

Preclinical Evaluation Of Antidiabetic Activity Of Poly

BACKGROUND: Liraglutide is a GLP-1 receptor agonist with several reported beneficial effects other than its anti-hyperglycemic achievement. However, differences may exist between results observed in preclinical studies and those observed in the real clinical practice. **AIMS:** The aim of this study was to evaluate the effect of 12 months of liraglutide therapy on HbA1c, lipid profile, blood pressure levels, and anthropometric parameters in type 2 diabetes (T2D) patients. **METHODS:** We performed a retrospective multicenter observational clinical study in order to assess the effectiveness of liraglutide therapy in people with T2D in the real world scenario: the Lira-SPD trial. It included 10 Portuguese diabetes outpatient departments. We have analyzed data from 183 T2D patients (60.7% women), before and 12 months after initiation of liraglutide therapy, in which no other antidiabetic drug was introduced during that period. **RESULTS:** The study population was characterized by a mean age of 60.5±19.9 years, diabetes duration of 14.7±17.8 years, HbA1c of 8.4±11.5%, BMI of 36.3±16.3 kg/m² (reflecting a mean body weight of 96.3±118.6 kg), waist circumference of 114.2±112.6 cm, systolic blood pressure of 142±120.3 mmHg, and diastolic of 81.6±112.8 mmHg, total cholesterol of 170.3±143 mg/dL, LDL-c of 101.8±137 mg/dL, HDL-c of 43.2±110.7 mg/dL, and triglycerides of 165.5±198.6 mg/dL. Previously to liraglutide therapy, 162 patients (88.5%) were treated with metformin, 42 (23%) with sulphonylureas, 19 (10.4%) with acarbose, 7 (3.8%) with pioglitazone, 117 (63.9%) with DPP4 inhibitors (DPP-4i), 6 (3.3%) with SGLT2 inhibitors, and 104 (56.8%) with insulin. With the exception for DPP-4i, all patients maintained previous antidiabetic therapy once liraglutide was introduced. One hundred nineteen patients (65%) were treated with 1.8 mg/day of liraglutide and the others with 1.2 mg/day. After 12 months, there was a significant decrease in HbA1c (-0.7±11.3%; p

This reference book contains a comprehensive selection of the most frequently used assays for reliably detecting pharmacological effects of potential drugs, including tests for cardiovascular, analgesic, psychotropic, metabolic, endocrine, respiratory, renal, and immunomodulatory activities. Each of the over 700 assays comprises a detailed

protocol with the purpose and rationale of the method, a description of the experimental procedure, a critical assessment of the results and their pharmacological and clinical relevance, and pertinent references. Identification of specific tests is facilitated by the enclosed CD-ROM which allows for a quick and full text research. An appendix with guidelines and legal regulations for animal experiments in various countries will help to plan these experiments properly in accordance with the welfare of laboratory animals.

This book is a unique overview of insights on the genetic basis of anti-diabetic activity, chemistry, physiology, biotechnology, mode-of-action, as well as cellular mechanisms of anti-diabetic secondary metabolites from medicinal plants. The World Health Organization estimated that 80% of the populations of developing countries rely on traditional medicines, mostly plant drugs, for their primary health care needs. There is an increasing demand for medicinal plants having anti-diabetic potential in both developing and developed countries. The expanding trade in medicinal plants has serious implications on the survival of several plant species, with many under threat to become extinct. This book describes various approaches to conserve these genetic resources. It discusses the whole spectrum of biotechnological tools from micro-propagation for large-scale multiplication, cell-culture techniques to the biosynthesis and enhancement of pharmaceutical compounds in the plants. It also discusses the genetic transformation as well as short- to long-term conservation of plant genetic resources via synthetic seed production and cryopreservation, respectively. The book is enriched with expert contributions from across the globe. This reference book is useful for researchers in the pharmaceutical and biotechnological industries, medicinal chemists, biochemists, botanists, molecular biologists, academicians, students as well as diabetic patients, traditional medicine practitioners, scientists in medicinal and aromatic plants, Ayurveda, Siddha, Unani and other traditional medical practitioners.

Type 2 diabetes (T2D), also known as non-insulin-dependent diabetes mellitus (NIDDM), is a condition in which cells fail to respond to insulin properly. As the disease progresses, the body does not produce enough insulin. There

are several classes of anti-diabetic medications available, including the oral agent metformin. This medication is recommended as first-line treatment for T2D, except for those patients with severe kidney or liver problems. This book discusses the molecular mechanism, pharmacokinetics, and uses of metformin, as well as presents information on adverse drug reactions, drug interactions, and the potential use of metformin in tuberculosis.

