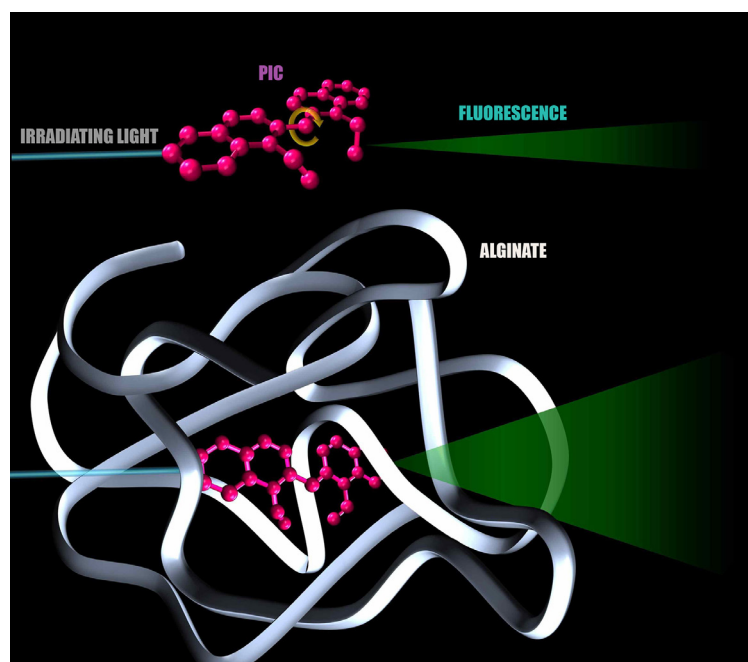


Cover Picture



When irradiated in clear solutions PIC has a very low fluorescence yield due to the internal conversion deactivation by the movement of the phenyl rings. In the presence of Alginate, the macromolecule clips the rings in a rigid position, avoiding rotation and promoting a much stronger emission. Details are presented in the Article **Behaviour of Pseudoisocyanine in Macromolecular and Hydrotropic Solutions** by *Lukese R. Menegussi, Silvano R. Valandro, Alessandra L. Poli, Carla C. Schmitt, Miguel G. Neumann* on page 1455.

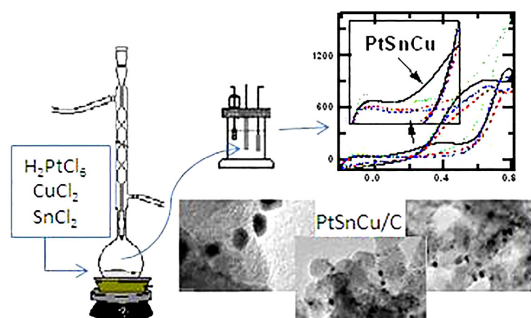
Contents

Articles

1317 Carbon-Supported PtSnCu, PtCu and PtSn Electrocatalysts for Ethanol Oxidation in Acid Media

Monah M. Magalhães and Flavio Colmati

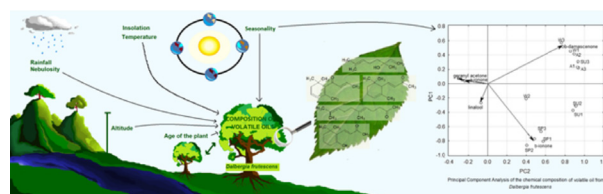
Graphical Abstract
Carbon supported ternary PtSnCu (1:1:1) catalysts were synthesized by reduction of the metal precursors in ethanol reflux and characterized by EDX, XRD and TEM analyses. Their activity for ethanol oxidation was compared with that of binary PtSn/C and PtCu/C prepared with the same method. A drastic decrease of the onset potential for ethanol electrochemical reaction on PtSnCu was observed



1326 Chemical Composition and Multivariate Analysis of the Volatile Oil of *Dalbergia frutescens* (Vell.) Britton (Fabaceae)

Caroline E. Mendes, Adriana Flach, Luiz A. M. A. da Costa,
Rosiane B. N. Denardin and Neusa F. de Moura

