química nova

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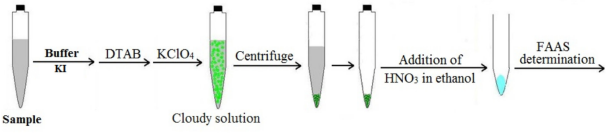
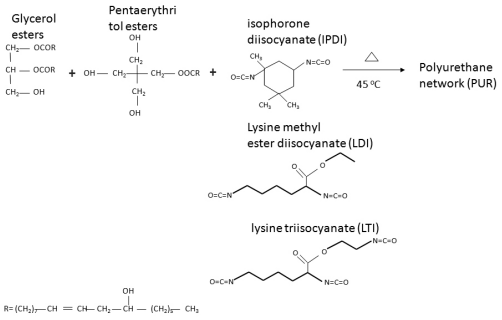
Artigo

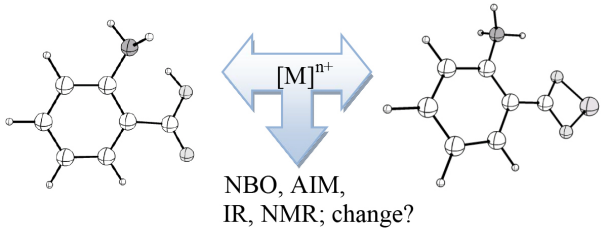
Graphical Abstract
In heavily polluted São Paulo (Brazil), indoor air quality in museums is impacted to varying degrees by particulate matter (PM) and black carbon (BC) particles that originate outdoors, primarily from motor vehicle emissions.



Graphical Abstract
Ligand-less in situ surfactant-based solid phase extraction for the preconcentration of copper from natural water samples prior to FAAS determination.

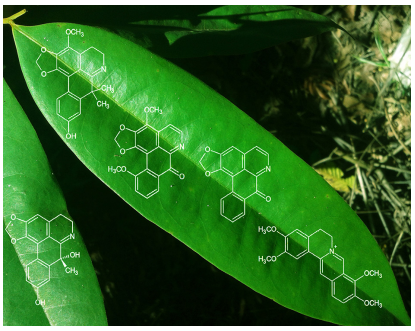


Graphical Abstract
Biodegradable polyurethanes (PUR) were prepared from polyols derived from castor oil by transesterification of pentaerythritol-modified castor oil and lysine polyisocyanates (LDI and LTI). This study aims to examine the effect of the structure and functionality of diisocyanate on the mechanical properties and in vitro degradation of the material.

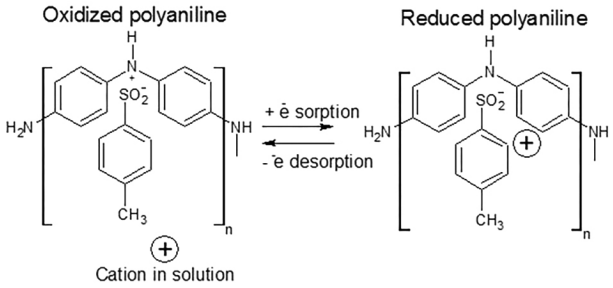


Graphical Abstract
Interaction of a Lewis acid with an amino acid weakens the H-O bond of the carboxylic acid group and results in a spontaneous proton transfer to the nitrogen generating a zwitterion structure that incorporates a strong stabilizing N-H...O hydrogen bonding.

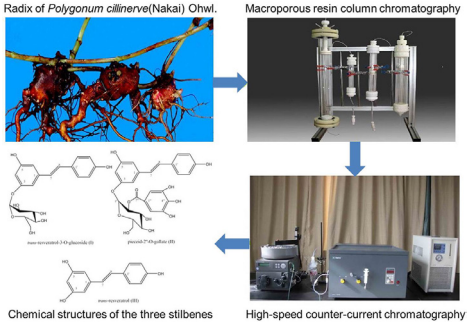
Graphical Abstract
Phytochemical investigations of the stem bark, leaves and twigs of *Guatteria citriodora* resulted in the isolation of aporphinoids and protoberberine alkaloids. The results for antiplasmodial and antibacterial activities were promising and attributed to alkaloidal constituents.



