

# Antioxidant Phytocomplexes Isolated from Pomegranate (*Punica granatum* L.) Using Hydrodynamic Cavitation Reveal Potential Application as Adjuvants in Cancer Therapies

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# Antioxidant Potential Of Pomegranate Punica Granatum L

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## **Antioxidant Potential Of Pomegranate Punica Granatum L:**

*Antioxidant Properties of Spices, Herbs and Other Sources* Denys J. Charles, 2012-11-27 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

**Bioactive Compounds, Functional Ingredients, Antioxidants, and Health Benefits of Edible Plants** Hosam O. Elansary , Eman. A. Mahmoud, 2024-05-28 Edible plants are rich in bioactive compounds that have physiological effects such as anticancer antioxidant anti inflammatory and antimicrobial activities Natural plant extracts are frequently used to prolong the shelf life of fresh and processed foods therefore preserving their quality and safety Phytochemical studies of extracts and biological activities of various plant organs are also important in the food and human nutrition industries They have the potential to pave the path for the commercialization of other plants by developing new applications for the food sector Plant bioactive compounds represent a promising research objective for plant breeders producers and food processing industries

*Heilpflanzen der ayurvedischen und der westlichen Medizin* Ernst Schrott, Hermann Philipp Theodor Ammon, 2012-02-29 Pflanzliche Arzneimittel bilden heute noch das Rückgrat der traditionellen indischen Medizin der Ayurveda Hier wurden die verwendeten Pflanzen ursprünglich nach philosophischen Gesichtspunkten und nach der Erfahrung des behandelnden Arztes eingesetzt Im Zuge der Globalisierung finden viele dieser Arzneimittel ihren Weg auch nach Europa Mit der zunehmenden Entwicklung synthetischer Arzneimittel und der stetigen naturwissenschaftlichen Entwicklung der Medizin erschienen die pflanzlichen Präparate in der westlichen Welt zunächst als berfl ssig Mittlerweile findet ein Umdenken statt Die westliche Welt hat das pharmakologische Potenzial vieler Pflanzeninhaltsstoffe erkannt und sucht gezielt nach neuen Wirkstoffen Viele Pflanzen der traditionellen Medizin erwiesen sich hier als zuerst wirksam Das Werk stellt die Heilpflanzen der Ayurveda nach ihrer Philosophie und den sich daraus ergebenden Anwendungsgebieten dar Gleichzeitig werden diese Pflanzen aber auch nach

westlichen Kriterien unter den Gesichtspunkten der Pharmakologie der charakterisierten Inhaltsstoffe und der sich daraus ergebenden Anwendungsgebiete vorgestellt

**Antioxidant Activity of Polyphenolic Plant Extracts** Dimitrios Stagos, 2021-03-19 Antioxidant Activity of Polyphenolic Plant Extracts is a collection of scientific articles regarding polyphenols that is substances occurring naturally in plants and exhibiting many beneficial effects on human health Among polyphenols interesting biological properties their antioxidant activity is considered the most important This book brings together experts from different research fields on topics related to polyphenols such as their isolation and purification assessment of their antioxidant activity prevention from oxidative stress induced diseases and use as food additives The polyphenols used in the present studies are derived from a great variety of plants ranging from well known species to rare ones that are only found in specific regions Moreover some of the studies provide evidence that polyphenols may be used for the prevention and treatment of common diseases such as diabetes mellitus Alzheimers disease cardiovascular and intestinal diseases Importantly in several of the studies green extraction methods for the isolation of polyphenols were developed using modern technologies where few or no organic solvents were used in order to minimize environmental and health impacts

**Nutritional Composition and Antioxidant Properties of Fruits and Vegetables** Amit K. Jaiswal, 2020-07-29 Nutritional Composition and Antioxidant Properties of Fruits and Vegetables provides an overview of the nutritional and anti nutritional composition antioxidant potential and health benefits of a wide range of commonly consumed fruits and vegetables The book presents a comprehensive overview on a variety of topics including inflorescence flowers and flower buds broccoli cauliflower cabbage bulb stem and stalk onion celery asparagus celery leaves watercress lettuce spinach fruit and seed peppers squash tomato eggplant green beans roots and tubers red beet carrots radish and fruits such as citrus orange lemon grapefruit berries blackberry strawberry lingonberry bayberry blueberry melons pumpkin watermelon and more Each chapter contributed by an international expert in the field also discusses the factors influencing antioxidant content such as genotype environmental variation and agronomic conditions