Pharmacological Assays

Chemistry and Applications of Benzimidazole and its Derivatives

Edible Plants in Health and Diseases

Conservation and Utilization of Threatened Medicinal Plants

Emerging Nanomedicines for Diabetes Mellitus Theranostics

Herbs for Diabetes and Neurological Disease Management

The demand for traditional medicines, herbal health products, herbal pharmaceuticals, nutraceuticals, food supplements and herbal cosmetics etc. is increasing globally due to the growing recognition of these products as mainly non-toxic, having lesser side effects, better compatibility with physiological flora, and availability at affordable prices. In the last century, medical science has made incredible advances all over the globe. In spite of global reorganization and a very sound history of traditional uses, the promotion of traditional medicine faces a number of challenges around the globe, primarily in developed nations. Regulation and safety is the high concern for the promotion of traditional medicine. Quality issues and quality control, pharmacovigilance, scientific investigation and validation, intellectual property rights, and biopiracy are some key issues that restrain the advancement of traditional medicine around the globe. This book contains diverse and unique chapters, explaining in detail various subsections like phytomolecule, drug discovery and modern techniques, standardization and validation of traditional medicine, and medicinal plants, safety and regulatory issue of traditional medicine, pharmaceutical excipients from nature, plants for future. The contents of the book will be useful for the academicians, researchers and people working in the area of traditional medicine. Finding new strategies for synthesizing benzimidazole derivatives and functionalizing the benzimidazole core has proved to be important due to the compound's various applications in medicine, chemistry, and other areas. The multitude of benzimidazole derivatives marketed as drugs has led to intensive research in the field for the discovery of new biologically active structures. The general applications of benzimidazole derivatives in materials chemistry, electronics, technology, dyes, pigments, and agriculture

open up new research horizons. This book guides the rational design of benzimidazole derivatives synthesis with certain applications. Chapters cover such topics as therapeutic use of benzimidazole in conditions like diabetes, viruses, and parasitic diseases; X-ray crystal structure of selected benzimidazole derivatives; benzimidazole compounds for cancer therapy; and others. Cancer is one of the leading death cause of human population increasingly seen in recent times. Plants have been used for medicinal purposes since immemorial times. Though, several synthetic medicines are useful in treating cancer, they are inefficient and unsafe. However, plants have proved to be useful in cancer cure. Moreover, natural compounds from plants and their derivatives are safe and effective in treatment and management of several cancer types. The anticancer plants such as Catharanthus roseus, Podophyllum peltatum, Taxus brevifolia, Camptotheca acuminata, Andrographis paniculata, Crateva nurvala, Croton tonkinensis, Oplopanax horridus etc., are important source of chemotherapeutic compounds. These plants have proven their significance in the treatment of cancer and various other infectious diseases. Nowadays, several well-known anticancer compounds such as taxol, podophyllotoxins, camptothecin, vinblastine, vincristine, homoharringtonine etc. have been isolated and purified from these medicinal plants. Many of them are used effectively to combat cancer and other related diseases. The herbal medicine and their products are the most suitable and safe to be used as an alternative medicine. Based on their traditional uses and experimental evidences, the anticancer products or compounds are isolated or extracted from the medicinally important plants. Many of these anticancer plants have become endangered due to ruthless harvesting in nature. Hence, there is a need to conserve these species and to propagate them in large scale using plant tissue culture. Alternatively, plant cell tissue and organ culture biotechnology can be adopted to produce these anticancer compounds without cultivation. The proper knowledge and exploration of these isolated molecules or products could provide an alternative source to reduce cancer risk, anti-tumorigenic properties, and suppression of carcinogen activities. Anticancer plants: Volume 1, Properties and Application is a very timely effort in this direction. Discussing the various types of anticancer plants as a source of curative agent, their pharmacological and neutraceutical properties, cryo-pervations and recent trends to understand the basic cause and consequences involved in the diseases diagnosis. We acknowledge the publisher, Springer for their continuous inspiration and valuable suggestions to improvise the content of this book. We further extend our heartfelt gratitude to all our book contributors for their support, and assistance to

complete this assignment. I am sure that these books will benefit the scientific communities including academics, pharmaceuticals, nutraceuticals and medical practitioners.

Diabetes mellitus is a chronic disorder affecting one hundred million people worldwide. This volume comprehensively reviews new developments to provide a clear picture of the role played by drugs and diet in the aetiology, pathogenesis and management of the disease. KEY TOPICS: The book deals with all aspects of the interactions between drugs and diabetes, highlighting recent advances and mechanistic input. It has a unique approach to the subject. And all authors are actively involved in diabetes research, their ongoing commitment to research in the area ensures that all contributions are up-to-date. For clinicians in research industries, hospitals and medical schools. Degree course lecturers and students in pharmacy, medical sciences and biological sciences. The pharmaceutical industry and the food/nutrition/biotechnology industries where information on the aetiology and management of diabetes is greatly needed in the research and development of drugs to combat the disease.