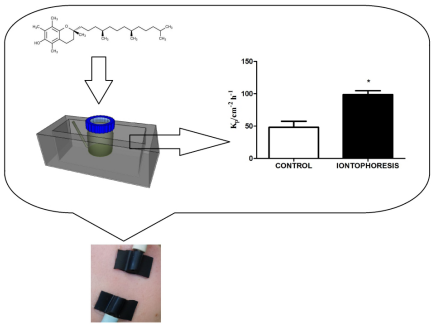
Graphical Abstract
Polyaniline was modified with the large anion *p*-toluenesulfonate to obtain cation-exchange properties.

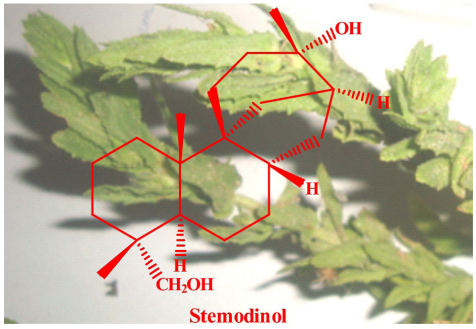


Graphical Abstract
trans-resveratrol-3-O-glucoside, pieceid-2"-O-gallate and trans-resveratrol were separated and purified from the radix of *Polygonum cillinerve* (Nakai) Ohwl by macroporous resin column chromatography combined with high-speed counter-current chromatography.

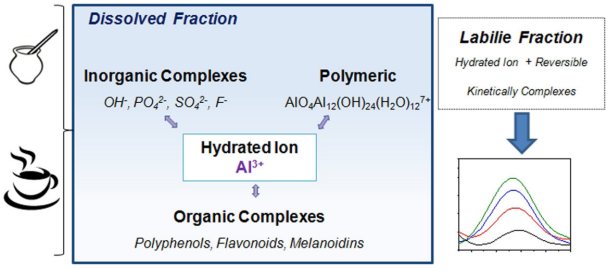


Graphical Abstract
Iontophoresis is a method of administering substances through the skin, which uses electrical current or potential to promote transdermal delivery. This paper showed that iontophoresis increased the diffusion and degradation of α-tocopherol.

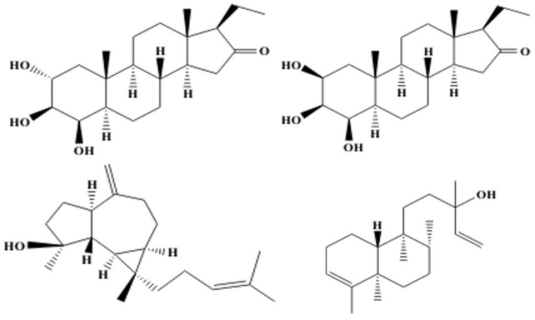




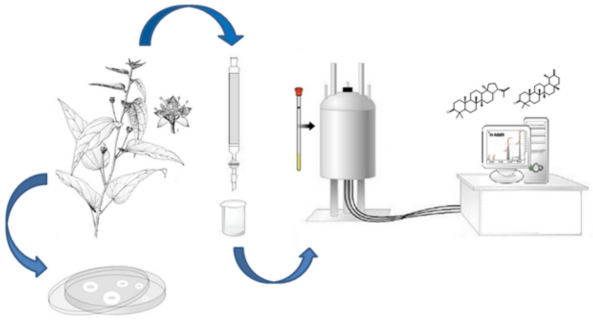
Graphical Abstract
Stemodinol, a new natural compound, was isolated from leaves of *Stemodia maritima*, and the structure was unambiguously established by 1D and 2D NMR techniques. The antioxidant and antimicrobial activities of other compounds from *Stemodia maritima* were investigated.



Graphical Abstract
A sensitive method was developed to measure aluminum lability by employing Absorptive Cathodic Stripping Voltammetry. The bioavailable (labile) fraction of Al was determined in yerba mate infusions.