**Regulation of Fruit Ripening and Senescence** Carlos R. Figueroa, Noam Alkan, Ana Margarida Fortes, Cai-Zhong Jiang, Carolina Andrea Torres, 2021-09-27

*Antioxidants in Fruits: Properties and Health Benefits* Gulzar Ahmad Nayik, Amir Gull, 2020-12-15 This book provides a comprehensive review of the antioxidant value of widely consumed fruits Each chapter covers the botanical description nutritional health properties of these popular fruits Fruits are one of the most important indicators of dietary quality and offer protective effects against several chronic diseases such as cardiovascular diseases obesity and various types of cancer In order to effectively promote fruit consumption it is necessary to know and understand the components of fruits In addition to underscoring the importance of fruit consumption s effects on human diet the book addresses the characterization of the chemical compounds that are responsible for the antioxidant proprieties of various fruits Given its scope the book will be of interest to graduate and post graduate students research scholars academics pomologists and agricultural scientists alike

Those working in various fruit processing industries and other horticultural departments will also find the comprehensive information relevant to their work *Handbook of Research on Food Science and Technology* Monica Lizeth Chavez-Gonzalez, Jose Juan Buenrostro-Figueroa, Cristobal N. Aguilar, 2019-01-15 This handbook series consists of three volumes focusing on food technology and chemistry food biotechnology and microbiology and functional foods and nutraceuticals The volumes highlight new research and current trends in food science and technology looking at the most recent innovations emerging technologies and strategies focusing on taking food design to sustainable levels In particular the handbooks include relevant information on modernization and improvements in the food industry In volume 2 of the 3 volume set the chapters examine bioactive compounds in food biotechnology potential and risks of pigmented grain corn technological advances in the production of phytases phytochemical molecules from food waste control of food borne pathogen bacteria and more **Processing and Impact on Active Components in Food** Victor R Preedy, 2014-05-27 From beef to baked goods fish to flour antioxidants are added to preserve the shelf life of foods and ensure consumer acceptability These production added components may also contribute to the overall availability of essential nutrients for intake as well as the prevention of the development of unwelcome product characteristics such as off flavours or colours However there are processes that reduce the amount of naturally occurring antioxidants and awareness of that potential is just as important for those in product research and development There is a practical need to understand not only the physiological importance of antioxidants in terms of consumer health benefit but how they may be damaged or enhanced through the processing and packaging phases This book presents information key to understanding how antioxidants change during production of a wide variety of food products with a focus toward how this understanding may be translated effectively to other foods as well Addresses how the composition of food is altered the analytical techniques used and the applications to other foods Presents in chapter summary points and other translational insights into concepts techniques findings and approaches to processing of other foods Explores advances in analytical and methodological science within each chapter **Bioactives and Pharmacology of Medicinal Plants** T. Pullaiah, 2022-08-25 This two volume book presents an abundance of important information on the bioactive and pharmacological properties of medicinal plants It provides valuable comprehensive research and studies on bioactive phytocompounds of over 68 important medicinal plants with beneficial properties For each species included in the volume a brief introduction is given along with their bioactive compounds and chemical structures followed by their chief pharmacological activities that include antiviral antimicrobial antioxidant anti cancer anti inflammatory antidiabetic hepatoprotective nephroprotective and cardioprotective activities A review of the published literature on pharmacological activities of each species is included also providing a thorough resource on each of the plants covered in the volume The book s editor an acknowledged expert in this area foresees that these volumes will become a reliable standard resource for the development of new drugs The volumes will be a valuable addition to the

libraries of pharmacy institutes and pharmacy professors research scholars and postgraduate students of pharmacy and medicine and enlightened medical professionals and pharmacists phytochemists and botanists will find much of value as well