Research and Advancements

Antidiabetic Plants

Effect of Liraglutide in the Real World Setting of Type 2 Diabetes Patients: Preliminary Results from the Lira-SPD Trial

Anticancer plants: Properties and Application

Plants with Anti-Diabetes Mellitus Properties

Metal Oxides for Biomedical and Biosensor Applications

Studies in Natural Products Chemistry, Volume 55 covers rapid developments in spectroscopic techniques, also presenting advances in high-throughput screening techniques, including the new potential to isolate and determine the structures and biological activity of natural products and their applications in the field of new drug development. This ongoing series covers the synthesis, testing and recording of the medicinal properties of natural products, providing cutting-edge accounts of fascinating developments in the isolation, structure elucidation, synthesis, biosynthesis and pharmacology of a diverse array of bioactive natural products.

Focuses on the chemistry of bioactive natural products Contains contributions by leading authorities in the field Presents sources of new pharmacophores

Multiple Biological Activities of Unconventional Seed Oils brings detailed knowledge concerning the biological properties of oils (antioxidant, antimicrobial, antidiabetic, antitumor, anti-inflammatory, etc.), the content of individual substances with health-promoting properties, methods for biological properties assay, the influence of raw material quality and technological processes on the quality of oils, and possible raw materials and oil contaminants with adverse health effects. The book's chapters also highlight the unique properties of new oils, along with their biological activities. Less than a decade ago, the vegetable oils on grocery store shelves were derived from conventional oil seeds e.g., cotton, groundnut, sesame, corn sunflower and soybean. However, as consumers began to understand how fat intake affects overall health,

researchers, plant growers and food manufacturers started to produce oils from unconventional sources. This book highlights what we've learned in the process. Explores unconventional oils, their different sources, and where they grow worldwide Explains the medicinal uses of unconventional oils Details the biological activities, antioxidant and physico-chemical composition of unconventional oils

The Cohen Diabetic RatS Karger AgPlants with Anti-Diabetes Mellitus PropertiesCRC Press

Metal Oxides for Biomedical and Biosensor Applications gives an in-depth overview of the emerging research in the biomedical and biosensing applications of metal oxides, including optimization of their surface and bulk properties. Sections cover biomedical applications of metal oxides for use in cell cultures, antibacterial and antimicrobial treatments, dental applications, drug delivery, cancer therapy, immunotherapy, photothermal therapy, tissue engineering, and metal oxide-based biosensor development. As advanced and biofunctionalized nano/micro structured metal oxides are finding applications in microfluidics, optical sensors, electrochemical sensors, DNA-based biosensing, imaging, diagnosis and analysis, this book provides a comprehensive update on the topic. Additional sections cover research challenges, technology limitations, and future trends in metal oxides and their composites regarding their usage in biomedical applications. Includes an overview of the important applications of metal oxides for biomedical and biosensing technologies Addresses the relationship between material properties, such as structure, morphology, composition and performance Reviews the design and fabrication strategies of metal oxides for use in medical and biosensing applications

Multiple Biological Activities of Unconventional Seed Oils

Antidiabetic Potential of Plants in the Era of Omics

Phytotherapy in the Management of Diabetes and Hypertension

Ethnopharmacology of Eastern European Countries

Botany, Natural Products, & Ethnopharmacology

Textbook Of Pharmacology

Functional foods (foods with known bioactive properties) have shown potential for preventive and therapeutic treatments. However, this potential must be safely determined before they enter the commercial market. At the same time, nutrition research is transforming into a data driven field with reference to the identification and development of functional food products due to the large number of variables affecting food biochemistry in the human body. This volume presents reviews of recent advances in food chemistry, food technology and nutraceutical research (for diet therapy and cosmetics). Chapters in this volume cover a broad spectrum of topics: - drug discovery and development in the modern nutraceutical industry, - recent developments in the extraction, identification and quantification of bioactive peptides in foods, - concepts of bioavailability, bioaccessibility, bioactivity, bioefficiency and bioconversion of bioactive foods, - synthetic routes for obtaining bioactive compounds, - the role of nutrigenomics to identify key cellular functions by specific genetic and epigenetic interactions with a nutrient, - anti-cancer properties of important bioactive components of medicinal plants, - the effect of a diet based on different bioactive foods on prevention and treatment of diabetes, - antioxidant effects on cardiovascular disease, - beneficial effects of bioactive foods on metabolic syndrome, - the potential of tauroursodeoxycholic acid on prevention and recovery of neurodegenerative diseases, - the effects of natural phytochemicals in prostate cancer, - the effects of methylxanthines (caffeine and others), and culinary methods on physiological and toxicological effects of the bioactive food constituents. The volume is an ideal reference for pharmacy students, nutritionists, healthcare providers and nutraceutical R&D specialists interested in functional foods. [Series Intro] Frontiers in Bioactive Compounds brings

edited reviews on the analysis and characterization of natural compounds of medicinal interest. Each volume covers useful information on a variety of natural sources as well as analytical techniques. This series is essential reading for analytical and medicinal chemists as well as professionals involved in natural and pharmaceutical product research and development.

