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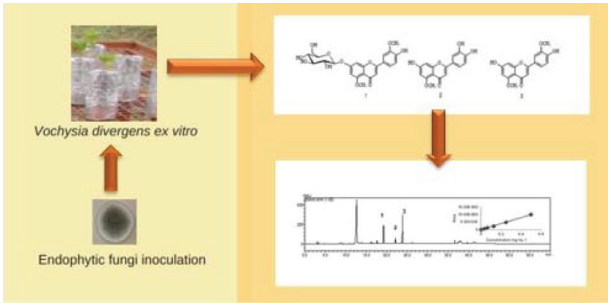
Artigo

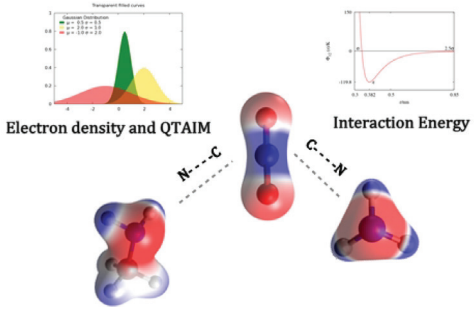
971 Development and validation of an HPLC-DAD analytical method to quantify 5-methoxyflavones in methanolic extracts of *Vochysia divergens* Pohl cultured under stress conditions
Letícia P. Pimenta, Luís C. Kellner Filho, Bruna A. S. Parpinelli, Katia A. de Siqueira, Marcos A. Soares, Márcio L. A. e Silva, Wilson R. Cunha, Patrícia M. Pauletti and Ana H. Januário

Development and validation of an HPLC-DAD analytical method to quantify 5-methoxyflavones in methanolic extracts of *V. divergens* cultured plants inoculated with endophytic fungi and subjected to water stress.



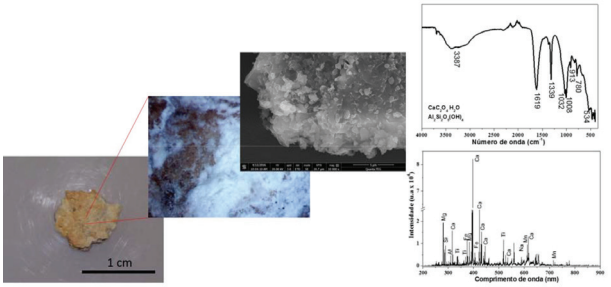
976 Estudio computacional de la interacción N···C en sistemas moleculares $(R)_nN\text{-}CO_2$ (n=1,2,3)
Cristian J. Guerra, Adolfo E. Ensuncho y Juana R. Robles

The N···C interaction is responsible for adsorption / absorption of CO_2 on amines.



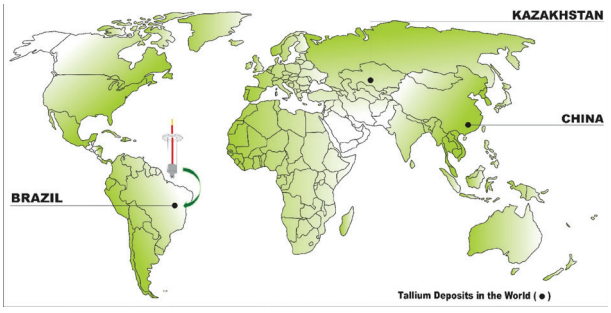
983 Estudo químico de eflorescências salinas do sítio arqueológico Toca Exú do Jurubeba do Parque Nacional Serra da Capivara, Piauí, Brasil
Benedito B. Farias Filho, Maria C. S. M. Lage e Rássius A. M. Lima

Chemical analysis of salt efflorescence of rock art sites aiming at the conservation of cultural heritage.

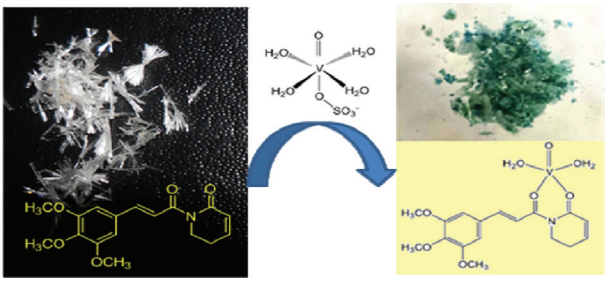


989 Desempenho do eletrodo de filme de paládio na determinação de tálio e chumbo em amostras de águas naturais por voltametria de redissolução anódica com pulso diferencial
Jorge L. O. Santos, Oldair D. Leite, Clayton R. Janoni, Djane S. de Jesus e Ana Mª P. dos Santos

Performance of a palladium film electrode for the determination of thallium and lead in Western Bahia, Brazil.

