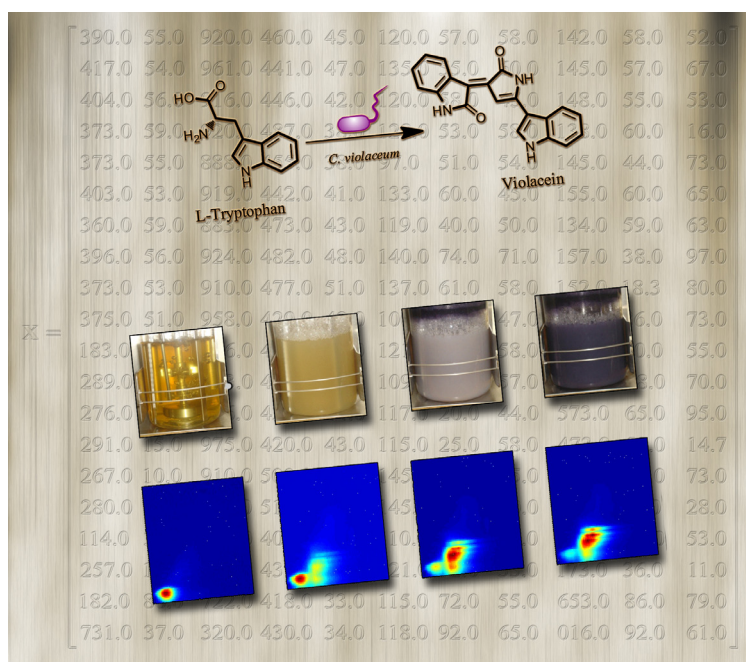


Cover Picture



A culture of *Chromobacterium violaceum* was cultivated in a bioreactor from which aliquots were collected every two hours and analyzed by multi-wavelength fluorescence spectroscopy. The mechanistic investigation of the violacein biosynthesis was then performed by the chemometric method parallel factor analysis (PARAFAC) that was applied to resolve the fluorescence profiles. Details are discussed in the Article **The Violacein Biosynthesis Monitored by Multi-Wavelength Fluorescence Spectroscopy and by the PARAFAC Method** by Clecio Dantas, Pedro L. O. Volpe, Nelson Durán and Márcia M. C. Ferreira on page 2054.

Contents

Editorial

1955 The Brazilian Chemical Industry
Pedro Wongtschowski

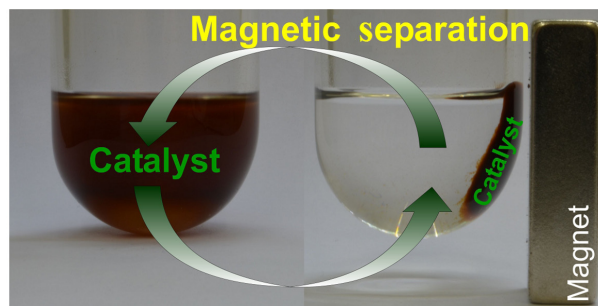
Account

1959 Recent Advances in the Development of Magnetically Recoverable Metal Nanoparticle Catalysts

Liane M. Rossi, Marco A. S. Garcia and Lucas L. R. Vono

Graphical Abstract

The immobilization of catalytic active species (metal nanoparticles, metal complexes, enzymes, organocatalysts, etc.) on superparamagnetic nanoparticles allows the facile separation of catalysts from the reaction mixture with the application of an external magnetic field



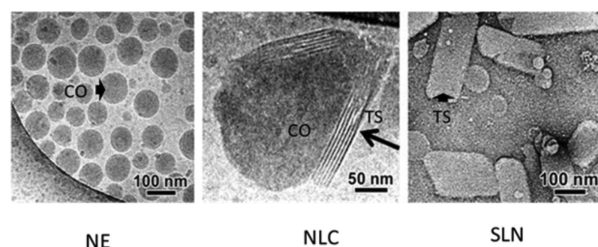
Articles

1972 Physicochemical and Morphological Characterizations of Glycerol Tristearate/Castor Oil Nanocarriers Prepared by the Solvent Diffusion Method