Here is an informative overview of diabetes mellitus in conjunction with plant-based treatments. It discusses available methods for studying the antidiabetic activities of scientifically developed plant products, mechanisms of action, their therapeutic superiority, and current genome editing research perspectives and biotechnological approaches. The book begins with an introduction to diabetes, giving a brief overview of the history, diagnosis, classification, pathophysiology, and risk factors. It goes on to review traditional uses of plants for diabetes along with ethnobotanical information. The results of scientific studies on the various modes of action of antidiabetic plants are discussed, such as the molecular aspects of active plantbased antidiabetic drug molecules. A section featuring recent biotechnological advancements of antidiabetic plants and plant-based antidiabetic drugs covers advances in molecular breeding and application of molecular markers, biotechnologically engineered transgenic medicinal plants, and advances in genomic editing tools and techniques.

Arguably the oldest form of health care, Ayurveda is often referred to as the "Mother of All Healing." Although there has been considerable scientific research done in this area during the last 50 years, the results of that research have not been adequately disseminated. Meeting the need for an authoritative, evidence-based reference, *Scientific Basis for Ayurvedic Therapies* is the first book to analyze and synthesize current research supporting Ayurvedic medicine. This book reviews the latest scientific information, evaluates the research data, and presents it in an easy to use format. The editor has carefully selected topics based on the availability of scientific studies and the prevalence of a disease. With contributions from experts in their respective fields, topics include Ayurvedic disease management, panchkarma, Ayurvedic bhasmas, the current status of Ayurveda in India, clinical research design, and evaluation of typical clinical trials of certain diseases, to name just a few. While there are many books devoted to Ayurveda, very few have any in-depth basis in scientific studies. This book provides a critical evaluation of literature, clinical trials, and biochemical and pharmacological studies on major Ayurvedic therapies that demonstrates how they are supported by scientific data. Providing a natural bridge from Ayurveda to Western medicine, *Scientific Basis for Ayurvedic Therapies* facilitates the integration of these therapies by health care providers.

The increasing prevalence of diabetes mellitus world-wide is an issue of major socio-economic concern. Scientific interest in plant-derived medicine is steadily rising, yet there is often a wide disparity in the caliber of information available. A detailed compilation of scientific information from across the globe, *Traditional Medicines for Modern Times: Antidiabetic Plants* highlights the potential role of dietary and medicinal plant materials in the prevention, treatment, and control of diabetes and its complications. The book not only describes plants traditionally used to treat diabetes, but evaluates the scientific studies on these plants and describes in vitro, in vivo, and clinical methods for their investigation. It examines the theory that changes in dietary patterns from traditional plant foodstuffs containing beneficial components, to richer, more processed "junk" food is responsible for the increased prevalence of diabetes worldwide. The book begins with an introduction to the disease diabetes mellitus written by a consultant physician and an up-to-date, detailed summary table and discussion of scientifically screened antidiabetic plants compiled by authors from the Jodrell Laboratories, Royal Botanic Gardens, Kew, UK. The next chapters provide an outline of clinical, in vivo, and in vitro methods for assessing antidiabetic activity of plant materials, followed by descriptions of traditional plant remedies used in Asia, the Americas, Africa, Europe, and Australia written by an international group of authors active in antidiabetic plant research. The final chapters emphasize the role of particular phytochemical groups in the treatment or prevention of diabetes. By documenting both traditional and scientifically derived knowledge, *Traditional Medicines for Modern Times: Antidiabetic Plants* brings us closer to the translation of traditional knowledge into new methods for treatment of this important disease.