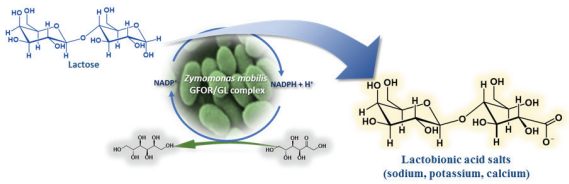


998 Um novo complexo híbrido formado a partir de piplartina e o íon vanadila: síntese, caracterização e estudo da atividade biológica
Giselle B. Bezerra, Janete M. Araújo, Mônica F. Belian, Wagner E. da Silva e Clécio S. Ramos



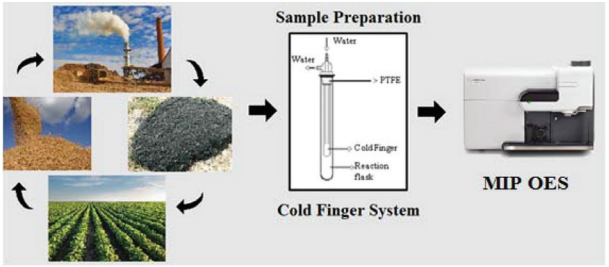
Synthesis, characterization and antimicrobial potential of amide piplartine and its complex with vanadyl ion.

1003 Bioproduction and characterization of sodium, potassium, and calcium lactobionates
Maria G. Delagustin, Eduarda Gonçalves, Sabrina Carra, Thiago Barcellos, Valquíria L. Bassani, Mauricio M. Silveira e Eloane Malvessi



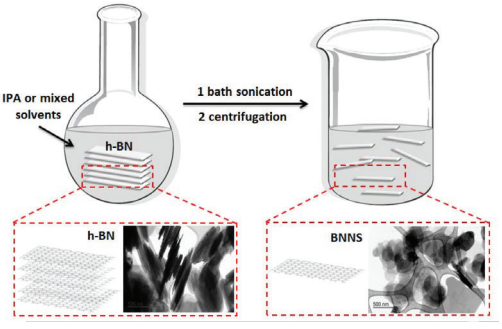
Lactobionic acid and its salts (lactobionates) are substances that have several applications in pharmaceutical area. These products were obtained by enzymatic complex glucose-fructose-oxidoreductase (GFOR)/gluconolactonase (GL) present in the periplasm of *Zymomonas mobilis* cells.

1009 Caracterização elementar da casca de arroz e suas cinzas por MIP OES após decomposição ácida com sistema de refluxo
Emanoelli R. Lopes, Aline L. Medina, Anderson S. Ribeiro, João N. Brandalise e Adriane M. Nunes



This paper presents an efficient method of preparation of samples of rice husk and rice husk ash for subsequent determination of metals by MIP OES.

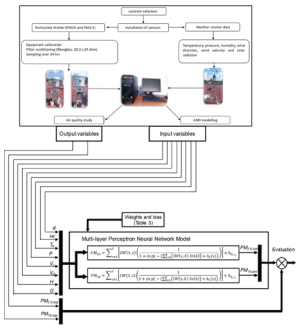
1018 Avaliação de diferentes rotas de esfoliação líquida para obtenção de nanolamelas de nitreto de boro hexagonal
Mayara R. Munaro, Heloisa N. da Motta, Joseane V. Gulmine, Luciane Tulio, Nuno G. Adonis, Marilda Munaro e Edemir L. Kowalski



Hexagonal boron nitride (h-BN) bulk was dispersed in isopropyl alcohol (IPA) or a mixture of IPA and deionized water and subjected to ultrasonication and centrifugation to obtain mono and a few layers suspension of h-BN nanosheets.