Cristiana L. Dora, Jean-Luc Putaux, Isabelle Pignot-Paintrand, Frédéric Dubreuil, Valdir Soldi, Redouane Borsali and Elenara Lemos-Senna

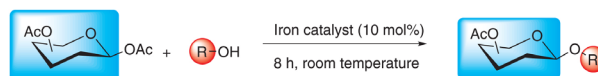
Graphical Abstract

Structural characterizations of drug lipid nanocarriers made from castor oil (CO) and tristearin (TS). NE: nanoemulsions, NLC: nanostructured lipid carriers, SLN: solid nanocarriers



1982 Iron(III) Chloride Catalyzed Glycosylation of Peracetylated Sugars with Allyl/Alkynyl Alcohols

Senthil Narayanaperumal, Rodrigo César da Silva, Julia L. Monteiro, Arlene G. Corrêa and Márcio W. Paixão



Graphical Abstract

The cost-effective ferric chloride showed to be an efficient catalyst for the glycosylation of sugars with allyl and alkynyl alcohols, thus leading to the corresponding glycosides in moderate to good yields. Salient features of this simple method include non-hazardous reaction conditions, low-catalyst loading, good yields and high anomeric selectivity

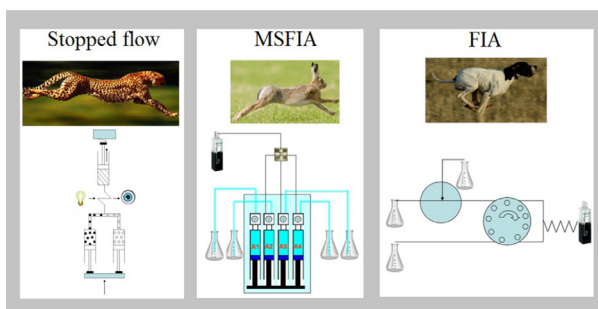
1989 A Multi-Syringe Flow System for Monitoring Moderately Fast Chemical Reactions

Victor Cerdà, Carlos Ubide and Juan Zuriarrain

SI online

Graphical Abstract

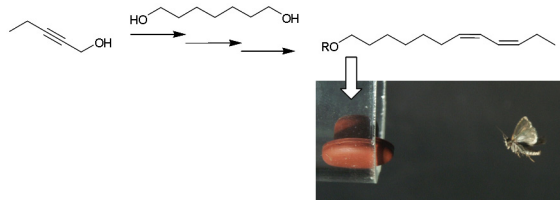
The bromine generation and the bromine-salicylic acid reactions have been used for validation of MSFIA in the zone stopping mode. The performance of the technique stays between those of FIA and the classical stopped-flow technique



1997 Synthesis and Field Evaluation of Synthetic Blends of the Sex Pheromone of *Crociosema aporema* (Lepidoptera: Tortricidae) in Soybean

SI online

Andrés González, Paula Altesor, Leticia Alves, Paola Liberati, Horacio Silva, Juan Ramos, Ignacio Carrera, David González, Gustavo Seoane, Carmen Rossini, Enrique Castiglioni and Daniela Gaménara



Graphical Abstract

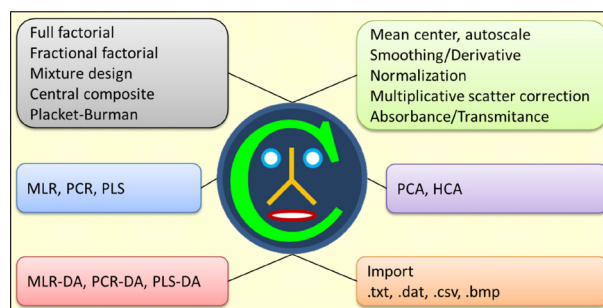
The sex pheromone of the tortricid soybean pest, *Crociosema aporema*, was synthesized from 2-pentynol and 1,7-heptanediol, and male captures with different pheromone blends were field-evaluated for the development of pheromone monitoring traps

