Antioxidant Capacity And Antioxidants Of Strawberry

Analyses of Total Antioxidant Capacity in Antioxidants Using the DPPH Method Approaches to Activity Determination
Analysis of Antioxidant-Rich Phytochemicals
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Wheat Antioxidants
Applications in Foods of Animal Origin
Antioxidant Capacity, Flavonoids and Other Phenolic Compounds
Handbook of Antioxidants for Food Preservation
Oxidative Stress and Chronic Degenerative Diseases
Antioxidants in Food, Vitamins and Supplements
Oxidation in Foods and Beverages and Antioxidant Applications
Antioxidant Properties of Spices, Herbs and Other Sources
Antioxidants in Foods and Its Applications
Antioxidant Capacity Measurment Methods and Their Application to Develop Useful Indicators of Stability and Functionality in Food Matrices
Reactive Oxygen Species and Antioxidants in Higher Plants

Antioxidants in Bolivian Plants Foods
Chemical Analysis of Antioxidant Capacity

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Analyses of Total Antioxidant Capacity in Antioxidants Using the DPPH Method BoD – Books on Demand
The book discusses the present strategies towards antioxidant capacity evaluation including optical, chromatography, electrochemical methods as well as photoelectrochemical technique, where the advantages, limitations and different applications are analyzed and compared. Subsequently, the corresponding analysis instruments are introduced and interpreted combining with their technical characteristics, scope and performance indicators.

Approaches to Activity Determination CRC Press
The field of antioxidant research has grown rapidly over the last 30 years and shows no sign of slowing down. In order to understand how antioxidants work, it is essential to understand how their activity is measured. However, antioxidant activity measurements are controversial and their value has been challenged. This book addresses a number of the controversies on antioxidant testing methods. Specifically, the book highlights the importance of context, helping the reader to decide what methods are most appropriate for different situations, how the results can be interpreted and what information may be inferred from the data. There are a multiplicity of methods for measuring activity, with no standardized method approved for in vitro or in vivo testing. In order to select an appropriate method, a thorough knowledge of the processes associated with reduction-oxidation is essential, leading to an improved understanding and use of activity measurements and the associated data. The book presents background information, in a unique style, which is designed to assist readers to grasp the fundamentals of redox processes, as well as thermodynamics and kinetics, which are essential to later chapters. Recovery and extraction of antioxidants from diverse matrices are presented in a clear and logical fashion along with methods used to determine antioxidant activity from a mechanistic perspective. Other chapters present current methodologies used for activity testing in different sample types ranging from foods and plants, to body fluids and even to packaging, but always with a strong emphasis on the nature of the sample and the underlying chemistry of the method. A number of emerging techniques for assessing antioxidant behaviour, namely, electrochemical methods, chip technology exploiting microfluidic devices, metabolomics plus studies of gene and protein expression, are examined. Ultimately, these techniques will be involved in generation of "big data" for which an understanding of chemometrics will be essential in drawing valid conclusions. The book is written to appeal to a wide audience, but will be particularly helpful for any researchers who are attempting to make sense of the vast literature and often conflicting messages on antioxidant activity.
Analysis of Antioxidant-Rich Phytochemicals Elsevier

In the recent years, considerable research has been carried out evaluating natural substances as antioxidative additives in food products, leading to novel combinations of antioxidants and the development of novel food products. In addition to their antioxidative capacity, these natural additives have positive effects on the human body with documented health benefits. This valuable new book provides an overview of natural antioxidants, their sources, methods of extraction, regulatory aspects, and application techniques, specifically focusing on different foods of animal origin to improve their oxidative stability.

Measurement of Antioxidant Activity and Capacity The American Oil Chemists Society

"Bio-Farms for Nutraceuticals" can be said to have been born of the NUTRA-SNACKS project within the Sixth Framework Programme Priority on Food Quality and Safety. One objective of NUTRA -SNACK S was to improve the nutritional and eating properties of ready-to-eat products and semi-prepared foodstuffs through better monitoring of the quality and safety of raw materials and the development of innovative processes along the production chain. Another main objective of the project was the production of ready-to-eat snacks with high nutraceutic activity. Seven research institutes and three companies in six European countries were involved in this effort. The co-operation resulted in the production of food having a high content of natural metabolites with the following beneficial health effects: anticancer, antilipidemic, anticholesterol, antimicrobial, antibacterial, antifungal, antiviral, antihypertensive, anti-inflamatory and antioxidant activities.