1025 Modelado de partículas PM_{10} y $PM_{2.5}$ mediante redes neuronales artificiales sobre clima tropical de San Francisco de Campeche, México

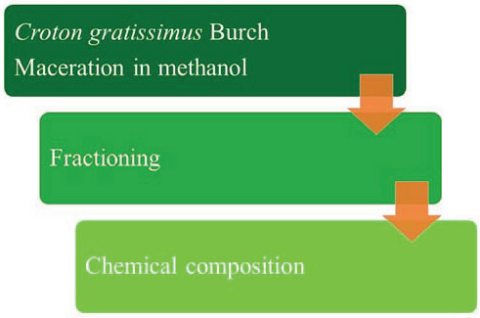
Alberto A. Espinosa Guzmán, Oscar M. Tzuc, Isaías Balam Pantí, Javier Reyes Trujeque, Ignacio V. Pérez Quintana y Ali Bassam



Multi-layer perceptron mathematical model developed for prediction of PM_{10} and $PM_{2.5}$ atmospheric particulate concentrations. The model was validated using experimental variables not included during the training and testing phases.

1035 Composição química de uma população de *Croton gratissimus* Burch (Euphorbiaceae)

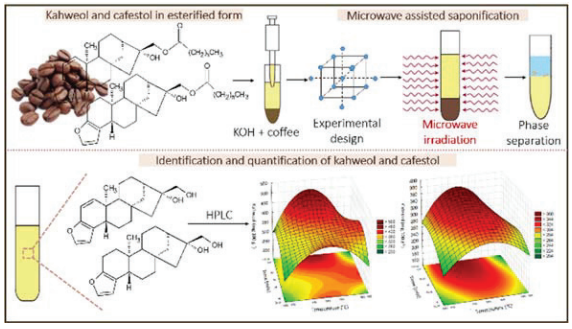
Laura I. N. Canelo, Isabel Mafuca, Rosalina S. Mata e Dina I. Mendonça



Chemical composition of *Croton gratissimus* Burch collected in Quiita, Angola, was evaluated and fourteen compounds were isolated.

1039 Saponificação assistida por micro-ondas na extração de diterpenos em café arábica torrado

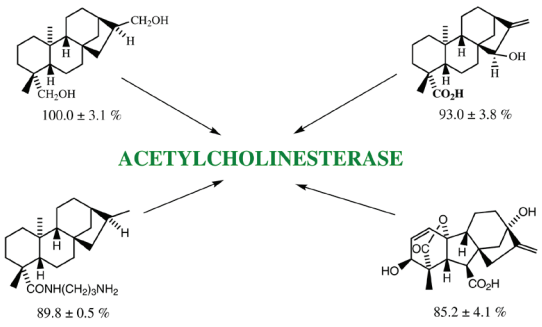
Mirelli Bianchin, Fabio Yamashita e Marta de T. Benassi



The saponification reaction to obtain kahweol and cafestol in roasted arabica coffee was performed in a microwave equipment, studying the effect of temperature and reaction time on the extraction of diterpenes.

1045 Structure-activity relationship study of diterpenes for treatment of Alzheimer's disease

Gabriel F. dos Santos, Rondinelle G. Pereira, Maria A. D. Boaventura, Francisco A. Macias, Gesiane da S. Lima, Amanda C. S. Coelho, Jose M. G. Molinillo, Antonio Cala, and Jacqueline A. Takahashi

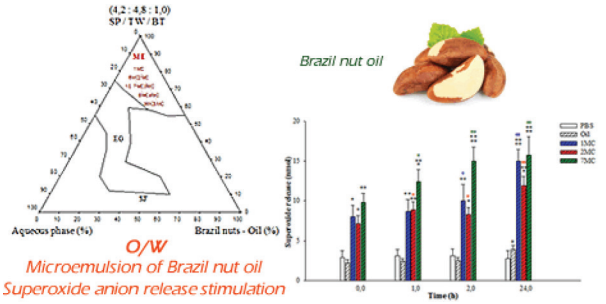


Natural kaurane diterpenes and semi-synthetic derivatives were highly active for acetylcholinesterase inhibition. Above are represented some of the most active compounds.

1051 Microemulsion of Brazil nut oil as a natural product to improve superoxide release in human phagocytes

Karol P. Fiori, Maycon de P. Ribeiro Torres, Jessica I. Schons, Elton B. Ribeiro, Roberta M. Nogueira, Leonardo G. Vasconcelos, Carla R. Andrighetti, Marcos J. Jacinto e Denia M. de S. Valladão

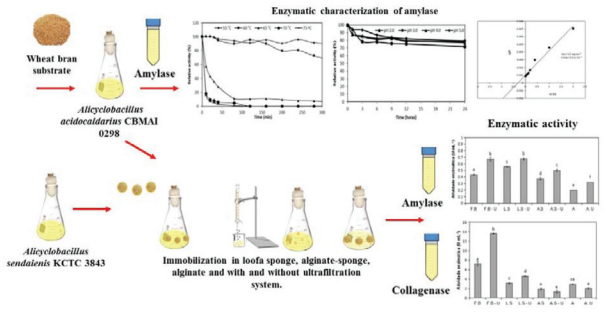
Development and characterization of microemulsion systems of Brazil nut oil and determination of the effect of this microemulsion on the release of superoxide in human phagocytes.