Biotechnology of Anti-diabetic Medicinal Plants

Biomolecular and Clinical Aspects, Second Edition

Herbal Medicine

Chemistry and Mode of Action

New and Future Developments in Microbial Biotechnology and Bioengineering

About the Author : - SD Seth is currently Chair in Clinical Pharmacology at the ICMR and an honorary Advisor to the Clinical Trials Registry India. He has served as a faculty in AIIMS for 29 years. He is the founder member of the National Poisons Information Centre at AIIMS. Professor Seth is a member of several prestigious Committees like the Scientific Advisory Committee of the Drugs for Neglected Diseases Initiative, Geneva, Drugs Technical Advisory Board, Investigational New Drug Committee, National Pharmacovigilance Steering Committee, and other committees of ICMR, CSIR, DST, DBT and Ministry of Health. Vimlesh Seth has a teaching experience of 30 years at the Department of Paediatrics, AIIMS. She has been a recipient of the award James Flett Gold Medal for her work in growth and development of children. In addition, research work guided by her has been awarded the President's medal for the Indian Rheumatic Association, Dr Vaishnav Award and PV Sukhatam Award. This book collects information about the most popular ethnomedicinal plants, which are common in Turkey and around the world. It presents the ethnopharmacological records, in vivo and in vitro studies, side effects, chemical compositions and clinical studies of these medicinal plants. Its special focus is on the novel drug targets for disease and their possible mechanisms of action. It covers botanical descriptions the status of the plants, and food or drug interactions including precautions and warnings about the plants and the available market products. It provides an explanation of recorded and known plant administration dosages. Also, the gap between the traditional practice and scientific/clinical evidences in the use of ethnomedicinal plant is acknowledged. It is well known that traditional knowledge of the use of the medicinal plants in therapy is an important resource for the discovery of novel treatment options and drug targets. The main purpose of this book is to draw attention to ethnomedicinal plant species. Data on the therapeutic potentials of these medicinal plants can now be accessed from a single source. It provides an important resource for future research opportunities for harnessing the full potential of these plants.

The global popularity of herbal supplements and the promise they hold in treating various disease states has caused an unprecedented interest in understanding the molecular basis of the biological activity of traditional remedies. Herbal Medicine: Biomolecular and Clinical Aspects focuses on presenting current scientific evidence of biomolecular ef

This new volume provides a plethora of new information about potential medicinal herbs and their usefulness in treating diabetes and neurological diseases. Most large multinational companies are interested and engaged in the

commercialization of herb-based formulations, and consumers continue to seek natural-based therapies. Herbs for Diabetes and Neurological Disease Management provides insight into plant-based novel molecules targeted for diabetes and neurological disorders. It looks at a selection of herbs that have proven effective in the management of diabetes and neurological disorders, including migraine, epilepsy, memory disorders, depression, and more. Divided into ten chapters focusing on diabetes and its macro- and microvascular complications (migraine, epilepsy, memory disorders, depression and other neuropsychiatric disorders), this book is structured to provide a source of reliable information and enrich the knowledge of readers. Each chapter briefly explains the epidemiology and pathophysiology of the disease state and the possible role of herbal drugs in the prevention of the particular disease. The reported pharmacological activities and possible mechanism of action of herbal drugs are also discussed in detail, which makes this book informative and unique. This new volume will be a reliable reference complementing the substantial information on the use of herbal drugs in diabetes and neurological disorders that serve as the pillars of drug discovery and development.

A comprehensive Approach

Scientific Basis for Ayurvedic Therapies

Dietary Supplements, Botanicals and Herbs at The Interface of Food and Medicine

Medical Botany

Medicinal Plants of Bangladesh and West Bengal

Recent Advances in Application of Fungi and Fungal Metabolites: Current Aspects

Medicinal plants are globally valuable sources of herbal products. Plant-based remedies have been used for centuries and have had no alternative in the western medicine repertoire, while others and their bioactive derivatives are in high demand and have been the central focus of biomedical research. As Medicinal plants move from fringe to mainstream with a greater number of individuals seeking treatments free of side effects, considerable attention has been paid to utilize plant-based products for the prevention and cure of human diseases. An unintended consequence of this increased demand, however, is that the existence of many medicinal plants is now threatened, due to their small population size, narrow distribution area, habitat specificity, and destructive mode of harvesting. In addition, climate change, habitat loss and genetic drift have further endangered these unique species. Although extensive research has been carried out on medicinal and aromatic plants, there is relatively little information available on their global distribution patterns, conservation and the associated laws prevailing. This book reviews the current status of threatened medicinal plants in light of increased surge in the demand for herbal medicine. It brings together chapters on both

wild (non-cultivated) and domestic (cultivated) species having therapeutic values. Thematically, conventional and contemporary approaches to conservation of such threatened medicinal plants with commercial feasibility are presented. The topics of interest include, but not limited to, biotechnology, sustainable development, in situ and ex situ conservation, and even the relevance of IPR on threatened medicinal plants. We believe this book is useful to horticulturists, botanists, policy makers, conservationists, NGOs and researchers in the academia and the industry sectors.