SI online



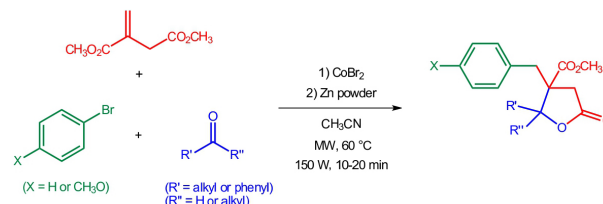
Graphical Abstract

Previous studies of *Dalbergia frutescens* have shown that the chemical composition of the essential oil is strongly influenced by cloudiness, rainfall, ambient temperature, and insolation. The present work demonstrated that the main compounds detected in this essential oil were strongly influenced by seasonality, mainly due to the levels detected of β -ionone and β -damascenone

1331 Microwave-Assisted Synthesis and Antileishmanial Activity of 3-methoxycarbonyl- γ -butyrolactone Derivatives

Marcos F. Pinatto-Botelho, Antonio E. M. Crotti, Julia M. de Souza, Lizandra G. Magalhães and Paulo M. Donato

SI online



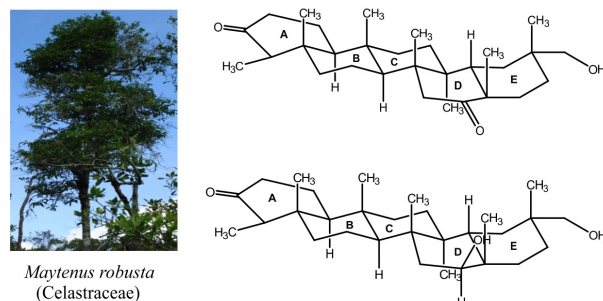
Graphical Abstract

This paper describes the microwave-assisted synthesis of ten 3-methoxycarbonyl- γ -butyrolactone derivatives and the evaluation of their *in vitro* antileishmanial activity against promastigote forms of *Leishmania amazonensis*

1338 Pentacyclic Triterpenes from Branches of *Maytenus robusta* and *in vitro* Cytotoxic Property Against 4T1 Cancer Cells

Grasiely Faria de Sousa, Daniel Cristian Ferreira Soares, Wagner da Nova Mussel, Nana Flora Elias Pompeu, Grácia Divina de Fátima Silva, Sidney Augusto Vieira Filho and Lucienir Pains Duarte

SI online



Graphical Abstract

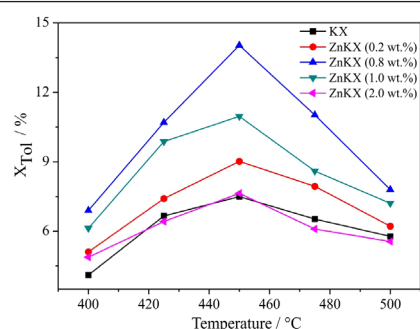
Two new triterpenes, 3,16-dioxo-29-hydroxyfriedelane and 3-oxo-16 β ,29-dihydroxyfriedelane were isolated from branches of *Maytenus robusta* and their powder crystal structures were established. The *in vitro* cytotoxicity of these two compounds and other four triterpenes was evaluated against 4T1 cancer cells

1346 Side-Chain Alkylation of Toluene with Methanol over Zn-Modified KX Zeolite

Lanlan Song, Yue Yu, Zhenrong Li, Shaoqing Guo, Liangfu Zhao and Wen Li

Graphical Abstract

The effect of Zn on side-chain alkylation of toluene with methanol over KX zeolite was carried out in a fixed-bed flow reactor under atmospheric pressure. The results showed that Zn addition had an excellent promoting effect on the side-chain alkylation of toluene, and the conversion of toluene over Zn-modified KX with a content of 0.8 wt.% was almost double that of KX at 450 °C

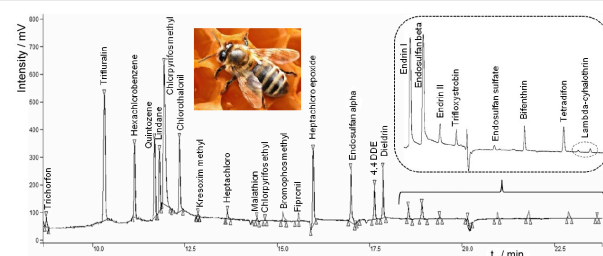


1355 Multiresidue Determination of Pesticide Residues in Honey by Modified QuEChERS Method and Gas Chromatography with Electron Capture Detection

