Solid Liquid Extraction Of Bioactive Compounds Effect Of

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LEACHING - SOLID LIQUID EXTRACTION LESSON 1 ~~Separating Components of a Mixture by Extraction~~ ~~Solid Phase Extraction (SPE) technique: Introduction and Steps Involved~~

LEACHING SOLID LIQUID EXTRACTION LESSON 2*Extraction of bioactive compounds from natural sources*

Soxhlate apparatus for extraction of bioactive compounds/by prof. Yogesh Phatake/ full tutorial

LEACHING SOLID LIQUID EXTRACTION LESSON 1 EXCERCISE~~Solid Liquid Extraction~~ Science of Tea preparation | Leaching | Solid-Liquid Extraction *Liquid/Liquid Extraction* ~~Solid Phase Extraction~~ Solid Phase Extraction (SPE) Tutorial FOOD TECHNOLOGY | Soxhlet Extraction | Bioactive compounds *Leaching of the Soil Definition of Leaching process and its example*

Multiresidue Pesticides analysis using QueChers – a demonstration on how to analyze your sample~~Steam distillation - Lemon essential oil~~ ~~Solid Phase Extraction process - AFFINISEP~~ ~~SOXHLET EXTRACTION with Dr. Mark Niemczyk, Ph.D.~~ ~~LIQUID-LIQUID EXTRACTION- UNDERSTANDING TERNARY DIAGRAM~~

A-Level Pre-Lab Video for Using a Separating Funnel~~Tenova Bateman Technologies- Solvent Extraction Plant~~ SOXTHERM - rapid extraction system for solid- liquid extraction *Solid phase extraction demonstration SOLID-LIQUID EXTRACTION* **Factors influencing the solid liquid extraction (leaching)** Solid Phase Extraction 1/2 | BS Analytical Chemistry 4th Semester | PU / GC University ~~Response Surface Methodology (RSM) By Design Expert V.8.0.6|Tutorial for Beginner|Part 02|Urdu|Hindi~~ **Greg Doucette Cookbook || Is it the Cancer Cookbook? (The Live Long Podcast #14)** *Pharmacognosy Phytochemistry 2 Lec 5* ~~Solid Liquid Extraction Of Bioactive~~
Solid-liquid extraction of bioactive compounds with antioxidant potential from Alternanthera ...

~~Solid-liquid extraction of bioactive compounds with ...~~
Extraction of bioactive compounds from natural products is of growing research interest. The present study focuses on the role of polydispersity in analyzing the kinetic curves of solid-liquid...

~~Solid-liquid extraction of bioactive compounds: Effect of ...~~
The aqueous batch extraction of bioactive compounds from yerba mate leaves was evaluated in view of their potential application in the food industry. The influence of temperature (20–80 °C) and stirring (0–400 rpm) was investigated by central composite design.

~~Solid–liquid extraction of bioactive compounds from yerba ...~~
The temperature dependence on the global kinetics of both methanol and 1-butyl-3-methylimidazolium acesulfamate ([C 4 mim][Ace])-supported extraction of the bioactive alkaloid S-(+)-glaucine from plant material of Glaucium flavum Crantz (Papaveraceae) was measured and a comparative analysis in respect to the extractant type was performed. The experimental data was fitted with high coefficients ...

~~Ionic liquid-supported solid–liquid extraction of ...~~
Solid-liquid extraction of bioactive components from the hemp Solid-liquid extraction was performed according to the conditions defined using Box-Behnken experimental design (Table 1). Certain mass of dried hemp material was placed in a 50 mL glass beaker with certain volume of ethanol/water solvent.

~~OPTIMIZATION OF ETHANOL/WATER SOLVENT EXTRACTION OF ...~~
technique using ultrasounds (UAE) and a cyclically pressurized solid-liquid extraction with the Naviglio extractor (NE) or Rapid Solid-Liquid Dynamic Extraction (RSLDE) was performed, in order to obtain qualitative and quantitative data related to bioactive compounds of saffron.