Effect of Thermal Processing on the Phenolic Antioxidants of Colored Potatoes MDPI

Phenolic Antioxidants and Health BenefitsScientific Publishers

Chemical Analysis of Antioxidant Capacity Woodhead Publishing

There are many evidences pointing to oxidative stress as the promoter of the development of many degenerative diseases such as cancer, cardiovascular diseases, and neurodegeneration. It has been suggested that a diet rich in antioxidants would be beneficial to human health. To determine the antioxidant capacity of the different sources of antioxidants, they have different chemical methods used, in vitro cells, laboratory animals, and recently nanoparticles. This chapter provides an account of the main antioxidant evaluation methods applied to phenolic compounds, recounting their advantages and disadvantages, as well as a reflection on the parameters that should always care to obtain reproducible results.

Ordnung des philologischen Instituts Springer Science & Business Media

The use of antioxidants in sports is controversial due to existing evidence that they both support and hinder athletic performance. Antioxidants in Sport Nutrition covers antioxidant use in the athlete´s basic nutrition and discusses the controversies surrounding the usefulness of antioxidant supplementation. The book also stresses how antioxidants may affect immunity, health, and exercise performance. The book contains scientifically based chapters explaining the basic mechanisms of exercise-induced oxidative damage. Also covered are methodological approaches to assess the effectiveness of antioxidant

treatment. Biomarkers are discussed as a method to estimate the bioefficacy of dietary/supplemental antioxidants in sports. This book is useful for sport nutrition scientists, physicians, exercise physiologists, product developers, sport practitioners, coaches, top athletes, and recreational athletes. In it, they will find objective information and practical guidance.

Biochemistry of Antioxidants Elsevier

The scientific world and modern society today is experiencing the dawning of an era of herbal medicine. Extensive research has shown that aromatic plants are important anti-inflammatory, antioxidant, anti aging and immune boosting delectable foods, with the magic and miracle to boost our immune system providing us with extended and an improved quality of life. Apart from making bland recipes into welcoming or interesting victories, herbs and spices have stirred the minds of the research community to look deeper into its active components from a functional perspective. It is essential to present the scientific and medicinal aspect of herbs and spices together with the analysis of constituents, its medicinal application, toxicology and its physiological effects. Herbs and spices with high levels of antioxidants are in great demand as they tend to promote health and prevent diseases naturally assuring increased safety and reliability for consumers. Herbs and spices are not only known for taste and flavor, but today research has opened up a new realm in which the antioxidant properties of these aromatic plants provide preservation for foods and health benefits for consumers who look forward to concrete scientific research to guide them further and explore herbal medicine. The aim of this book is to create awareness in society about the reliability of medicinal properties of certain herbs and spices through scientific and scholarly research.

Processing and Impact on Antioxidants in Beverages Springer Science & Business Media

The Special Issue “Extractable and Non-Extractable Antioxidants” gives an updated view on antioxidants—both in their extractable and non-extractable form—in the different food groups, their products thereof, and food preparations as well as byproducts and biomass waste. The potential beneficial properties of these compounds and nutraceutical formulations are described in the various studies covered in this Special Issue.

Differences in the Antioxidant Capacity of a Variety of Culinary Herbs and Spices MDPI

Free radicals are atoms or molecules containing unpaired electrons. Damage occurs when the free radical encounters another molecule and seeks to find another electron to pair its unpaired electron. Free radicals can cause mutation in different biological compounds such as protein, nucleic acids, and lipids, and the damage caused by the free radicals lead to various diseases (cancer, cardiovascular disease, aging, etc.). Antioxidants are helpful in reducing and preventing damage from free radical reactions because of their ability to donate electrons, which neutralize the radical without forming another. Ascorbic acid, for example, can lose an electron to a free radical and remain stable itself by passing its unstable electron around the antioxidant molecule. Unfortunately, new data indicate that the synthetic antioxidants used in the industry could have carcinogenic effects on human cells, thus fueling an intense search for