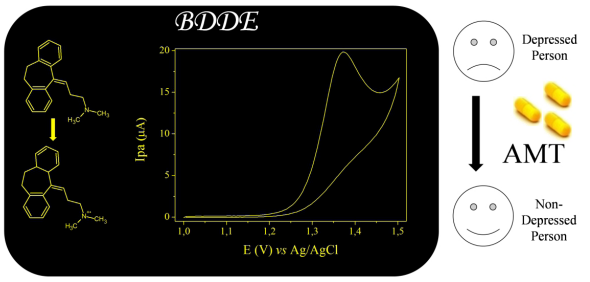


Graphical Abstract
Phytochemical study of *Trichilia silvatica* led to the isolation of pregnanes and diterpenes. Clerodanes are considered potential insecticides and therefore might be responsible, along with steroids, for the larvicidal activity of the extract from leaves of *T. silvatica*.

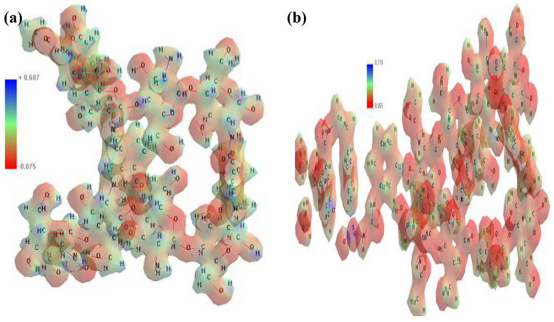


Graphical Abstract
This is a phytochemical study on the *Wissadula* genus. The isolated compounds were obtained by usual chromatographic techniques and identified by spectroscopic analysis. The fractions and compounds from *Wissadula periplocifolia* showed antibacterial activity.

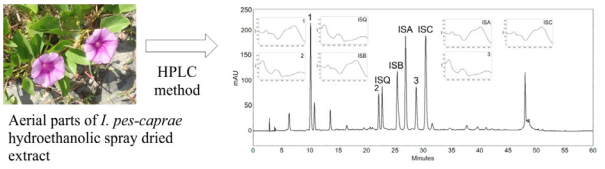
Graphical Abstract
The proposed method, based on electroxidation of amitriptyline at a boron-doped diamond electrode, is stable for several measures and demonstrates desirable features, such as good precision (intra- and inter-day) and accuracy, for routine analyses.



Graphical Abstract
Molecular electrostatic potential (MESP) of (a) chitosan/genipin and (b) chitosan (genipin)/glibenclamide calculated using the AM1 method.

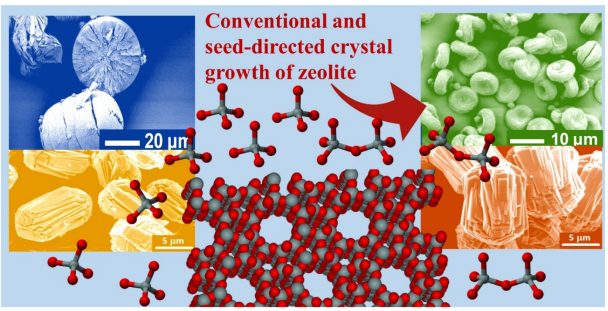


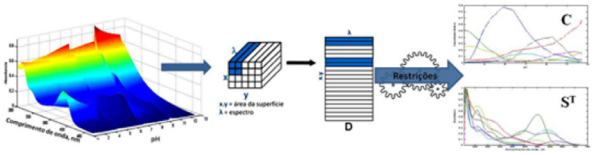
Graphical Abstract
An HPLC-UV method for the determination of isoquercitrin (ISQ) and isochlorogenic acids A, B and C (ISA, ISB and ISC) in a hydroethanolic spray-dried extract of *Ipomoea pes-caprae* was validated and applied to study the stability of herbal drugs and extractive solutions.