2003 Chemoface: a Novel Free User-Friendly Interface for Chemometrics

Cleiton A. Nunes, Matheus P. Freitas, Ana Carla M. Pinheiro and Sabrina C. Bastos

Graphical Abstract

Chemoface is a free computational tool with user-friendly graphical interface, which is able to work with chemometric methods related to experimental design, pattern recognition, classification and multivariate calibration

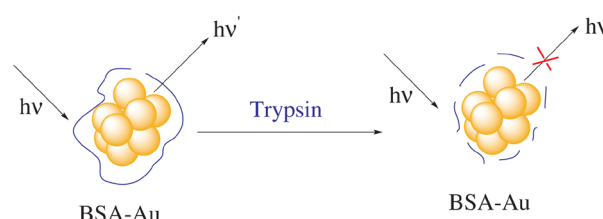


2011 A Sensitive Fluorescent Assay for Trypsin Activity in Biological Samples using BSA-Au Nanoclusters

Xianxiang Wang, Yanying Wang, Hanbing Rao and Zhi Shan

Graphical Abstract

A novel fluorescence analysis method based on trypsin digestion of the protein template of BSA-stabilized Au nanoclusters for sensitive and selective detection of trypsin activity was developed in this work. The methods are utilized potentially for determination of other proteases in clinical diagnostics of various diseases

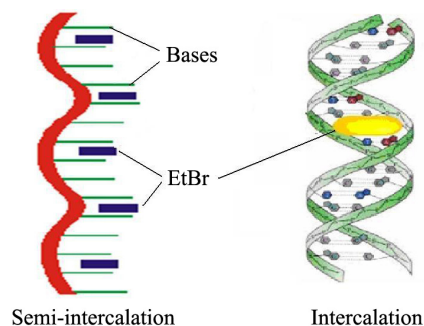


2016 The Influence of GC/AT Composition on Intercalating and Semi-Intercalating Binding of Ethidium Bromide to DNA

Poghos O. Vardevanyan, Ara P. Antonyan, Marine A. Parsadanyan, Mariam A. Shahinyan, Lilit A. Hambardzumyan, Margarita A. Torosyan and Armen T. Karapetian

Graphical Abstract

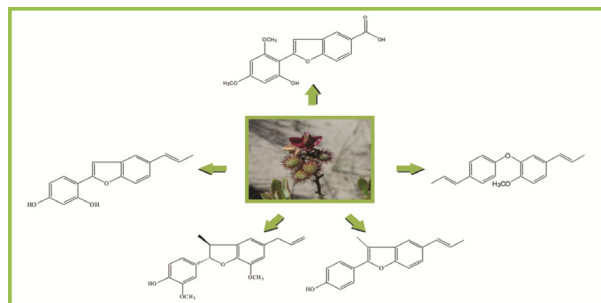
Semi-intercalating binding of EtBr occurs along with the ordinary intercalation



- 2021** **New Neolignans from *Krameria tomentosa* A. St.-Hil**
 Sara A. L. Madeiro, Hellane F. S. de Lucena, Caroline D. Siqueira,
 Marcelo C. Duarte, Raimundo Braz-Filho, José M. Barbosa Filho,
 SI online Marcelo S. da Silva and Josean F. Tavares

Graphical Abstract

Two new neolignans 1,1'-(*E*)-propenyl-4-methoxy-3,4'-oxyneolignan (ottomentosa) and 5-acid-2-(2'-hydroxy-4',6'-dimethoxyphenyl)-benzofuran (sobraline), together with three known neolignans, were isolated from the roots of *Krameria tomentosa* A. St.-Hil

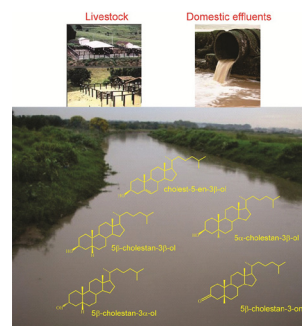


- 2027** **Regional Assessment of Sewage Contamination in Sediments of the Iguaçu and the Barigui Rivers (Curitiba City, Paraná, Southern Brazil) using Fecal Steroids**