Débora Orso, Manoel L. Martins, Filipe F. Donato, Tiele M. Rizzetti, Magali Kemmerich, Martha B. Adaime and Renato Zanella

Graphical Abstract

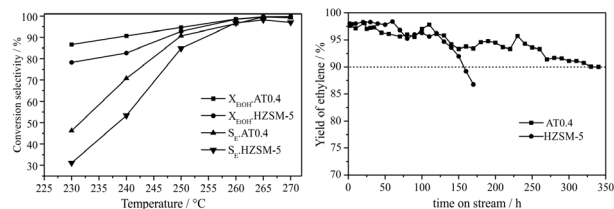
The production and consumption of honey have increased continuously, however, there is great concern about the contamination of honey by pesticides from crop fields or treatment of hives. Thus, to evaluate this potential risk a method for the determination of pesticide residues in honey by modified QuEChERS and gas chromatography with electron capture detection (GC-ECD) has been developed and validated



1365 Catalytic Dehydration of Ethanol to Ethylene over Alkali-Treated HZSM-5 Zeolites

Qingtao Sheng, Shaoqing Guo, Kaicheng Ling and Liangfu Zhao

SI online



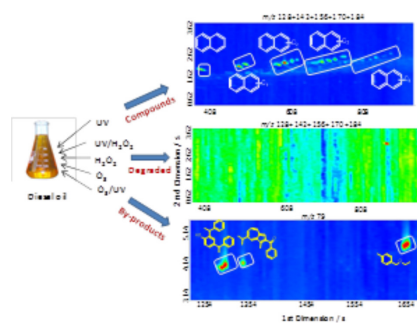
Graphical Abstract

The HZSM-5 catalyst with 0.4 mol L⁻¹ NaOH shows good catalytic performance for ethanol dehydration to ethylene. Both the changes in the acidic properties and in the porous structure contribute to the improvement in the catalytic performance

1372 Photochemical Degradation of Diesel Oil in Water: a Comparative Study of Different Photochemical Oxidation Processes and their Degradation By-Products

Morgana Frena, Cristiane R. Oliveira, Cesar A. da Silva, Luiz A. S. Madureira and Débora A. Azevedo

SI online



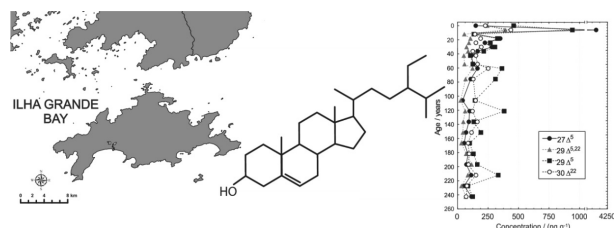
Graphical Abstract

A comparative study of different photochemical oxidation processes and a detailed characterization of the by-products of diesel oil degradation were performed using comprehensive two-dimensional gas chromatography coupled to time-of-flight mass spectrometry (GC×GC-TOFMS)

1380 Historical Evolution of Organic Matter Accumulation in a Coastal Bay in the SW Atlantic, Brazil: Use of Sterols and *n*-Alcohols as Molecular Markers

Eduardo C. Richard, Cláudia Hamacher, Cássia O. Farias, Marina P. Dore, Natália C. M. Ribeiro, Michelle A. Passos, Plínio F. Martinho, José M. Godoy and Renato S. Carreira

SI online



Graphical Abstract

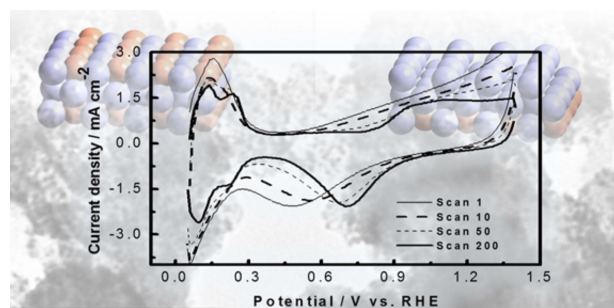
Sterols (e.g., cholesterol) and *n*-alcohols in four dated sediment cores were used to assess the sources of organic matter to a well preserved spot in the SW Brazilian coast