new, natural, and efficient antioxidants. Therefore, the current book discusses the role and source of antioxidant compounds in nutrition and diets. Also, the current book includes nine chapters contributed by experts around the world, and the chapters are categorized into two sections: "Antioxidant Compounds and Biological Activities" and "Natural Antioxidants and Applications."
Mechanisms and Techniques Phenolic Antioxidants and Health Benefits
Oxidative stress is the result of an imbalance in pro-oxidant/antioxidant homeostasis that leads to the generation of toxic reactive oxygen species. Brain cells are continuously exposed to reactive oxygen species generated by oxidative metabolism, and in certain pathological conditions defense mechanisms against oxygen radicals may be weakened and/or overwhelmed. DNA is a potential target for oxidative damage, and genomic damage can contribute to neuropathogenesis. It is important therefore to identify tools for the quantitative analysis of DNA damage in models on neurological disorders. This book presents detailed information on various neurodegenerative disorders and their connection with oxidative stress. This information will provide clinicians with directions to treat these disorders with appropriate therapy and is also of vital importance for the drug industries for the design of new drugs for treatment of degenerative disorders. * Contains the latest information on the subject of neurodegenerative disorders * Reflects on various factors involved in degeneration and gives suggestions for how to tackle these problems
Academic Press
Free radicals are damaging to cellular pathways and lead to oxidative stress. Oxidative stress has been found to be a factor in chronic diseases, and these diseases are set to become the leading cause of the death in the world. Antioxidants help fight free radicals and reduce their negative effects in the body. Antioxidants are found in many plants, including herbs and spices. This study quantified the total antioxidant activity, a combination of hydrophilic and lipophilic antioxidant activity, of eleven herbs and spices. Data were recorded in fresh and dry weight measurements using the ABTS/H2O2/HRP decoloration method. On a fresh weight basis, cloves were found to have the highest level of total antioxidants with a mean of 740.91 µmol TE/g FW ± 22.55 (SEM), followed by cinnamon, then rosemary, oregano and mint, then marjoram and allspice, followed by sage, then ginger and nutmeg, and the lowest mean was found in turmeric, with a mean of 17.42 µmol TE/g FW ± 0.40 (SEM). The mean differences of the hydrophilic antioxidant activity (HAA), lipophilic antioxidant activity (LAA), and total antioxidant activity (TAA) were analyzed using a one-way analysis of variance and Dunnett's T3 pairwise comparisons. The sample means were placed into statistically significantly similar groups. Results found in this experiment agree with previous research that herbs and spices are a good source of antioxidants.
Bio-Farms for Nutraceuticals MDPI
This book is a printed edition of the Special Issue "Antioxidants in Health and Disease" that was published in Nutrients
Extractable and Non-Extractable Antioxidants CRC Press
The book discusses the present strategies towards antioxidant capacity evaluation including optical, chromatography, electrochemical methods as well as photoelectrochemical

technique, where the advantages, limitations and different applications are analyzed and compared. Subsequently, the corresponding analysis instruments are introduced and interpreted combining with their technical characteristics, scope and performance indicators.

Functional Food and Safety Control by Biosensors Walter de Gruyter GmbH & Co KG

Processing and Impact on Antioxidants in Beverages presents information key to understanding how antioxidants change during production of beverages, how production options can be used to enhance antioxidant benefit, and how to determine the production process that will result in the optimum antioxidant benefit while retaining consumer acceptability. In the food industry, antioxidants are added to preserve the shelf life of foods and to prevent off-flavors from developing. These production-added components also contribute to the overall availability of essential nutrients for intake. Moreover, some production processes reduce the amount of naturally occurring antioxidants. Thus, in terms of food science, it is important to understand not only the physiological importance of antioxidants, but what they are, how much are in the different food ingredients, and how they are damaged or enhanced through the processing and packaging phases. This book specifically addresses the composition and characterization of antioxidants in coffee, green tea, soft drinks, beer, and wine. Processing techniques considered here include fermentation and aging, high-pressure homogenization, enzymatic debittering, and more. Lastly, the book considers several selective antioxidant assays, such as Oxygen Radical Absorbance Capacity (ORAC) and Trolox Equivalent Antioxidant Capacity (TEAC) assays. Provides insights into processing options for enhanced antioxidant bioavailability Presents correlation potentials for increased total antioxidant capacity Includes methods for the in situ or in-line monitoring of antioxidants to reduce industrial loss of antioxidants in beverages Proposes processing of concentrated fractions of antioxidants that can be added to foods

Herbal Medicine CRC Press

Providing basic information on reactive oxygen species (ROS), this volume describes new developments in the action of ROS, the role of antioxidants, and the mechanisms developed to scavenge free radical associated cellular damage. It illustrates the chemistry of ROS, ROS signaling, antioxidative defense systems, transgene approaches in scavenging R