*Medicinal and Aromatic Plants of South America* Ulysses Paulino Albuquerque, Umesh Patil, Ákos Máthé, 2018-10-24 This volume in the series deals with the major Medicinal and Aromatic Plants MAPs of South America providing information on major aspects of this specific group of plants on that continent botany traditional usage chemistry production collection practices trade and utilization Brazil in particular offers an immense amount of biodiversity including plants with great pharmacological interest and ethno medicinal importance Contributions are from internationally recognized professionals specialists of the Medicinal and Aromatic Plant domain and have been invited mostly from the members of the International Society for Horticultural Science and International Council for Medicinal and Aromatic Plants

Nutritional Composition of Fruit Cultivars Monique Simmonds, Victor R Preedy, 2015-10-16 Nutritional Composition of Fruit Cultivars provides readers with the latest information on the health related properties of foods making the documentation of the nutritive value of historical cultivars especially urgent especially before they are lost and can't be effectively compared to modern cultivars Because there is considerable diversity and a substantial body of the compositional studies directed towards commercial varieties this information is useful for identifying traits and features that may be transposed from one variety to another In addition compositional and sensory features may also be used for commercialization and to characterize adulteration Detailed characterization of cultivars can be used to identify super foods Alternatively unmasked historical cultivars may be the focus of reinvigorated commercial practices Each chapter in this book has sections on the botanical aspects the composition of traditional or ancient cultivars the composition of modern cultivars a focus on areas of research the specialty of the communicating author of each chapter and summary points Presents the botanical aspects and composition of both traditional and modern plants including in depth insight into current research and overall summary points for each fruit for consistent comparison and ease of reference Provides important information in the consideration of preservation transference or re introduction of historical traditional cultivars into current crop science Provides details on compositional and sensory parameters from aroma and taste to micro and macronutrients Includes data on nutraceuticals and novel components that have proven to impact on or be important in food quality storage processing storage and marketing

Air Pollution Modelling Syuichi Itahashi, 2021-08-30 The air pollution problem inevitably accompanies our human activities Severe air pollution situations have been reported especially in emerging countries and satisfying the air quality standards fully remains an underlying issue Today modeling research is one of the more valuable approaches to understanding the behavior of air pollutants and is useful for regulation policy and decision making Such modeling applications range with regard to horizontal grid resolution from a few km local to hundreds of km regional to thousands of km global To foster our current scientific knowledge on modeling potentialities and limitations scientific research related to multi scale air pollution

modeling is collected in this book *Rediscovering Cancer: From Mechanism to Therapy* Sayali Mukherjee, Somali Sanyal, Sonia Chadha, 2018-09-04 This volume presents a snapshot of some of the most important ongoing research in cancer With cancer as the second leading cause of death worldwide extensive research is going on globally to decipher the molecular mechanism underlying cancer that will help in finding better targets for drug therapy The book brings together new research on molecular mechanism and cancer therapeutics in one place With chapters from experts in their respective fields chapters cover molecular mechanisms etiology prognosis detection and treatment of cancer Emphasis has been given to the intricate mechanism behind the deregulation of cell division disruption of cell cycle check points mutation in oncogenes and tumor suppressor genes apoptosis and erratic cell signaling The book discusses in detail topics such as angiogenesis and tumor microenvironment which are increasingly receiving attention especially in the field of neoplastic vascularization and metastasis The book also includes chapters detailing the current understanding and the future perspective of cancer stem cells

**Food Technology** Murlidhar Meghwal, Megh R. Goyal, Mital J. Kaneria, 2017-08-22 In this era of climate change and food water natural resource crises it is important that current advancements in technology are made taking into consideration the impact on humanity and the environment This new volume Food Technology Applied Research and Production Techniques in the Innovations in Agricultural and Biological Engineering book series looks at recent developments and innovations in food technology and sustainable technologies Advanced topics in the volume include food processing preservation nutritional analysis quality control and maintenance as well as good manufacturing practices in the food industries The chapters are highly focused reports to help direct the development of current food and agriculture based knowledge into promising technologies Features provides information on relevant technology makes suggestions for equipment and devices looks at standardization in food technology explores new and innovative packaging technology studies antimicrobial activities in food considers active constituents of foods and provides information about isolation validation and characterization of major bioactive constituents discusses the effect of laws and regulatory guidelines on infrastructure to transform technology into highly value added products Food Technology Applied Research and Production Techniques will be a very useful reference book for food technologists practicing food engineers researchers professors students of these fields and professionals working in food technology food science food processing and nutrition