~~EXTRACTION OF BIOACTIVE COMPOUNDS OF SAFFRON (CROCUS ...~~
Solid-liquid extraction: Temperature (333.15 K), solid/liquid ratio (1:10), time (100 min) Total phenolic content (TPC) • TPC: 3.61 mg GAE/g • Antioxidant potential: 30.6 μg/ml. DES used with ethylene glycol and glycerol showed higher yield as compared to conventional solvent (aq. Ethanol 30 wt water) for phenolic compounds extraction

~~Beneficiation of food processing by-products through ...~~
Solid-liquid extraction is similar to liquid-liquid extraction, except that the solute is dispersed in a solid matrix rather than in a carrier liquid. The solid phase, containing the solute, is dispersed in the solvent and mixed. The solute is extracted from the solid phase to the solvent, and the solid phase is then removed by filtration.

~~Solid-Liquid Extraction | Protocol~~
Following the general research trends, this paper presents the performance of water solutions of a series of hydrophilic 1-alkyl-3-methylimidazolium-based ionic liquids as extractants for the solid–liquid extraction of S-(+)-glaucine from plant material of G. flavum Cr. It is noteworthy that amongst the alkaloids known to be present in this plant, glaucine is the only one of industrial interest.

~~Ionic liquid-supported solid–liquid extraction of ...~~
Solid/liquid extraction and expression are widely used for the production of fruit juices, wines, sugar, vegetable oils and starch, as well as for the extraction of different molecules of agricultural origin (carbohydrates or polysaccharides, proteins, aromas, flavours, etc.).

~~Solid/Liquid Extraction and Expression | SpringerLink~~
(2016). Ionic liquid-supported solid–liquid extraction of bioactive alkaloids. IV. New HPLC method for quantitative determination of galantamine in Leucojum aestivum L. (Amaryllidaceae) Separation Science and Technology: Vol. 51, Separation Science: Theory and Practice 2015, pp. 2691-2699.

~~Ionic liquid-supported solid–liquid extraction of ...~~
To enhance the extraction and separation of such hydrophobic bioactive compounds in aqueous media, Jin et al. proposed a family of new water/IL mixtures with amphiphilic anionic functional long-chain carboxylate ILs (LCC-ILs) for the simultaneous dissolution of biomass and extraction of hydrophobic bioactive compounds. The LCC-ILs investigated possess weak polarity and strong hydrogen-bonding basicity simultaneously, thus displaying a high solubility for numerous hydrophobic natural ...

~~Ionic Liquid-Mediated Extraction and Separation Processes ...~~
From this point of view, rapid solid-liquid dynamic extraction (RSLDE), performed using the Naviglio extractor, compared to traditional applications, is a technique that is able to reduce extraction times, generally leads to higher yields, does not require heating of the system, allows one to extract the active ingredients, and avoids their degradation.

~~Rapid Solid-Liquid Dynamic Extraction (RSLDE): A Powerful ...~~
The mechanism for extraction bioactive compounds from plant matrix is essential for optimizing the extraction process. As a benchmark technique, a soxhlet extraction has been utilized for...

~~(PDF) Mechanisms of Ginger Bioactive Compounds Extract ...~~
Summary Bioactive compounds from Brazilian hop (Humulus lupulus L.) cultivars were extracted by ultrasound and their phenolic profile compared with commercial hop from the USA. The most effective extraction condi- tions (solution of ethanol 49%, at 52 °C and a solid/liquid ratio of 1 g per 34 mL) for the total phenolic

~~Bioactive compounds and antioxidant activities of ...~~
MTS extraction was evaluated for recapturing bioactive compounds of pomegranate peel waste. The influence of extraction time (0.5-3 min), temperature (25-50 °C), and pressure (100-500 kPa) on the yield of total phenolic content (TPC) and antioxidant activity (AOA) was assessed.

~~Solid-Liquid Extraction by Manothermosonication ...~~
Afterward, the yield of the mentioned bioactive compounds derived from eggplant peel extracts was optimized through managing several MAE parameters such as microwave power, extraction time, liquid–solid ratio, ethanol concentration, and pH of the solvent.