1391 CO and Ethanol Electro-Oxidation on Pt-Rh/C

Alfredo Calderón-Cárdenas, John E. Ortiz-Restrepo, Nelson D. Mancilla-Valencia, Gerardo A. Torres-Rodriguez, Fabio H. B. Lima, Alberto Bolaños-Rivera, Ernesto R. Gonzalez and William H. Lizcano-Valbuena

Graphical Abstract

The center image shows the changes in the voltammetric responses due to the scan potentials in order to obtain stable profiles of PtRh materials. This surface conditioning is relevant for the evaluation of the electrochemical response of the PtRh nanocatalysts for the oxidation of CO and of ethanol. The background images are the TEM micrograph of the catalysts tested in the article and the models of the nanomaterials

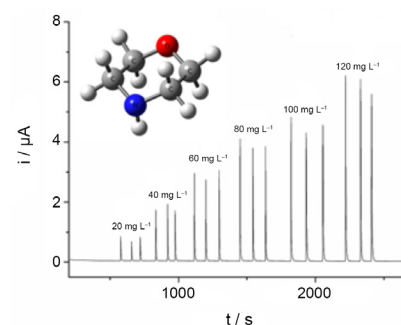


1399 Flow Injection Analysis with Amperometric Detection for Morpholine Determination in Corrosion Inhibitors

Sanair M. de Oliveira, Angelo Siguemura, Hugo O. Lima, Flávia C. de Souza, Alvaro A. O. Magalhães, Roberta M. Toledo and Eliane D'Elia

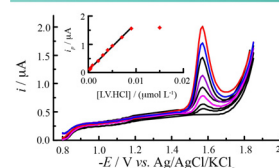
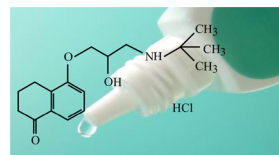
Graphical Abstract

In this work, an electrochemical method is proposed using flow injection analysis and amperometric detection with screen-printed carbon electrodes for morpholine determination which is present in commercial corrosion inhibitors



1407 Electrochemical Reduction and Stripping Voltammetric Determination of the Anti-Glaucoma Drug Levobunolol HCl in Formulation and Human Serum at the Mercury Electrode

Mohamed M. Ghoneim, Magdi K. Abdel-Azzem, Hanaa S. El-Desoky, Ahmed M. Ghoneim and Ahmed E. Khattab

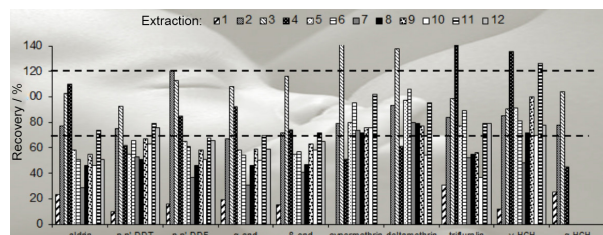


Graphical Abstract

Glaucomas are a family of “silent diseases”. In this work, precise, rapid and extraction-free square-wave adsorptive cathodic stripping voltammetry method has been developed for trace quantitation of anti-glaucoma drug levobunolol HCl in commercial formulation (ophthalmologic drops) and human serum. The method can be recommended for quantification of levobunolol HCl in quality control and clinical laboratories

1419 Simultaneous Determination of Different Classes of Pesticides in Breast Milk by Solid-Phase Dispersion and GC/ECD

Danielly C. A. Palma, Carolina Lourencetti, Marli E. Uecker, Paulo R. B. Mello, Wanderlei A. Pignati and Eliana F. G. C. Dore

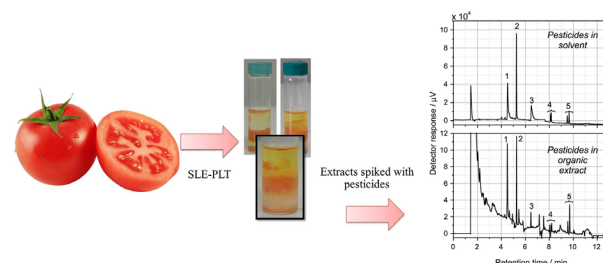


Graphical Abstract

A variety of solvent extractors were assessed to determine different classes of pesticides in human milk by solid-phase dispersion and GC/ECD. The multiresidue analytical method proposed combines extraction and clean up in a single step and quantification is performed by standard addition to avoid the matrix effect