Natural Antioxidants Royal Society of Chemistry

This comprehensive reference consolidates current information on the antioxidant properties of wheat, their beneficial effects, the mechanisms involved, factors affecting availability/bioavailability, and the methods used to measure them. It discusses antioxidant properties of wheat grains and fractions and their phytochemical compositions and covers the effects of genotype, growing conditions, post-harvest treatment, storage, and food formulation and processing on availability/bioavailability. Wheat Antioxidants will help cereal chemists, food technologists, food processors, nutritionists, and others maximize the health benefits of wheat-based foods.

Biological Activity Springer Nature

Antioxidant properties of green tea (GT)

have been widely reported. The antioxidant capacity (AOC) of green tea was investigated to include the effect of infusion time over 24 hours. The AOC was measured by the FRAP, DPPH, TEAC, and CBA assays. It was proven according that after 2 hours of brewing, tea has higher AOC and Total phenolic content (TPC), these significantly decreases after 4 hours. GT has a high amount of polyphenols with potent AOC. However, interactions between polyphenols and food matrix may decrease their potential benefit. The objective of this experiment was to test the hypothesis that the addition of milk (full fat, semi-skimmed, and skimmed) may affect the phenolic content and AOC was measured. The results indicated the plain GT had highest activity; then tea with FFM had a significantly higher amount of AO than others. Plant extracts possess health promoting properties. The objective of this study was to determine the TPC and AOA of different concentrations of spice extracts (fennel, clove, cardamom, cinnamon, ginger, anise, and black pepper) with DPPH, TEAC and Rancimat methods. At low concentration, black pepper had a highest activity but at high concentration, ginger showed the highest activity among the extracts. The TPC for spice extract was greater for anise. Results provided evidence that the studied spices may be used as a natural AO. In recent decades, saliva has emerged as a new way to diagnose and investigate basic health problems. In this study, salivary TPC and AOC were measured after consumption a single cup of green tea with and without of milk. In a healthy adult crossover design. The salivary AOC and TPC were measured before and after consumption up to 3 hours. Results indicated that milk decreased AOC of GT when compared with the control water. The activity reached peak 1 hour after ingestion and then decreased returning to the baseline. Results confirmed that saliva could be used as an easier and safer alternative to blood to assess AOA in humans.

Antioxidants in Food Academic Press

Lipid oxidation in food leads to rancidity, which compromises the sensory properties of food and makes it unappealing to consumers. The growing trend towards natural additives and preservatives means that new antioxidants are emerging for use in foods. This book provides an overview of the food antioxidants currently available and their applications in different food products. Part one provides background information on a comprehensive list of the main natural and synthetic antioxidants used in food. Part two looks at methodologies for using antioxidants in food, focusing on the efficacy of antioxidants. Part three covers the main food commodities in which antioxidants are used. Reviews the various types of antioxidants used in food preservation, including chapters on tea extracts, natural plant extracts and synthetic phenolics Analyses the performance of antixoxidants in different food systems Compiles significant international research and advancements

Phenolic Antioxidants in Foods: Chemistry, Biochemistry and Analysis John Wiley & Sons

Antioxidants are an increasingly important ingredient in food processing. Their traditional role is, as their name suggests, in inhibiting the development of oxidative rancidity in fat-based foods, particularly meat and dairy products and fried foods. However, more recent research has suggested a new role in inhibiting cardiovascular disease and

cancer. Antioxidants in Food: Practical Applications provides a review of the functional role of antioxidants and discusses how they can be effectively exploited by the food industry. The first part of the book looks at antioxidants and food stability with chapters on the development of oxidative rancidity in foods, methods for inhibiting oxidation, and ways of measuring antioxidant activity. Part 2 looks at antioxidants and health, including chapters on antioxidants and cardiovascular disease, their antitumour properties, and bioavailability. A major trend in the food industry, driven by consumer concerns, has been the shift from the use of synthetic to natural ingredients in food products. Part 3 looks at the range of natural antioxidants available to the food manufacturer. The final section of the book looks at how these natural antioxidants can be effectively exploited, covering such issues as regulation, preparation, antixoxidant processing functionality and their use in a range of food products from meat and dairy products, frying oils and fried products, to fruit and vegetables and cereal products.