Bioactive Food as Dietary Interventions for Diabetes, Second Edition is a valuable scientific resource that explores the latest advances in bioactive food research and the potential benefits of bioactive food choice on diabetic conditions. Written by experts from around the world, it presents important information that can help improve the health of those at risk for diabetes and diabetes related conditions using food selection as its foundation. This important resource for those involved in the dietary and nutritional care of diabetic patients is also ideal for researchers seeking information on alternative bioactive food-based solutions. Serves as a starting point for in-depth discussions in academic settings that can lead to revised and updated treatment options for diabetes Offers detailed, well-documented reviews outlining the ability of bioactive foods to improve and treat diabetes and obesity Includes updated research on the global epidemic of diabetes Presents global perspectives and coverage of regional foods

The purpose of this book is to introduce the classified chemical components of hypoglycemic compounds in natural products, summarize the recent research progress of natural products with hypoglycemic activity in the past 20 years, and provide the original analysis and development opinions of relevant scholars. Hypoglycemic compounds are to target diabetes mellitus, an important public health problem, one of four priority noncommunicable diseases (NCDs) targeted for action by world leaders. Diabetes mellitus is a common endocrine and metabolic disease, which not only causes physiological damage to patients' kidneys, cardiovascular and cerebrovascular vessels, peripheral blood vessels, nerves and eyes, but also causes mental and psychological pressure to patients. Due to the evidence that traditional medicine and natural herbal formula have advantages in treating diabetes, natural products with hypoglycemic activity have been studied extensively in recent years and have been accepted by many scholars all over the world. This book focuses on the progress on the study of the structure, hypoglycemic activities, structure-activity relationships and mechanism of a wide range of polysaccharides, flavonoids, saponins, alkaloids, terpenoids, polyphenols and other constituents. It will help students and researchers

to understand current approaches and progress in the treatment of diabetes with natural products, which may also be beneficial to develop new hypoglycemic drugs.

New and Future Developments in Microbial Biotechnology and Bioengineering presents an account of recent developments and applied aspects of fungi and its metabolites for human welfare. The fungi and its metabolites are employed in diverse fields of agri-food, biochemistry, chemical engineering, diagnostics, pharmaceuticals and medical device development. The book contains chapters by the eminent researchers working with fungi and fungal metabolites who explain their importance and potential in manifold prospects. The book includes a description of various fungal metabolites and their chemistry and biotechnology.

Highlights the latest developments surrounding the utilization of fungi and fungal metabolites
Overviews applied aspects of fungi and their metabolites for human welfare
Details the usage of fungi and their metabolites in diverse fields
Identifies the importance and potential of fungi and fungal metabolites in manifold prospects
Illustrates recent trends in fungal metabolite research using elaborate, expressive tables and figures with concise information

Structure and Health Effects of Natural Products on Diabetes Mellitus
Black Seeds (*Nigella sativa*)

At the Crossroads Between Nutrition and Pharmacology

Pharmacological and Therapeutic Applications

Drugs, Diet, and Disease: Mechanistic approaches to diabetes

Volume 1

Black Seeds (*Nigella sativa*) is a comprehensive resource covering all aspects of this medicinal plant, well-known for its positive effects in many human ailments. It has been used to promote health and fight diseases, and has been found to have antioxidant, antihypertensive, anti-diabetic, anti-inflammatory, and analgesic effects. It has also been known to have antimicrobial, anticancer, neuro-protectant, cardio protectant, immunomodulator, hepatic protectant characteristics. Thymoquinone, the active compound of the plant, also exhibits these protective qualities against many disorders. This book summarizes the effect of this plant on all the organ systems of the body. Black Seeds (*Nigella sativa*) is a comprehensive resource for researchers working in pharmacology, food chemistry and pharmaceutical chemistry, both in industry and academia. Contains global coverage of the latest research on the pharmacological properties of *Nigella sativa* Includes the medicinal effects of *Nigella sativa*: antioxidant, antihypertensive, anti-diabetic, anti-inflammatory, antimicrobial, and anticancer effects among many others Features many figures with mechanisms and tables to illustrate key details about *Nigella sativa*

The incidence and severity of diabetes mellitus is increasing worldwide, presenting a significant burden to society both in economic terms and overall well-being. Fortunately, time-tested anti-diabetes mellitus plant foods exist that are safe and could be effective in

addressing this condition when consumed judiciously with a concomitant change in lifestyle. Plants with Anti-Diabetes Mellitus Properties presents an exhaustive compilation of the anti-diabetes mellitus activities of more than 1000 plants occurring worldwide. The author provides a brief botanical description, distribution, pharmacological properties, and phytochemicals, where appropriate. A list of traditional medicinal plants used to treat diabetes, but not tested for anti-diabetic activity, is also given. This unique reference highlights anti-diabetes mellitus plant foods along with a list of the edible parts of plants with anti-diabetes mellitus properties. Anti-diabetes mellitus nutraceuticals are described with guidelines for the development of food supplements and formulations of diets appropriate for diabetic patients. This is a valuable source of information for researchers, students, doctors, diabetic patients, and other individuals wanting to learn more about plant-based treatments for diabetes mellitus.

