reprint Address: Abd El-Hady, D (reprint author)

Univ Jeddah, Dept Chem, Fac Sci, PO 80327, Jeddah 21589, Saudi Arabia.

Addresses:

[1] King Abdulaziz Univ, Dept Chem, Fac Sci, Jeddah, Saudi Arabia

Organization-Enhanced Name(s)

King Abdulaziz University

[2] Univ Jeddah, Dept Chem, Fac Sci, PO 80327, Jeddah 21589, Saudi Arabia

[3] Assiut Univ, Dept Chem, Fac Sci, Assiut, Egypt

E-mail Addresses: deiaabdelhady@yahoo.com

Citation Network

1 Times Cited

28 Cited References

[View Related Records](#)



Create Citation Alert

(data from Web of Science Core Collection)

All Times Cited Counts

1 in All Databases

1 in Web of Science Core Collection

1 in BIOSIS Citation Index

0 in Chinese Science Citation Database

0 in Data Citation Index

0 in Russian Science Citation Index

0 in SciELO Citation Index

Usage Count

Last 180 Days: 8

Since 2013: 9

[Learn more](#)

Most Recent Citation

Garcia, Carlos D. [Liquid-Phase Separation Methods for Environmental Analysis](#). ELECTROPHORESIS, OCT 2016.

[View All](#)

This record is from:

Web of Science Core Collection
- Science Citation Index Expanded

Suggest a correction

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

Publisher

WILEY-BLACKWELL, 111 RIVER ST, HOBOKEN 07030-5774, NJ USA

Categories / Classification

Research Areas: Biochemistry & Molecular Biology; Chemistry

Web of Science Categories: Biochemical Research Methods; Chemistry, Analytical

Document Information

Document Type: Article

Language: English

Accession Number: WOS:000388595400004

PubMed ID: 27338127

ISSN: 0173-0835

eISSN: 1522-2683

Other Information

IDS Number: ED1HH

Cited References in Web of Science Core Collection: **28**

Times Cited in Web of Science Core Collection: **1**