Lucas Puerari, Renato S. Carreira, Artur C. B. Neto,
 Lilian C. Albarello and Fabiana D. C. Gallotta

Graphical Abstract

An evaluation of the contamination by sewage in sediments on a regional scale was performed in the Iguaçu River by considering sterols as indicators. Domestic effluents and manure from rural areas are the main source of contamination. The release of untreated sewage may pose a threat to river health during periods of small river water flow

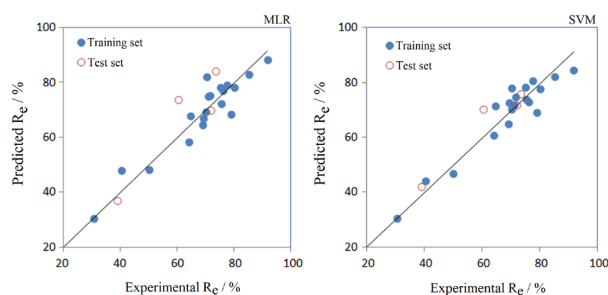


- 2035** **Prediction of Microdialysis Relative Recovery of Flavone Derivatives Based on Molecular Descriptors**

Shuyu Zhan, Jianping Huang, Qing Shao, Xiaohui Fan and
 Wenjing Guo

Graphical Abstract

Establish stable and predictive models of multiple linear regression (MLR) and support vector machine (SVM) to predict microdialysis relative recovery of flavone derivatives based on molecular descriptors

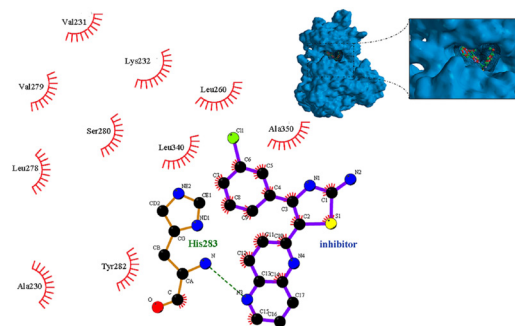


- 2043** **Interactions between Activin-Like Kinase 5 (ALK5) Receptor and its Inhibitors and the Construction of a Docking Descriptor-Based QSAR Model**

Malihe Ebrahimi, Taghi Khayamian and Sajjad Gharaghani

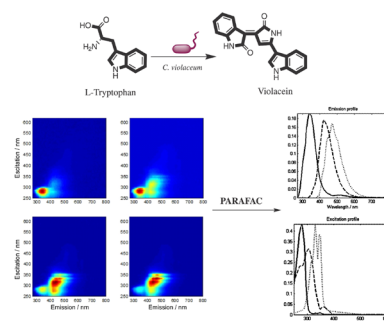
Graphical Abstract

Docking studies showed that hydrophobic and H-bond interactions are the key factors in the interactions between ALK5 and its inhibitors. Descriptors emerging from docking and molecular structure were used in structure-based QSAR model



- 2054 The Violacein Biosynthesis Monitored by Multi-Wavelength Fluorescence Spectroscopy and by the PARAFAC Method**
 Clecio Dantas, Pedro L. O. Volpe, Nelson Durán and
 Márcia M. C. Ferreira

Graphical Abstract
 Combining multi-wavelength fluorescence spectroscopy and the PARAFAC method to link the information obtained from spectral resolution to a biosynthetic pathway

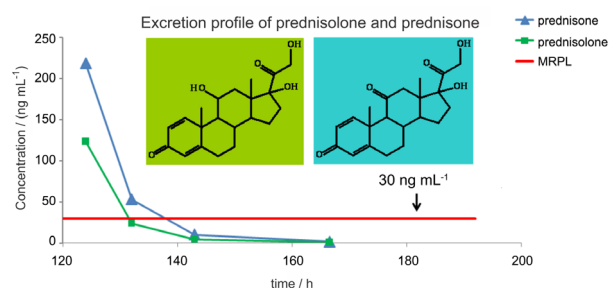


- 2065 Quantitative Approach to Glucocorticosteroids Analysis in Human Urine using LC-MS/MS**