~~Evaluation and optimization of microwave-assisted ...~~
A method combining solid-liquid extraction based on ethanolic aqueous solution, cLC-DAD and chemometrics, was performed to extract and quantify polyphenols from citrus peels. LC-MS/MS was also employed for chemical profiling. The effect of extraction variables on the recovery was examined by experimental factorial design.

Water Extraction of Bioactive Compounds: From Plants to Drug Development draws together the expert knowledge of researchers from around the world to outline the essential knowledge and techniques required to successfully extract bioactive compounds for further study. The book is a practical tool for medicinal chemists, biochemists, pharmaceutical scientists and academics working in the discovery and development of drugs from natural sources. The discovery and extraction of bioactive plant compounds from natural sources is of growing interest to drug developers, adding greater fuel to a simultaneous search for efficient, green technologies to support this. Particularly promising are aqueous based methods, as water is a cheap, safe and abundant solvent. The book is a detailed guide to the fundamental concepts and necessary equipment needed to successfully undertake such processes, supported by application examples and highlighting the most influential variables. Part 1 begins with a thorough introduction to plants as sources of drugs, highlighting strategies for the discovery of novel bioactive constituents of botanicals, the need for standardization and a move toward more rational and greener techniques in the field, the development of plant-based extraction processes and pretreatments for the efficient extraction. Part 2 then reviews a broad range of available techniques, including sections on conventional hot water extraction and pressurized hot water extraction in a range of settings. Intensified processes are then discussed in detail, including sections on microwave-assisted processes, ultrasound-assisted processes and enzyme assisted extraction. Covers the theoretical background and range of techniques available to researchers, helping them to select the most appropriate extraction method for their needs Presents up-to-date and cutting edge applications by international experts Highlights current use and future potential for industrial scale applications Offers a thorough introduction to plants as sources of drugs, highlighting strategies for the discovery of novel bioactive constituents of botanicals

The latest research on the health benefits and optimal processing technologies of herbs and spices This book provides a comprehensive overview of the health benefits, analytical techniques used, and effects of processing upon the physicochemical properties of herbs and spices. Presented in three parts, it opens with a section on the technological and health benefits of herbs and spices. The second part reviews the effect of classical and novel processing techniques on the properties of herbs/spices. The third section examines extraction techniques and analytical methodologies used for herbs and spices. Filled with contributions from experts in academia and industry, Herbs, Spices and Medicinal Plants: Processing, Health Benefits and Safety offers chapters covering thermal and non-thermal processing of herbs and spices, recent developments in high-quality drying of herbs and spices, conventional and novel techniques for extracting bioactive compounds from herbs and spices, and approaches to analytical techniques. It also examines purification and isolation techniques for enriching bioactive phytochemicals, medicinal properties of herbs and spices, synergy in whole-plant medicine, potential applications of polyphenols from herbs and spices in dairy products, biotic and abiotic safety concerns, and adverse human health effects and regulation of metal contaminants in terrestrial plant-derived food and phytopharmaceuticals. Covers the emerging health benefits of herbs and spices, including their use as anti-diabetics, anti-inflammatories, and anti-oxidants Reviews the effect of classical and novel processing techniques on the properties of herbs and spices Features informed perspectives from noted academics and professionals in the industry Part of Wiley's new IFST Advances in Food Science series Herbs, Spices and Medicinal Plants is an important book for companies, research institutions, and universities active in the areas of food processing and the agri-food environment. It will appeal to food scientists and engineers, environmentalists, and food regulatory agencies.