1431 Influence of Ripening Stages of Tomatoes in the Analysis of Pesticides by Gas Chromatography

Flaviane A. de Sousa, Antônio A. Neves, Maria Eliana L. R. de Queiroz, Fernanda F. Heleno, Reinaldo F. Teófilo and Gevany P. de Pinho

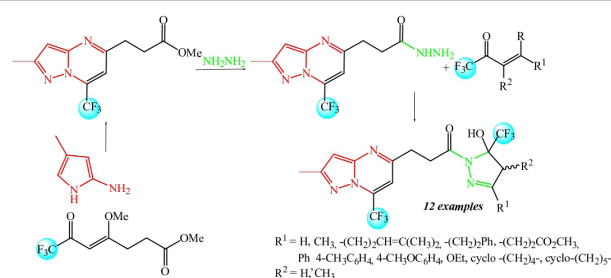


Graphical Abstract

Some parameters of tomato fruit were evaluated during the ripening of fruits. These data were correlated with the observed matrix effect on the analysis of five pesticides in organic extracts obtained in the SLE-PLT by GC-ECD

1439 Efficient Synthesis of New Biheterocyclic 5-[(5-Trifluoromethyl-5-hydroxy-4,5-dihydro-1H-pyrazol-1-yl)-1-propan-1-one-3-yl]-2-methyl-7-trifluoromethylpyrazolo[1,5-a]pyrimidines

Alex F. C. Flores, Pauline F. Rosales, Juliana L. Malavolta and Darlene C. Flores

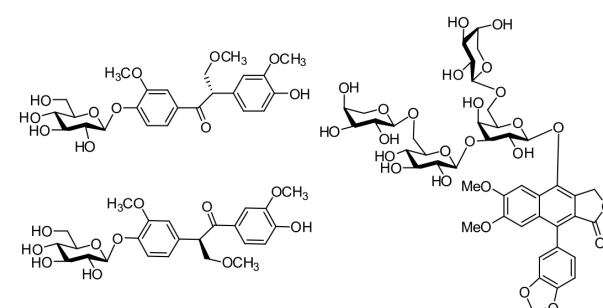


Graphical Abstract

New propionyl-spaced biheterocycles 5-[(5-trifluoromethyl-5-hydroxy-4,5-dihydro-1H-pyrazol-1-yl)-1-propan-1-one-3-yl]-2-methyl-7-trifluoromethylpyrazolo[1,5-a]pyrimidines were synthesized by two successive regiospecific cyclocondensations from methyl 7,7,7-trifluoro-4-methoxy-6-oxo-4-heptenoate

1446 New Phenolic Glycosides from *Phyllanthus cochinchinensis*

Jian-Qiang Zhao, Yan-Ming Wang, Jun-Jiang Lv, Hong-Tao Zhu, Dong Wang, Chong-Ren Yang, Min Xu and Ying-Jun Zhang



Graphical Abstract

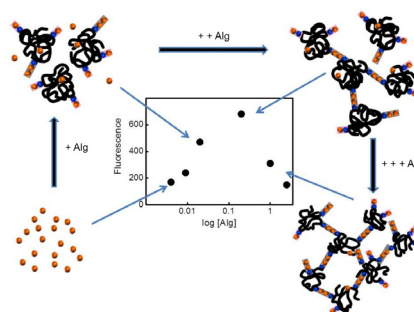
Three new phenolic glycosides, phyllanthuosides A-C, together with twelve known compounds were isolated from the whole plants of *Phyllanthus cochinchinensis*

1455 Behaviour of Pseudoisocyanine in Macromolecular and Hydrotropic Solutions

Lukese R. Menegussi, Silvano R. Valandro, Alessandra L. Poli, Carla C. Schmitt and Miguel G. Neumann