Renata F. Soares, Amanda L. D. de Araújo, Juliana de L. Castro,
 Luis Nelson L. F. Gomes, Henrique M. G. Pereira and
 Francisco R. de Aquino Neto

SI online

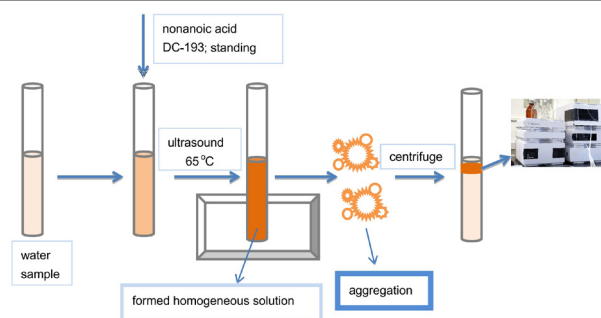
Graphical Abstract
 Urinary excretion profile of prednisolone and prednisone after oral administration of prednisolone. The concentration of 30 ng mL^{-1} is the parameter used to establish an adverse analytical finding to exogenous glucocorticosteroids



- 2075 Determination of Glucocorticoids using Cosurfactants Ultrasonic-Thermostatic-Assisted Cloud Point Extraction Followed by High Performance Liquid Chromatography**

Hui Qin, Gao Feng Li, Nan Chen and Ya Ling Yang

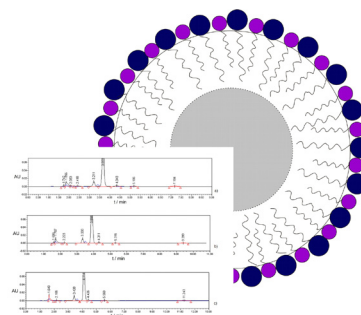
Graphical Abstract
 2 mL of the solution containing different concentrations of BD, HB and NPP→2.5 mL of DC-193 stock solution and 1 mL of nonanoic acid added→standing for 5 min→incubated into ultrasonic-thermostatic bath at 65°C for 30 min→centrifugation for 3 min at 4000 rpm→achieving a final volume of 0.5 mL by adding acetonitrile→injected into the HPLC system



- 2084 Physicochemical Factors Governing the Partition of Pramipexole and Its Five Impurities in Microemulsion Liquid Chromatographic Systems**

Ana M. Vemić, Anđelija M. Malenović, Tijana M. Rakić,
 Nada M. Kostić, Biljana S. Jančić-Stojanović,
 Darko P. Ivanović and Mirjana B. Medenica

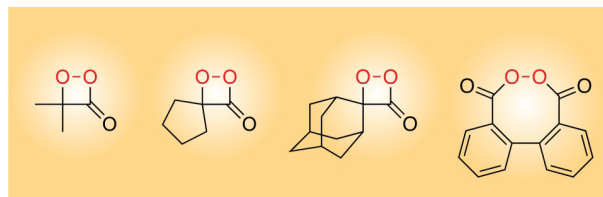
Graphical Abstract
 Influences of microemulsion droplet properties and column lipophilicity on partition behavior of pramipexole and its five impurities



2093 Synthesis of Unstable Cyclic Peroxides for Chemiluminescence Studies


SI online

Fernando H. Bartoloni, Marcelo A. de Oliveira,
Felipe A. Augusto, Luiz Francisco M. L. Ciscato,
Erick L. Bastos and Wilhelm J. Baader