The demand for functional foods and neutraceuticals is on the rise, leaving product development companies racing to improve bioactive compound extraction methods – a key component of functional foods and neutraceuticals development. From established processes such as steam distillation to emerging techniques like supercritical fluid technology, Extracting Bioactive Compounds for Food Products: Theory and Applications details the engineering aspects of the processes used to extract bioactive compounds from their food sources. Covers Bioactive Compounds Found in Foods, Cosmetics, and Pharmaceuticals Each well-developed chapter provides the fundamentals of transport phenomena and thermodynamics as they relate to the process described, a state-of-the-art literature review, and replicable case studies of extraction processes. This authoritative reference examines a variety of established and groundbreaking extraction processes including: Steam distillation Low-pressure solvent extraction Liquid-liquid extraction Supercritical and pressurized fluid extraction Adsorption and desorption The acute view of thermodynamic, mass transfer, and economical engineering provided in this book builds a foundation in the processes used to obtain high-quality bioactive extracts and purified compounds. Going beyond the information traditionally found in unit operations reference books, Extracting Bioactive Compounds for Food Products: Theory and Applications demonstrates how to successfully optimize bioactive compound extraction methods and use them to create new and better natural food options.

With increasing energy prices and the drive to reduce CO2 emissions, food industries are challenged to find new technologies in order to reduce energy consumption, to meet legal requirements on emissions, product/process safety and control, and for cost reduction and increased quality as well as functionality. Extraction is one of the promising innovation themes that could contribute to sustainable growth in the chemical and food industries. For example, existing extraction technologies have considerable technological and scientific bottlenecks to overcome, such as often requiring up to 50% of investments in a new plant and more than 70% of total process energy used in food, fine chemicals and pharmaceutical industries. These shortcomings have led to the consideration of the use of new "green" techniques in extraction, which typically use less solvent and energy, such as microwave extraction. Extraction under extreme or non-classical conditions is currently a dynamically developing area in applied research and industry. Using microwaves, extraction and distillation can now be completed in minutes instead of hours with high reproducibility, reducing the consumption of solvent, simplifying manipulation and work-up, giving higher purity of the final product, eliminating post-treatment of waste water and consuming only a fraction of the energy normally needed for a conventional extraction method. Several classes of compounds such as essential oils, aromas, anti-oxidants, pigments, colours, fats and oils, carbohydrates, and other bioactive compounds have been extracted efficiently from a variety of matrices (mainly animal tissues, food, and plant materials). The advantages of using microwave energy, which is a non-contact heat source, includes more effective heating, faster energy transfer, reduced thermal gradients, selective heating, reduced equipment size, faster response to process heating control, faster start-up, increased production, and elimination of process steps. This book will present a complete picture of the current knowledge on microwave-assisted extraction (MAE) of bioactive compounds from food and natural products. It will provide the necessary theoretical background and details about extraction by microwaves, including information on the technique, the mechanism, protocols, industrial applications, safety precautions, and environmental impacts.

Betel (Piper betle L.) is one of the invaluable medicinal plants originated from Malaysia. Its leaves have been used traditionally for various medication purposes. Scientific research on the leaf of this plant reveals that it possesses many beneficial bioactivities and its extract from betel leaves has a great potential to be used in developing commercial products. However, there is a lack of research on the processing aspects to produce its bioactive extract. This research studied three key processes including drying, solid-liquid extraction, and freeze drying which are involved in processing of bioactive extract from betel leaves. Different experiments were designed and carried out to look into the effects of various operating parameters on the qualitative and quantitative aspects of betel leaves extract. Hydroxychavicol (HC) and eugenol (EU) were selected as the quality indicators of the product because these two compounds were reported to play an important role in the bioactivities of betel leaves including antioxidant, anti-inflammatory, and anticarcinogenic and antibacterial. The effect of drying temperature on the quality of betel leaves and drying kinetics were studied in order to determine the optimum drying temperature. Changes in the concentration of HC and EU reveal that the optimum temperature for drying of betel leaves was 70oC because degradation of HC and EU was observed above this temperature. Logarithmic model was found to be the most suitable model among the selected thin layer model in predicting the process. Water was the most suitable solvent for extracting betel leaves compared to ethanol ethyl acetate, and hexane. This was because it gave highest yield and the extract from water indicated high antioxidant and anti-inflammatory activities in which the activities were related to HC and EU. The optimum extraction temperature was determined as 60oC to avoid degradation of EU. The ratio of water to solid of 30:1 (ml:g) was found to be optimum based on analysis of Response Surface Methodology (RSM). Extraction kinetics of betel leaves reveals that the optimum extraction time is one hour. A new model named equilibrium driven solid-liquid extraction (EDSLE) model was developed and successfully applied in describing the process. The study of freeze drying process of betel leaves extract was conducted in two sections namely freezing and drying. The freezing kinetics data shows that the freezing point of betel leaves extract with 20%SC was about -4 oC. Prediction of freezing kinetics and freezing time was carried out successfully with numerical model. The results of drying kinetics of betel leaves extract show that the increase of drying temperature increased the drying rate. Midilli et la. Model was found to be the most effective one among the selected models for modeling of the process.