Graphical Abstract

The behaviour of PIC in hydrotropes and alginate was studied by emission spectroscopy. The emission due to J-aggregates (570 nm) increases with the amount of alginate in PIC solutions up to 0.2 g L^{-1} . At higher alginate concentrations, this emission decreases. Effects are due to the redistribution of the dye over the alginate anionic sites

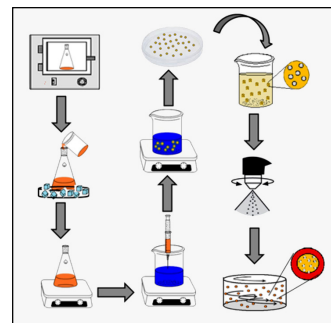


1462 Composite PHB/Chitosan Microparticles Obtained by Spray Drying: Effect of Chitosan Concentration and Crosslinking Agents on Drug Release

Luanda C. Lins, Giovana C. Bazzo, Pedro L. M. Barreto and Alfredo T. N. Pires

Graphical Abstract

The polymer poly(3-hydroxybutyrate) (PHB) and the drug were dissolved in the organic solvent and then emulsified in aqueous solution. To obtain the composite microparticles, we used the microparticles of PHB/ketoprofen (KET), adding them in a solution of 1, 1.5 and 2.0% chitosan (m/v). These were then subjected to spray drying when placed in the spray dryer apparatus. The surface film was modified using glutaraldehyde or genipin as the crosslinking agent

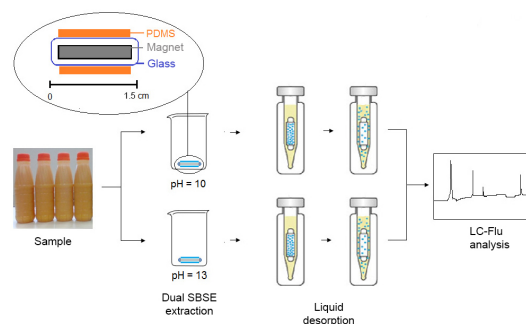


1472 Quantification of Harman Alkaloids in Sour Passion Fruit Pulp and Seeds by a Novel Dual SBSE-LC/Flu (Stir Bar Sorptive Extraction-Liquid Chromatography with Fluorescence Detector) Method

Cíntia A. M. Pereira, Thyago R. Rodrigues and Janete H. Yariwake

Graphical Abstract

A method for the quantification of the alkaloids harmane and harmine in sour passion fruit pulp and seeds by dual stir-bar sorptive extraction and high performance liquid chromatography with fluorescence detection (SBSE-LC/Flu) is described

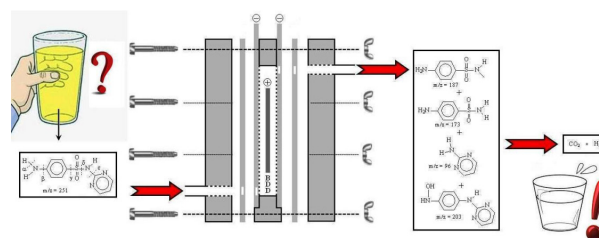


1484 Performance and Kinetic-Mechanistic Aspects in the Electrochemical Degradation of Sulfadiazine on Boron-Doped Diamond Electrode

SI online Kamila P. de Amorim, Lincoln L. Romualdo and Leonardo S. Andrade

Graphical Abstract

Under optimized conditions, SDZ was virtually all mineralized and the intermediate compounds were properly identified by GC-MS. An oxidation pathway of the SDZ electrochemical degradation was proposed

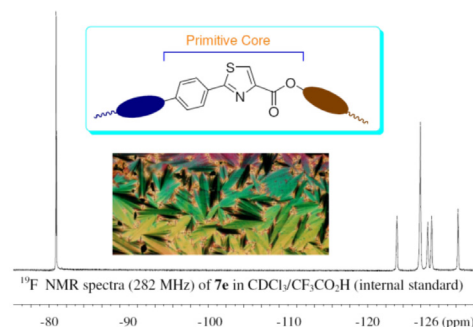


1493 Synthesis of New Family of Thiazoline and Thiazole Esters and Investigation of their Thermal Properties

SI online Juliana M. F. M. Schneider, Eric S. Sales, Paolo R. Livotto, Paulo H. Schneider and Aloir A. Merlo