Graphical Abstract

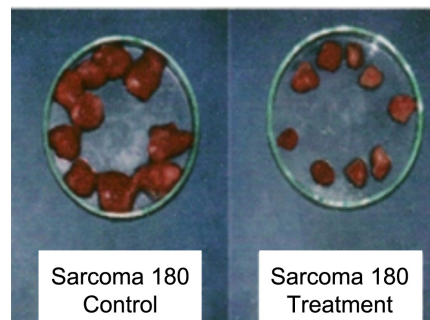
The synthesis, purification and characterization of diphenoyl peroxide and three 1,2-dioxetanones (α -peroxylactones), important high-energy intermediates in chemi and bioluminescence transformations, are reported

2104 Development and Validation of an LC-UV Method for Quantification of a New Thiazolidinedione (LPSF/AC-23) with Antitumor Activity in Rat Plasma

Raphael D. Valério, Ricardo M. Silva, Hellencléia P. Cunha,
Maria C. A. Lima, Suely L. Galdino, Ivan R. Pitta and
Maria Bernadete S. Maia

Graphical Abstract

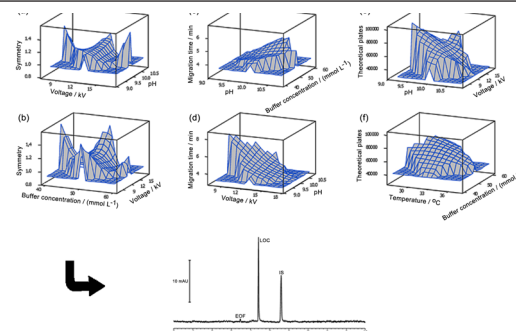
A quick and simple LC-UV method was developed and validated for quantification of LPSF/AC-23 (CAS No. 675868-75-4), a new antitumor agent in rat plasma. The proposed method can be applied in the quantitative determination of this promising molecule in pharmacokinetic bioavailability studies


2114 Lodenafil Carbonate Tablets: Optimization and Validation of a Capillary Zone Electrophoresis Method

Cristiane F. Codevilla, Pâmela Cristina L. Ferreira,
Maximiliano S. Sangoi, Pedro Eduardo Fröhlich and
Ana Maria Bergold

Graphical Abstract

A simple capillary zone electrophoresis method for determination of lodenafil carbonate in drug products was developed and validated. Response surface methodology was used for optimization of the pH and concentration of the buffer, applied voltage and temperature

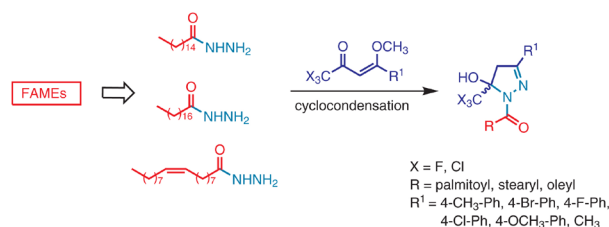


Short Report

2122 Regiospecific Synthesis of New Fatty N-Acyl Trihalomethylated Pyrazoline Derivatives from Fatty Acid Methyl Esters (FAMES)


SI online

Paulo Beck, Juliane M. dos Santos, Bruna L. Kuhn,
Dayse N. Moreira, Alex F. C. Flores, Marcos A. P. Martins,
Marcelo G. M. D'Oca and Luciana A. Piovesan


Graphical Abstract

An efficient and regiospecific route to new fatty N-acyl trihalomethylated pyrazoline derivatives from FAMES (fatty acid methyl esters) was developed

Additions and Corrections

2128 An Efficient Synthesis of D-Galactose-Based Multivalent Neoglycoconjugates

Addition related to the article published in Vol. 23, No. 6, 1062-1069, 2012.

2129 Seasonal Distribution of Airborne Trace Elements and Water-Soluble Ions in São Paulo Megacity, Brazil

Addition related to the article published in Vol. 23, No. 10, 1915-1924, 2012.

2130 Flavonoids from the Leaves of *Deguelia utilis* (Leguminosae): Structural Elucidation and Neuroprotective Properties

Addition related to the article published in Vol. 23, No. 10, 1933-1939, 2012.