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A Review Literature On Development Of Dietary Supplements From Medicinal Plants.

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ABSTRACT

Medicinal plants are used with the intention of health maintenance, to be administered for specific conditions, or both, whether in modern or in traditional medicines. Many phytochemicals with established or potential biological activity have been identified in plants. The compounds found in plants are of several kinds, but most are in four main biochemical classes: terpenes, alkaloids, glycosides, and polyphenols. Plants, including many currently used as culinary spices and herbs, have been used as medicines, not certainly effectively, from ancient times. Polyphenols of many classes are widely spread in plants. Plants having phytoestrogens, a type of polyphenols, have been administered for decades for gynecological conditions, such as fertility, menopausal, and menstrual problems. Nicotine, an alkaloid, from tobacco directly binds to Nicotinic acetylcholine receptors in the body, accounting for its pharmacological effects. Cardiac glycosides are powerful drugs from the medicinal plants including lily of the valley and foxglove; work as diuretics. Terpenoids and terpenes of many kinds are contained in many medicinal plants, and also in resinous plants such as conifers; they are strongly aromatic. In most of the developing countries, especially in the rural areas, local traditional medicine, inclusive of herbalism, is the lone source of healthcare for individuals, while in the developed countries, alternative medicine including dietary supplements is aggressively marketed using claims of traditional medicine. Botanical products sold in the health area are generally intended as drugs, medicinal products, food supplements or substances for therapeutic use. Use of botanicals for improving or to care human health has evolved independently in different countries worldwide. Regulatory issues regarding botanical products designed for the food supplements or medicinal market and their influence on research and development are discussed.

Keywords: Medicinal Plants, Biochemistry, Food Plants, Phytochemicals

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INTRODUCTION

Medicinal plants (medicinal herbs) have been discovered for decades and used in traditional medicine practices ever since prehistoric times. Plants synthesize hundreds of chemical and biochemical compounds for functions including defense against insects, herbivorous mammals, fungi, and diseases. The compounds found in plants (Phytochemicals) are of several kinds, but most are in four main biochemical classes: [1]

- Terpenes
- Alkaloids
- Glycosides
- Polyphenols.

Terpenes are naturally occurring chemical compounds found in plants and some animals. They're responsible for the aromas, flavors, and even colors associated with various types of vegetation. In terms of cannabis, terpenes are what make certain strains smell or taste different from others. This plant contains many medicinal properties like anticancer, antimicrobial, antifungal, antiviral, antihyperglycemic, analgesic, anti-inflammatory, and antiparasitic . Terpene is also used to enhance skin penetration, prevent inflammatory disease [2].

Alkaloids possess psychotropic (e.g. psilocin) and stimulant activities (e.g. cocaine, caffeine, nicotine, theobromine), and have been used in entheogenic rituals or as recreational drugs.

Glycosides showed significant antioxidant activity, anticancer and antitumor activity, hepatoprotective activity, anti-inflammatory activity, anti-diabetes activity, antiviral activity, antibacterial and antifungal activity, and other biological effects.

Polyphenols can help manage blood pressure levels and keep your blood vessels healthy and flexible, promoting good circulation. They also help reduce chronic inflammation, another risk factor for heart disease. Polyphenols can reduce and help control your blood sugar levels [3].

Medicinal plants are used widely in non-industrialized societies and developing countries in Africa, Asia, and Southern America, mainly because they are thought to be very effective, cheaper than modern medicines, and readily available. Plants, including many presently used as spices and culinary herbs, have been used as medicines, not essentially effectively, from prehistoric times. Angiosperms (flowering plants) were known to be the original source of many plant medicines. Human settlements are usually surrounded by weeds often used as herbal medicines, such as dandelion, chickweed, and nettle [4]. Humans were not alone, as is, in utilizing herbs as medicines: a number of animals such as sheep, non-human primates, and monarch butterflies ingest medicinal plants when ill.

Uses of medicinal plants

Plant medicines are extensively used worldwide. In most of the developing countries, especially in the rural areas, local traditional medicines, such as herbalism, are the major source of health care for the people, while in the developed countries, alternative medicines including the use of dietary supplements are marketed aggressively with the claims of traditional medicine. Traditional Chinese medicine uses a wide variety of plants, amongst other materials and techniques [5]. Dietary supplements are substances you might use to add nutrients to your diet or to lower your risk of health problems such as osteoporosis or arthritis. Dietary supplements come in the form of pills, capsules, powders, gel capsules and tablets, extracts, or liquids [6].

- Maintain their general health
- Support mental and sports-related performance
  Provide immune system support

Interactions with Drugs

Supplements can interact with prescription and nonprescription drugs. Such interactions may intensify or reduce the effectiveness of a drug or cause a serious side effect. Before taking supplements, people should consult their doctor, so that such interactions can be avoided. Few well-designed studies have been conducted to investigate supplement-drug interactions, so most information about these interactions comes from sporadic individual reports of interactions [7].

Safety concerns

Dietary supplements and botanical products are presumed to be safe, and are freely available without prescription to all. The FDA reserves the right to remove a product from the market after it is shown to be unsafe or harmful, such as in the case of ephedra -containing dietary supplements.In the past year, the FDA has become increasingly active in pursuing false claims and documented dangers associated with some dietary supplements.[8]The assumption of safety, as well as efficacy, is not always founded, and the widespread marketing and use of herbs and other dietary supplements may be problematic for cancer patients and others on prescription medication[9]. MSKCC guidelines request no herbal remedies or other supplements during receipt of cancer treatment. US Department of Agriculture (USDA)-level vitamins, calcium, and vitamin D are exceptions under a patient's specific clinical circumstances [10].

CONCLUSION

Plants synthesize hundreds of chemical and biochemical compounds for functions including defense against insects, herbivorous animals mammals, fungi, and diseases. Numerous phytochemicals with established or potential biological activity have been identified in plants. The pharmacological actions and phytochemical contents, if any, of several plants with medicinal potential remain untapped unassessed by rigorous scientific research to categorically define safety and efficacy. Medicinal plants are used widely in non-industrialized societies and developing countries in Africa, Asia, and Southern America, mainly because they are thought to be very effective, cheaper than modern medicines, and readily available. Medicinal plants face both specific threat of over-collection to meet the market demand and the general threats, such as habitat destruction and climate change. Plants, including many currently used as culinary herbs as well as spices, have been used as medications, not necessarily effectively, from ancient times. Flowering plants, known as Angiosperms, were theoriginal source of many plant medicines. The place of plant in medicine was drastically altered in the nineteenth century by application of chemical analysis. Alkaloids were isolated from a succession of medicinal plants, starting with morphine from the poppy. All plants produce chemical compounds which give them an evolutionary advantage, such as defending against herbivores or, in the example of salicylic acid, as a hormone in plant defenses. Polyphenols of several classes are widespread in plants.

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