Graphical Abstract

Thiazole esters display smectic A mesophase (SmA) for compounds where the variable connection is derived from (perfluoralkyl)alkyl esters

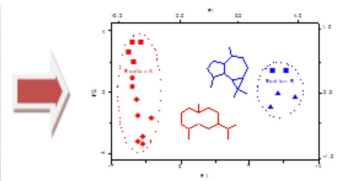


1504 Chemotaxonomy of *Marsypianthes* Mart. ex Benth. Based on Essential Oil Variability



SI online

Márcia Y. Hashimoto, Deomar P. Costa, Maria T. Faria,
Helena D. Ferreira, Suzana C. Santos, José R. Paula,
José C. Seraphin and Pedro H. Ferri

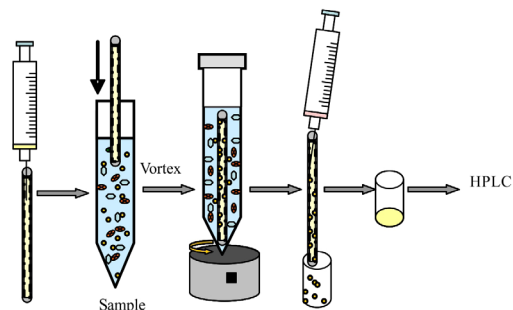


Graphical Abstract

Based on essential oil variability, seventeen populations of *Marsypianthes* (Lamiaceae) may be represented by two chemical sections, one containing *M. chamaedrys*/*M. montana* (A) and the other containing *M. burchellii* (B). *M. foliolosa* showed greater complexity and occurred in both sections

1512 Vortex-Assisted Hollow-Fiber Liquid-Phase Microextraction Coupled with High Performance Liquid Chromatography for the Determination of Three Synthetic Endocrine Disrupting Compounds in Milk

Yingtang Li, Guorong Yang, Jiao Zhao and Yaling Yang

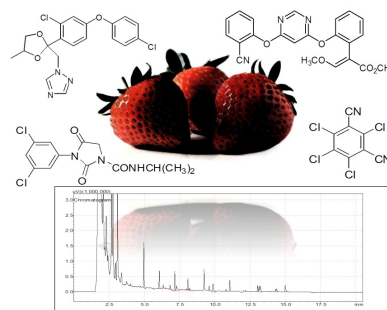


Graphical Abstract

Hollow-fiber liquid-phase microextraction of three kinds of synthetic endocrine disrupting compounds in milk, then detected by high-performance liquid chromatography (HPLC)

1520 A Simple and Efficient Method Employing Solid-Liquid Extraction with Low-Temperature Partitioning for the Determination/Monitoring of Pesticide Residues in Strawberries by GC/ECD

Tiago de J. Guedes, Fernanda F. Heleno, Marina de O. Amaral,
Nísia A. V. D. Pinto, Maria Eliana L. R. de Queiroz,
Daniele F. da Silva and Antônio A. da Silva



Graphical Abstract

The presence of pesticides was determined in samples of strawberries using solid-liquid extraction with low-temperature partitioning (SLE/LTP) and gas chromatography-electron capture detection (GC/ECD). Residues of azoxystrobin, difenoconazole, iprodione and chlorothalonil were found

1528 Spectroscopic, Electrochemical, Magnetic and Structural Investigations of Dimanganese-(II/II) and Mixed-Valence-(II/III)-Tetraiminodiphenolate Complexes



SI online

Julio C. da Rocha, Giordano Poneti, Janaina G. Ferreira,
Ronny R. Ribeiro and Fábio S. Nunes

Graphical Abstract

Spectroelectrochemistry of $[\text{Mn}^{\text{II}}_2(\text{tidf})(\text{OAc})(\text{ClO}_4)(\text{MeOH})]$ (tidf = a Robson type macrocycle detected the stabilization of mixed-valence $\text{Mn}_2(\text{II/III})$ species in solution. Crystallization of $[\text{Mn}^{\text{II}}_2(\text{tidf})(\text{OAc})(\text{ClO}_4)(\text{MeOH})]$ produced an uncommon trimanganese (III/II/III)-complex not observed in solution