Organized by body system and ailment makes it easy to locate appropriate therapies. Includes background on the physiology of major systems and ailments so readers can understand how and why a pharmaceutical, botanical, or dietary supplement works. Broad coverage includes green plants, fungi, and microorganisms. Includes extensive references and citations from both conventional and complimentary-alternative medical systems when natural products or their derivatives are involved.

Phytotherapy has the potential to give patients long term benefits with less or no side effects. This is the second volume of the series. This volume brings 11 chapters that cover updates on general phytotherapy, traditional Chinese medicine as well as information on anti-diabetic and antihypertensive herbs (including Senna spp., Curcumin, Carum carvi, Premna serratifolia, Eugenia jambolana and more). The monographs presented within this volume give several details necessary for pharmacopoeial data for quality assurance of pharmaceutical products derived from these specific plant sources: botanical features, distribution, identity tests, purity requirements, chemical assays, active or major chemical constituents, clinical applications, pharmacology, contraindications, warnings, precautions, potential adverse reactions, and posology. Hence academic and professional pharmacologists or clinicians will find comprehensive information on a variety of therapeutic agents along with guidelines for applying them in practical phytotherapy of diabetes and hypertension.

Plant Secondary Metabolites, Three-Volume Set

Plant-derived Bioactives

Bioactive Food as Dietary Interventions for Diabetes

The Cohen Diabetic Rat

Studies in Natural Products Chemistry

Volume II : Phytochemical and Pharmacological Properties

Emerging Nanomedicines for Diabetes Mellitus Theranostics provides readers with information on the development of efficacious nanomedicines as potential theranostic agents for diabetes. The book discusses the application of various novel nanomaterials and nanocomposites for targeted delivery of insulin, glucose sensing, including nano-tattoos as

glucose monitors, biosynthesized nanoparticles for diabetes treatment, and pre-clinical and clinical assays to evaluate the efficacy of nanomedicines for diabetes treatment. This is an important references source for materials scientists, pharmaceutical scientists and biomedical engineers who want to increase their understanding of how nanotechnology is being used to improve diabetes treatment. Diabetes has emerged as one of the most common diseases associated with lifestyle choices in the modern world, with significant mortality rates. Conventional treatment methods mainly involve insulin-based therapies. However, insulin therapy possesses several limitations such as weight gain and hypoglycemia. Thus, advanced research in nanomedicine is targeting the development of new and improved diagnostics and treatment methods for diabetes. Explores the significance of nanomaterials and nanocomposites for the controlled delivery of insulin and effective diagnosis of diabetes Assesses the efficacy of novel nano-tattoos as an emerging glucose monitoring system and the potential of biosynthesized nanoparticles as pharmaceutical ingredients for diabetes treatment Describes various pre-clinical and clinical assays to evaluate the toxicity of nanomedicines, along with methods to mitigate the challenges associated with effective diabetes therapy via the use of nanorobots, nanoformulations and smartphone-based technologies Plant secondary metabolites are organic compounds that aid in the growth and development of plants but are not required for the plant to survive by fighting off herbivores, pests, and pathogens. These plant secondary metabolites have been used since early times in various medicines and food products for beneficial health purposes and are still relevant and popular today. This new three-volume Plant Secondary Metabolites provides an abundance of valuable information on secondary metabolites, their health properties and possibilities, and their extraction and application methods.

Annual Reports in Medicinal Chemistry

Medicinal Plants of Bangladesh and West Bengal is a complete compendium. It provides the scientific name, classification, local name(s), historical background, local medicinal uses, botanical description, chemical constituents, pharmacological activity and toxicology of more than 100 medicinal spices used in Bengal. Chemical structures of

active constituents are provided as well as numerous references. This book is an indispensable tool for researchers, as well as graduates in various disciplines, including pharmacy, pharmacology, medicine, biotechnology, nutrition, cosmetology and drug development. It is also suitable for anyone who is looking for natural products as leads to be developed in therapeutics, functional nutrition or cosmetology. Focuses on a group of herbs with economic importance - the spices. These herbs demonstrate the richness of chemical diversity and potential pharmacological applications Features field photos with local healers, markets and mode of preparation as well as providing a complete monograph for each plant Discusses the collection and observation of each medicinal spice and presents the ethnopharmacology recorded by the author in Bengal Provides a wealth of scientific information on medicinal spices from an expert in the field Fills an important niche due to the increasing global interests in natural foods and botanical drugs

