

JOURNAL OF AOAC INTERNATIONAL

A Peer-Reviewed Journal Publishing Basic
and Applied Research in the Analytical
Sciences Related to Foods, Drugs,
Agriculture, and the Environment

EDITORIAL BOARD

Sarwar Gilani, Chair
Steven Dentali, Past Chair
Swapan K. Banerjee
Joseph M. Belz
Joe Bolson
Paula N. Brown
Amit Chandra
Brendon Gill
James D. House
James Hungerford
Holly Johnson
Melissa Phillips
Bert Popping
Richard van Breemen
Guodong Zhang
Robert E. Rathbone, *Staff Liaison*

JOURNAL EDITORS

Animal and Plant Nutrition, Health, and Safety
Nancy Thies
Dietary Supplements
Albert E. Pohland
Drug Formulations and Clinical Methods
Samir Wahab
Food Biological Contaminants
Anthony D. Hitchins
Food Chemical Contaminants
Albert E. Pohland
Food Composition and Additives
Sarwar Gilani
Infant Formula and Adult Nutritionals
Sarwar Gilani
Microbiological Methods
Anthony Hitchins
Residues and Trace Elements
Alexander J. Krynskiy
Statistics and Chemometrics
George W. Latimer, Jr.
Veterinary Drug Residues
Joe Bolson
Acquisitions Editor
Joseph Sherna

JOURNAL STAFF

Publisher: E. James Bradford
Sr Director, Publications: Robert E. Rathbone
Production Manager: Jennifer Diaz
Production Editor: Tien L. Milor
Subscriptions: Chris Bradley

Advertising Sales:

AOAC INTERNATIONAL
2275 Research Blvd, Suite 300
Rockville, MD 20850, USA
Tel: +1-301-924-7077, Fax: +1-301-924-7089
E-mail: cbradley@aoac.org

AOAC BOARD OF DIRECTORS

President: Ronald L. Johnson
Past President: Norma R. Hill
President-Elect: DeAnn L. Benesh
Treasurer: Jonathan W. DeVries, Sr.
Secretary: Darryl M. Sullivan
Directors: Lei Bao
Jo Marie Cook
Clay Dettelsen, Esq.
Samuel Benrejeb Godefroy
Brad Goskowicz
Anthony J. Lupo
Daniel S. Fabricant
Daniel Schmitz
Stephen A. Wise
Director at Large:

Table of Contents

January/February 2017

Vol. 100, No. 1

JAINEE 100(1) 1-312 (2017)

- 6A Cumulative Author Index
- 7A Instructions for Authors
- 8A Journal Information
- 9A Celebrating the 100th Anniversary of the Publication of the Journal of AOAC International

COSMETICS

- 1 Optimization and Validation of a Fast UPLC Method for Simultaneous Determination of Hydroquinone, Kojic Acid, Octinoxate, Avobenzone, BHA, and BHT
Fanny Galimany-Rovira, Pilar Pérez-Lozano, Encarna García-Montoya, Montse Miñarro-Carmona, Josep R. Ticó-Grau, and Josep M. Suñé-Negre

DIETARY SUPPLEMENTS

- 8 Analysis of Closely Related Antioxidant Nutraceuticals Using the Green Analytical Methodology of ANN and Smart Spectrophotometric Methods
Mohamed A. Korany, Azza A. Gazy, Essam F. Khamis, Marwa A.A. Ragab, and Miranda F. Kamal
- 18 Determination of Mitragynine in *Mitragyna speciosa* Raw Materials and Finished Products by Liquid Chromatography with UV Detection: Single-Laboratory Validation
Elizabeth M. Mudge and Paula N. Brown
- 25 Quantitative Determination of Anthraquinones and Resveratrol in *Polygonum Cillinerve* (Nakai) Ohwi by HPLC-PAD
Yanfeng Wu, Xincheng Wang, Pu Liu, Qingshan Niu, and Qinan Wu
- 30 Chromatographic Fingerprints Combined with Chemometric Methods Reveal the Chemical Features of Authentic Radix Polygalae
Zhongquan Xin, Dabing Ren, Xiaojuan Zhang, Zhibiao Yi, and Lunzhao Yi

DRUG FORMULATIONS AND CLINICAL METHODS

- 38 Simultaneous Estimation of Ofloxacin, Clotrimazole, and Lignocaine Hydrochloride in Their Combined Ear-Drop Formulation by Two Spectrophotometric Methods
Kunjan Bodiwala, Shailesh Shah, Yogini Patel, Pintu Prajapati, Bhavin Marolia, and Gajanan Kalyankar
- 45 Bioanalytical Method Validation for Dronedarone and Duloxetine in Blood Serum
Renu Chadha, Alka Bali, and Gulshan Bansal