Liquid Phase Extraction thoroughly presents both existing and new techniques in liquid phase extraction. It not only provides all information laboratory scientists need for choosing and utilizing suitable sample preparation procedures for any kind of sample, but also showcases the contemporary uses of sample preparation techniques in the most important industrial and academic project environments, including countercurrent chromatography, pressurized-liquid extraction, single-drop Microextraction, and more. Written by recognized experts in their respective fields, it serves as a one-stop reference for those who need to know which technique to choose for liquid phase extraction. Used in conjunction with a similar release, Solid Phase Extraction, it allows users to master this crucial aspect of sample preparation. Defines the current state-of-the-art in extraction techniques and the methods and procedures for implementing them in laboratory practice Includes extensive referencing that facilitates the identification of key information Aimed at both entry-level scientists and those who want to explore new techniques and methods

Seas and oceans offer a wide range of temperature, pressure, light and chemical conditions thus allowing a wide diversity of marine organisms from shallow coastal waters to the deep ocean. These resources can be used to obtain new products and develop services, and in turn help to provide solutions to the challenges that affect our planet, including offering a sustainable supply of food and energy, new industrial materials and processes, new bioactive compounds, and new health treatments. Marine compounds have been identified as having antibacterial, anticoagulant, antifungal, antimalarial, antiprotozoal, antituberculosis, and antiviral activities. The major sources of these bioactive compounds are marine sponges, coelenterates, and microorganisms, followed by algae, echinoderms, tunicates, molluscs, and bryozoans. The discovery of bioactive compounds from marine samples is a hot topic considering the current need for sustainable use of marine resources. This book is a comprehensive overview of the analytical techniques employed in the discovery and characterization of bioactive compounds isolated from (all possible) marine samples and gives future perspectives of analytical methodologies. This overview includes an assessment of the sampling and preparation of extracts, the separation and isolation of bioactive compounds, their structural characterization and the application of bioassays in the discovery of bioactive compounds. Comprehensive coverage of analytical techniques and applications Clear diagrams to adequately support important topics Real examples of applications of analytical techniques in the search for new bioactive compounds

Solid Phase Extraction thoroughly presents both new and historic techniques for dealing with solid phase extraction. It provides all information laboratory scientists need for choosing and utilizing suitable sample preparation procedures for any kind of sample. In addition, the book showcases the contemporary uses of sample preparation techniques in the most important industrial and academic project environments, including solid-phase Microextraction, molecularly imprinted polymers, magnetic nanoparticles, and more. Written by recognized experts in their respective fields, this one-stop reference is ideal for those who need to know which technique to choose for solid phase extraction. Used in conjunction with a similar release, Liquid Phase Extraction, this book allows users to master this crucial aspect of sample preparation. Defines the current state-of-the-art in extraction techniques and the methods and procedures for implementing them in laboratory practice Includes extensive referencing that facilitates the identification of key information Aimed at both entry-level scientists and those who want to explore new techniques and methods

Enhanced concern for the quality and safety of food products, increased preference for natural products, and stricter regulations on the residual level of solvents, all contribute to the growing use of supercritical fluid technology as a primary alternative for the extraction, fractionation, and isolation of active ingredients. As a solvent-free p