Drug Repurposing in Neurodegenerative and Neuropsychiatric Disorders

Traditional Medicines for Modern Times

Fundamentals of Pharmacognosy and Phytotherapy E-Book

Metformin

Scientific and Clinical Evidence

Pharmacology and Drug Interactions

Plants produce a vast number of bioactive compounds with different chemical scaffolds, which modulate a diverse range of molecular targets and are used as drugs for treating numerous diseases. Most present-day medicines are derived either from plant compounds or their derivatives, and plant compounds continue to offer limitless reserves for the discovery of new medicines. While different classes of plant compounds, like phenolics, flavonoids, saponins and alkaloids, and their potential pharmacological applications are currently being explored, their curative mechanisms are yet to be understood in detail. This book is divided into 2 volumes and offers detailed information on plant-derived bioactive compounds, including recent research findings. Volume 1, "Plant-derived Bioactives: Chemistry and Mode of Action" discusses the chemistry of highly valued plant bioactive compounds and their mode of actions at the molecular level. Volume 2, "Plant-derived Bioactives:

Production, Properties and Therapeutic Applications" explores the sources, biosynthesis, production, biological properties and therapeutic applications of plant bioactives. Given their scope, these books are valuable resources for members of the scientific community wishing to further explore various medicinal plants and the therapeutic applications of their bioactive compounds. They appeal to scholars, teachers and scientists involved in plant product research, and facilitate the development of new drugs. The first contribution summarizes current trends in research on medicinal plants in Mexico with emphasis on work carried out at the authors' laboratories. The most relevant phytochemical and pharmacological profiles of a selected group of plants used widely for treating major national health problems are described. The second contribution provides a detailed survey of the so far reported literature data on the capacities of selected oxyprenylated phenylpropanoids and polyketides to trigger receptors, enzymes, and other types of cellular factors for which they exhibit a high degree of affinity and therefore evoke specific responses. And the third contribution discusses aspects of endophytic actinobacterial biology and chemistry, including biosynthesis and total synthesis of secondary metabolites produced in culture. It also presents perspectives for the future of microbial biodiscovery, with emphasis on the secondary metabolism of endophytic actinobacteria.

This new volume, Promising Drug Molecules of Natural Origin, explores potential beneficial drug substances derived from nature. It presents the general principles, characteristics, evaluation techniques, and applications involved in drug molecules from natural sources, such as plants and marine life. With chapters from renowned experts from around the world, the chapters in this volume address the challenges of standardization of herbal medicines, methods of characterization of natural medicines and phyto-constituents, and quality control methods for herbal medicines. Several chapters in the book focus on the evolution of phyto-constituents in cancer therapeutics, while others deal with applications for other diseases, such as diabetes and neuroinflammatory disorders. The volume also specifically reviews heterocyclic drugs from plants. This volume will be a valuable resource for faculty and advanced

students in pharmaceuticals as well as researchers, scientists, and industry professionals in medicine and drug development.

Pharmacognosy (the science of biogenic or nature-derived pharmaceuticals and poisons) has been an established basic pharmaceutical science taught in institutions of pharmacy education for over two centuries. Over the past 20 years though it has become increasingly important given the explosion of new drugs, phytomedicines (plant medicines), nutraceuticals and dietary supplements – all of which need to be fully understood, tested and regulated. From a review of the previous edition: 'Drawing on their wealth of experience and knowledge in this field, the authors, who are without doubt among the finest minds in pharmacognosy today, provide useful and fascinating insights into the history, botany, chemistry, phytotherapy and importance of medicinal plants in some of today's healthcare systems. This is a landmark textbook, which carefully brings together relevant data from numerous sources and provides, in an authoritative and exhaustive manner, cutting-edge information that is relevant to pharmacists, pharmacognocists, complementary practitioners, doctors and nurses alike.' The Pharmaceutical Journal 'This is an excellent text book which provides fascinating insights into the world of pharmacognosy and the authors masterfully integrated elements of orthodox pharmacognosy and phytotherapy. Both the science student and the non-scientific person interested in phytotherapy will greatly benefit from reading this publication. It is comprehensive, easy to follow and after having read this book, one is so much more aware of the uniqueness of phytomedicines. A must read for any healthcare practitioner.' Covers the history, biology and chemistry of plant-based medicines Covers pharmaceutical and nutraceuticals derived from plants Covers the role of medicinal plants in worldwide healthcare systems Examines the therapeutics and evidence of plant-based medicines by body system Sections on regulatory information expanded New evidence updates throughout New material covering non-medical supplements Therapeutics updated throughout Now on StudentConsult

Promising Drug Molecules of Natural Origin

Annual Reports in Medicinal Chemistry

Plants Affecting Human Health

Novel Drug Targets With Traditional Herbal Medicines
Evidence Based Validation of Traditional Medicines
Drug Discovery and Evaluation