**Edible Medicinal And Non-Medicinal Plants** T. K. Lim, 2013-02-02 This book continues as volume 5 of a multicompendium on Edible Medicinal and Non Medicinal Plants It covers edible fruits seeds used fresh cooked or processed as vegetables cereals spices stimulant edible oils and beverages It covers selected species from the following families Apiaceae Brassicaceae Chenopodiaceae Cunoniaceae Lythraceae Papaveraceae Poaceae Polygalaceae Polygonaceae Proteaceae Ranunculaceae Rhamnaceae Rubiaceae Salicaceae Santalaceae Xanthorrhoeaceae and Zingiberaceae This work will be of significant interest to scientists medical practitioners pharmacologists ethnobotanists horticulturists food nutritionists botanists agriculturists

conservationists lecturers students and the general public Topics covered include taxonomy common English and vernacular names origin and distribution agroecology edible plant parts and uses botany nutritive pharmacological properties medicinal uses nonedible uses and selected references

**Quality Control in the Beverage Industry** Alexandru Grumezescu, Alina Maria Holban, 2019-08-15 Quality Control in the Beverage Industry volume 17 in the Science of Beverages series presents a detailed account of the most common aspects and challenges relating to quality control It covers the latest global trends in how to improve beverages using assessment tools authenticity approaches and novel quality control technologies The book presents a great hands on approach for anyone who needs to understand the big picture regarding analytical methods Topics covered include safety the economic impacts of contamination and detection techniques Provides tools to assess and measure sulfites in beverages using different instrumental techniques Presents the application of nanotechnology for the improvement of beverages including taste structure and overall quality Includes analytical procedures for measuring and controlling quality

Ethnobotany and Ethnopharmacology of Medicinal and Aromatic Plants Mohd Adnan, Mitesh Patel, Mejd Snoussi, 2023-08-31 Medicinal and aromatic plants are beneficial to human health Plant derived molecules possess biological activities that can be used to prevent many infectious diseases and metabolic disorders Ethnobotany and Ethnopharmacology of Medicinal and Aromatic Plants summarizes techniques and methods used to study the biological activities of plant derived extracts and compounds to study ethnobotanical and ethnopharmacological features of medicinal and aromatic plants This book Includes computational approaches to study the pharmacological properties of biomolecules in medicinal and aromatic plants Details methods in ethnopharmacology including chromatographical and analytical techniques Demonstrates trends in sustainable use and management of medicinal and aromatic plants Features information on databases and tools used in computational phytochemistry for drug designing and discovery Elucidates the importance of phytochemicals as immunomodulators in herbal drug development including their nanoformulations A volume in the Exploring Medicinal Plants series Ethnobotany and Ethnopharmacology of Medicinal and Aromatic Plants will be of interest to those working with plant extracts including botanists and ethnobotanists pharmacologists and ethnopharmacologists as well as scientists and researchers interested in natural compounds and their potential applications

*Valorization of Fruit Processing By-products* Charis M. Galanakis, 2019-09-14 Valorization of Fruit Processing By products covers the most recent advances in the field of fruit processing by products following sustainability principles The urgent need for sustainability within the food industry necessitates research to investigate the handling of by products with another perspective e g by adapting more profitable options This book covers the latest developments in this particular direction It promotes success stories and solutions that ensure the sustainable management of different fruit processing by products namely apple apricot avocado Castanea sativa citrus date mango melon passion fruit pineapple pink guava pomegranate and watermelon giving emphasis on the recovery of polyphenols antioxidants and dietary fiber Written by a team of experts in food processing and engineering chemistry and



food waste this title is the definite guide for all the involved partners engineers professionals and producers active in the field Explores fruit processing techniques scale up limitations and economical evaluation for each source of fruit processing by product Discusses the valorization of by products derived from different fruits Features the following fruits including apple avocado chestnut citrus date mango melon and watermelon passion fruit pineapple pink guava and pomegranate

*Protective Effects of Medicinal Plant Extracts and Natural Compounds in Skin Disorders* Viviana di Giacomo, Claudio Ferrante, Gokhan Zengin, 2022-08-05

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