1058 Biosynthesis of industrial enzymes by free and immobilized *Alicyclobacillus* spp in different matrices and the use of ultrafiltration in the enzymes concentration

Suelen P. Ruiz, Juliana H. Miyoshi, Gabriela G. Gimenez, Camila O. Martinez, Benício A. de Abreu Filho and Graciette Matioli

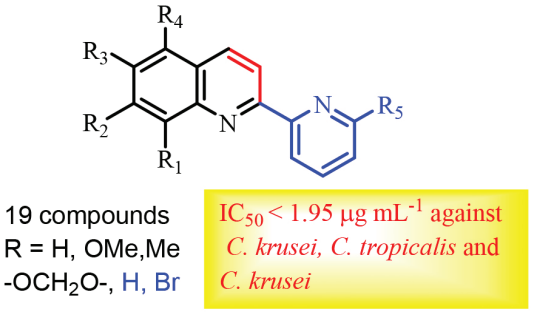
The biosynthesis of amylase and collagenase by *Alicyclobacillus acidocaldarius* and *A. sendaiensis* respectively, were studied, and different matrices evaluated for the immobilization of the microorganisms followed by concentration by ultrafiltration.



1065 Síntese de 2-(2-piridil)quinolinas promovida por micro-ondas e suas atividades antifúngicas

Carmindo R. Borel, Luiz C. A. Barbosa, Célia R. A. Maltha, Sergio A. Fernandes, Larissa B. Santos e Jacqueline A. Takahashi

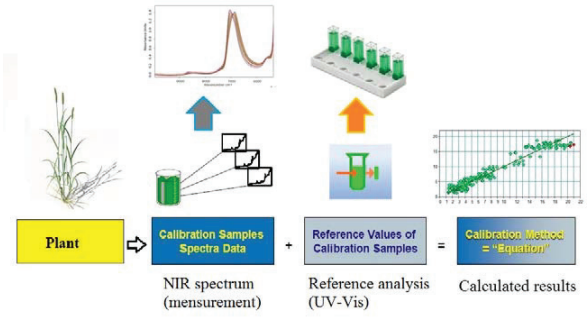
2-(2-Pyridyl)quinolines were obtained via a Povarov reaction under microwaves heating conditions and tested against *Candida* sp and *Cryptococcus neoformans*. Some compounds possessed a broad spectrum of action (IC_{50} < 1.95 μg mL^{-1}).



1074 Predição dos teores de compostos fenólicos e flavonoides na parte aérea das espécies *Secale cereale* L., *Avena strigosa* L. e *Raphanus sativus* L. por meio de espectroscopia no infravermelho próximo (NIR)

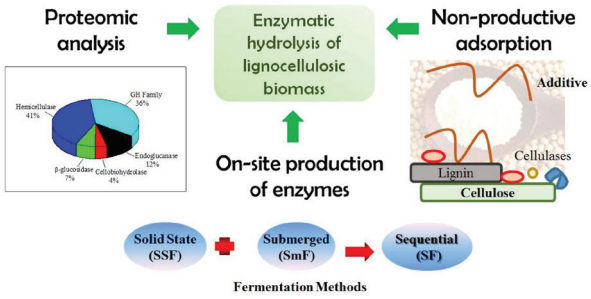
Monique Souza, Shirley Kuhnen, Daniele C. da S. Kazama, Claudinei Kurtz, Talita Trapp, Vilmar Müller Júnior e Jucinei J. Comin

Through the near infrared spectroscopy, from the spectrum reading, combinations of statistical methods and chemical data obtained in the laboratory, it is possible to construct calibration and validation models to quantify phenolic compounds in plants.