Copyright, 2017 by AOAC INTERNATIONAL, Inc. All rights reserved. The *Journal of AOAC INTERNATIONAL* [ISSN 1080-3271 (print), ISSN 1944-7922 (digital)] is published bimonthly by AOAC INTERNATIONAL, 2275 Research Blvd, Suite 300, Rockville, MD, 20850 USA. Subscriptions for Vol. 100 (2017) are: Members, \$470.00 in North America, \$570.00 outside North America; Nonmembers, \$690.00 in North America, \$810.00 outside North America. Periodicals postage paid at Rockville, Maryland, USA, and additional mailing offices. Abstracted or indexed in AGRICOLA, Analytical Abstracts, Biological Abstracts, Cambridge Scientific Abstracts, Chemical Abstracts, Current Advances in Ecological Sciences, Current Contents, and others. Printed in USA.

POSTMASTER: Send address changes to *Journal of AOAC INTERNATIONAL*, 2275 Research Blvd, Suite 300, Rockville, MD, 20850 USA.

- 51 TLC-Densitometric and RP-HPLC Methods for Simultaneous Determination of Dexamethasone and Chlorpheniramine Maleate in the Presence of Methylparaben and Propylparaben
Nehal F. Farid, Ibrahim A. Naguib, Radwa S. Moatamed, and Mohamed R. El Ghobashy
- 59 Simultaneous Determination of Ursodeoxycholic Acid and Chenodeoxycholic Acid in Pharmaceutical Dosage Form by HPLC–UV Detection
Mostafa A. Khairy and Fotouh R. Mansour
- 65 Development and Validation of a Reversed-Phase Chiral HPLC Method to Determine the Chiral Purity of Bulk Batches of (S)-Enantiomer in Afoxolaner
Nilusha Padivitage, Satish Kumar, and Abu Rustum
- 74 Development and Validation of a Fast Stability-Indicating Ion-Paired Reversed-Phase HPLC Method for the Assay of Thiabendazole and Estimation of Its Related Compounds
Peng Zhang, Jingzhi Tian, and Abu Rustum

FOOD BIOLOGICAL CONTAMINANTS

- 82 Evaluation of 3M Molecular Detection Assay (MDA) 2-*Listeria* for the Detection of *Listeria* Species in Select Foods and Environmental Surfaces: Collaborative Study, First Action 2016.07
Patrick Bird, Jonathan Flannery, Erin Crowley, James Agin, David Goins, and Lisa Monteroso
- 99 Development of Loop-Mediated Isothermal Amplification (LAMP) Assay for the Rapid Detection of *Alternaria alternata*
Xinyue Zhang, Guojie Xu, Huaqi Tang, Yanpeng Li, and Chunsheng Liu

FOOD COMPOSITION AND ADDITIVES

- 104 Development of a Multiplex PCR System for the Simultaneous Detection of the Shrimp Species *Fenneropenaeus chinensis*, *Litopenaeus vannamei*, and *Penaeus monodon*
You-Won Lee, Seung-Ha Lee, Chun-Feng Xin, Ji-Hun Shin, and Eun-Hee Shin
- 109 Analysis of Illicit Liquor by Headspace Gas Chromatography–Mass Spectrometry (HS-GC-MS): A Preliminary Study
Bhupinder Singh Punia, Praveen Kumar Yadav, Gurvinder Singh Bumbrah, and Rakesh Mohan Sharma
- 126 Survey of Thai Commercial Food Products That Have Been Reported to Contain No Wheat, Rye, Barley, or Gluten According to Their Labels
Vipa Surojanametaku, Sirinrat Srikuhnath, Pailin Channansin, Masahiro Shoji, and Hirotoshi Tamura
- 133 Determination of Bovine Lactoferrin in Food by HPLC with a Heparin Affinity Column for Sample Preparation
Yin Zhang, Fei Lou, Wei Wu, Xin Dong, Jia Ren, and Qiuguang Shen