Revisão

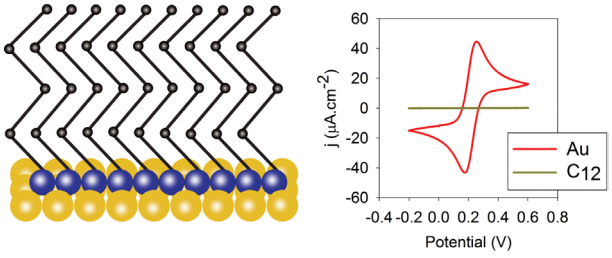
Graphical Abstract
Seed-assisted synthesis of zeolites diminishes crystallization time and enables the industrial use of certain zeolites.



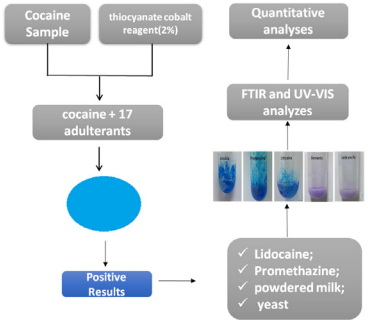


Graphical Abstract
A powerful tool for the resolution, identification and quantification of target compounds in the presence of interferences is described: MCR-ALS applications and the most recent advances, evolution, advantages and drawbacks besides new applications are provided.

Nota Técnica

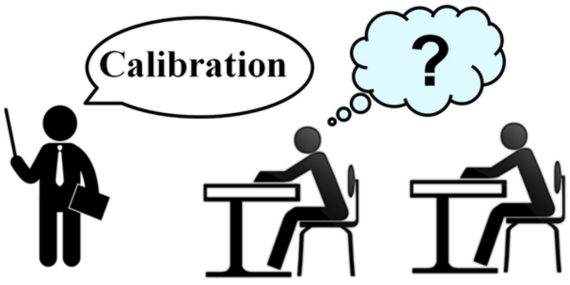


Graphical Abstract
The degree of compression of the monolayer (SAMs) properties of formation and reproducibility of the electrochemical response depends on the roughness factor, with values closer to the unit being better.

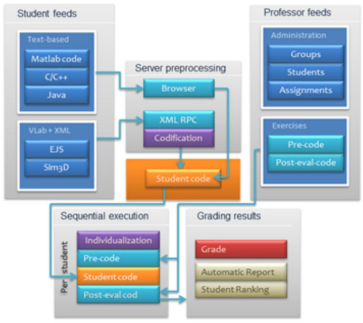


Graphical Abstract
Attenuated total reflection Fourier transform infrared and ultraviolet-visible spectroscopies for distinguishing between cocaine and other adulterants (lidocaine, promethazine, powdered milk and yeast) that yield positive results on the Scott test are described.

Educação

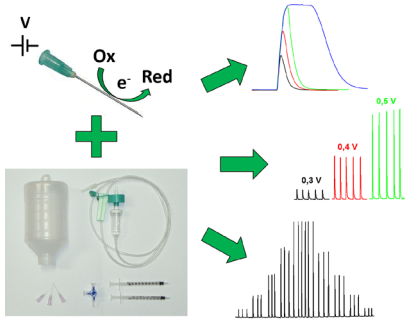


Graphical Abstract
The conceptual understanding of calibration is no easy task for undergraduate students. The differences, similarities and proper application of external calibration, standard addition calibration and internal standard calibration can be explored with a simple experiment using grains.



Graphical Abstract
Goodle Grading Management System (GMS) is a completely different evaluation method facilitating automatic data generation and grading for complex exercises, which enables students to independently complete personalized exercises and submit their solutions online, while receiving immediate feedback.

Graphical Abstract
Aspects of scientific language considered by chemistry professors in the evaluation of scientific texts authored by undergraduate chemistry students.



Graphical Abstract
Low-cost materials from hospital applications were used to build an FIA system, which was able to demonstrate the influence of the main operational parameters on the transient signals. Thus, this system can be regarded as an efficient and accessible didactic tool for teaching FIA principles.

Graphical Abstract
What are the best ways to teach Science nowadays so as to serve contemporary students and society? Here we present one such approach, inquiry Modules, an inquiry dynamic, along with an example, available in full from a website, applied to teach Le Chatelier's Principle.