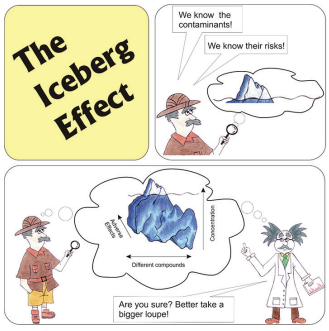
Revisão

1082 Desafios relacionados à produção e aplicação das enzimas celulolíticas na hidrólise da biomassa lignocelulósica
Camila Florencio, Alberto C. Badino e Cristiane S. Farinas



Schematic illustration of the potential strategies to address the current limitations of the enzymatic hydrolysis of lignocellulosic biomass: the production of enzymes on-site, the use of secretome analysis for enzymatic characterization and some approaches to reduce unproductive adsorption of enzymes onto lignin.

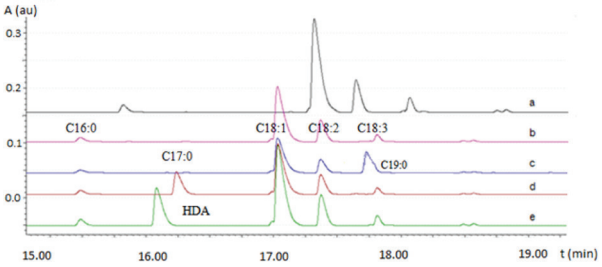
1094 Contaminantes emergentes em matrizes aquáticas do Brasil: cenário atual e aspectos analíticos, ecotoxicológicos e regulatórios
Cassiana C. Montagner, Cristiane Vidal e Raphael D. Acayaba



We know very little about the levels of emerging contaminants in Brazilian aquatic matrices. Our monitoring programs should go beyond the current regulated compounds.

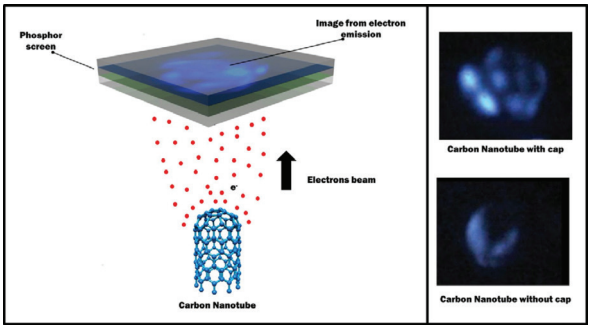
Nota Técnica

1111 GC-FID methodology validation for the fatty esters content determination in biodiesel with hexadecyl acetate as the internal standard
João V. Braun, Vinícius O. B. dos Santos, Luiz A. M. Fontoura, Evandro Pereira, Amanda Napp, Marcus Seferin, Jeane Lima, Rosane Ligabue e Marilene H. Vainstein



Canola biodiesel chromatograms: (a) ethyl, (b) methyl, (c) methyl spiked with C19:0, (d) methyl spiked with C17:0, (e) methyl spiked with HDA. Hexadecyl acetate is proposed as internal standard to the fatty ester content determination in biodiesel samples by GC-FID.

1117 Telas de fósforo para projeção de imagem
Marcos H. M. O. Hamanaka, Michele O. da Silva, Viviane N. Hamanaka e Thebano E. de A. Santos



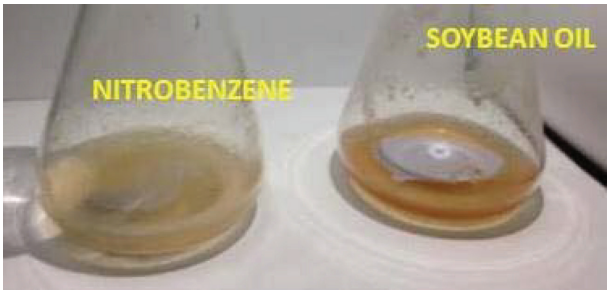
The phosphor screen integrated in the field emission microscope system allows: to evaluate if nanotubes have cap; estimate the area of emission; estimate the amount of nanotubes that are emitting; compare different emitters and study the emission behavior.

Educação

1121 Casos investigativos para a promoção da CSCL no Ensino Superior de Química
Patrícia F. de O. Cabral, Nilcimar dos S. Souza e Salete L. Queiroz

Undergraduate chemistry students' collaborative processes in a CSCL environment named eduqui.info.

1130 Substituição do nitrobenzeno pelo óleo de soja como uma proposta para o ensino do método de Volhard em análise quantitativa
Bárbara H. S. Vieira, Roberta B. P. Lã, José G. Rocha Jr., Otavio R. Lã e Cristina M. Barra



End points of the titrations performed for the determination of chloride by the Volhard method aided with nitrobenzene and soybean oil.