INFANT FORMULA AND ADULT NUTRITIONALS

- 139 Vitamin C in Infant Formula and Adult/Pediatric Nutritional Formula by Liquid Chromatography with UV Detection: Collaborative Study, Final Action 2012.22
Esther Campos Giménez and Frédéric Martin
- 145 Determination of Biotin in Infant, Pediatric, and Adult Nutritionals by High-Performance Liquid Chromatography and Fluorescence Detection: Single-Laboratory Validation, First Action 2016.11
Qi Lin, Yi Ding, Fiona Poh, Chunyan Zhang, Shang-Jing Pan, and Karen J. Schimpf

MICROBIOLOGICAL METHODS

- 152 Investigation of the Virulence Factors and Molecular Characterization of the Clonal Relations of Multidrug-Resistant *Acinetobacter baumannii* Isolates
Hayssam M. Ali, Mohamed Z.M. Salem, Mohamed S. El-Shikh, Ahmed Abdel Megeed, Yahya A. Alogaibi, and Ibrahim Ahmed Talea

- 159 Development of a Liquid Chip Technique to Simultaneously Detect Spring Viremia of Carp Virus, Infectious Hematopoietic Necrosis Virus, and Viral Hemorrhagic Septicemia of Salmonids
Guixiang Tong, Xinxian Wei, Weili Yin, Xiaoguang Liao, Kai Yang, Zhishan Fang, Tao Sun, Zhiqin Yue, and Xiaozheng Li
- 165 Crystal Diagnostics Xpress™ LM Kit for the Rapid Detection of *Listeria monocytogenes* from Environmental Surfaces
Curtis H. Stumpf, Brian Bullard, Weidong Zhao, Stephanie Kuzenko-Hentosh, and Gary D. Niehaus

RESIDUES AND TRACE ELEMENTS

- 176 Multiresidue Analysis of Five Neonicotinoid Insecticides and Their Primary Metabolite in Cucumbers and Soil Using High-Performance Liquid Chromatography with Diode-Array Detection
Maha F. Abdel-Ghany, Lobna A. Hussein, and Noha F. El Azab
- 189 LC-MS/MS Validation of a Residue Analysis Method for Penicillin G and Its Metabolites in Commercial Orange Juice
Fadi Aldeek, Daniele Canzani, Matthew Standland, Walter Hammack, Jo-Marie Cook, Mark R. Crosswhite, and Ghislain Gerard
- 198 Modified Magnetic Nanoparticles as a Novel Sorbent for Dispersive Magnetic Solid-Phase Extraction of Triazine Herbicides in Aqueous Media
Alireza Feizbakhsh and Shokooh Ehteshami
- 206 A Validated Capillary Electrophoretic Method for the Determination of Olopatadine and Its Application to a Pharmaceutical Preparation of Eye Drops
Tufan Güray, Tugba Turan, Muzaffer Tınçel, and Ulku Dilek Uysal
- 212 Determination of Diphenylether Herbicides in Water Samples Using Dispersive Liquid-Liquid Microextraction Combined with High-Performance Liquid Chromatography
Yung-Hao Liu, Pai-Shan Chen, and Shang-Da Huang
- 218 Ionic Liquid-Bonded Fused Silica as a New Solid-Phase Microextraction Fiber for the Liquid Chromatographic Determination of Bisphenol A as an Endocrine Disruptor
Nasim Mohammadnezhad, Amir Abbas Matin, Naser Samadi, Ashkan Shomali, and Hassan Valizadeh
- 224 Development of a Dispersive Liquid-Liquid Microextraction Method Combined with UV-Visible Spectrophotometry for Determination of Trace Aluminum(III) in Water, Wastewater, Food, Biological, and Pharmaceutical Samples
Nasrin Taghipour Birgani and Shahla Elhami
- 230 Determination of Organic Impurities in Anthraquinone Color Additives D&C Violet No. 2 and D&C Green No. 6 by Ultra-High Performance Liquid Chromatography
H. H. Wendy Yang

STATISTICAL ANALYSIS

- 236 Analysis of Means (ANOM) as a Tool for Comparison of Sample Treatment Methods: Testing Various Mineralization Procedures for Selenium Determination in Biological Materials
Lubomir Prokeš, Jitka Hegrová, and Viktor Kanický

TECHNICAL COMMUNICATION

- 241 Application of an Accuracy Profile Strategy Based on the β -Expectation Tolerance Interval for the Validation of a Liquid Chromatography Analytical Method for the Quantification of Benzoic Acid and Its Salts in Different Foodstuffs
Abderrahmane Tighrine, Youcef Amir, and Marzouk Mamou

LIST OF STANDARDS

- 248 List of Standards including *Standard Method Performance Requirements*, *First and Final Action Official Methods*