

REVIEW ARTICLE

Update properties of Cinnamon cassa and Aloe vera

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ABSTRACT

Herbal formulations continuously have attracted substantial attention because of their good activity and relatively lesser or not as much of side effects with synthetic drugs. Herbal beauty treatment was carried out in the Majestic palaces of India to intensify the beauty and maintain general hygiene. In the Indian system of medicines-Ayurveda *Aloe vera*, *Cinnamomum cassia* has been mentioned as a remedy for treating wound injuries and infectious diseases. *C. cassia* has a wide range of effects, including antitumour, anti-inflammatory and analgesic, anti-diabetic and anti-obesity, antibacterial and antiviral, cardiovascular protective, cytoprotective, neuroprotective, immunoregulatory effects, anti-tyrosinase activity and other effects. Similarly *Aloe vera* has been used to treat skin injuries (burns, cuts, insect bites, and eczemas) and digestive problems because its anti-inflammatory, antimicrobial, and wound healing properties.

Keywords: *Phytochemicals, Alkaloids, Flavonoids, triterpenoids, phenols, carbohydrate, Saponins, Cinnamomum cassia, Aloe vera, Antimicrobial, antitumor, cardioprotective*

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INTRODUCTION

Natural products from plants, animals and minerals are the basis for treating human diseases. Herbs are making a revival and the 'Renaissance' of herbal is happening all over the world. The herbal products today symbolise safety in contrast to the synthetics that are regarded as unsafe to human and environment. Although herbs had been priced for their medicinal, flavouring and aromatic qualities for centuries, the synthetic products of the modern age surpassed their importance, for a while.

These plants are a rich source of compounds that can be used to develop drug synthesis. The parts of medicinal plants that may be used are different types of seeds, root, leaf, fruit, skin, flowers or even the whole plant. In the body of these plants, certain materials are produced and stored that are referred to as active compounds (substances), which have physiological effects on the living organisms. Medicinal plants are

used for treatment because they have certain properties, including synergistic actions.

Cinnamomum cassia: Kingdom: Plantae; Division: Magnoliophyta; Class: Magnoliopsida; Order: Laurales; Family: Lauraceae; Genus: Cinnamomum; Species: cassia



Cinnamomum cassia (also known as *Cinnamomum aromaticum*, Chinese cinnamon or Chinese cassia) belongs to the plant kingdom family of Laurels (Lauraceae). It is extracted from the bark of its tree and is used as a flavouring agent in various Asian cuisines. India, China, Uganda, Vietnam, Bangladesh and Pakistan are the major farming countries. The herb is strongly aromatic, with a tinge of bitterness and a sweet taste. The herb is used in various types of herbal medicine too (1). In terms of nutritional properties, cinnamon is considered to be a very good source of nutrition. Iron, calcium and manganese, as well as dietary fiber. Different nutrients are present like Sodium, carbohydrates, sugar, fatty acids, amino acids and so on are included in cinnamon. The most beneficial feature of the cinnamon tree is the outer bark that is normally used as a spice and for many natural spices, therapeutic applications. The inner bark of the cinnamon tree has more medicinal goods, impacts and contains more essential oil too (2). It is acknowledged that the cinnamon bark spice is offered during the year and is mainly accessible. It is ideal for consumption as a tea, particularly as it's warm and sweet during winter, the flavor is very aromatic, too. In cooking, the bark of cinnamon is used as a condiment and flavouring material. In action, it is carminative, astringent, relaxing, antiseptic. This herb's essential oil serves as an effective antibacterial, anti-fungal and uterine stimulant. It controls vomiting, relieves flatulence and has been found to be beneficial for diarrhoea and womb hemorrhage (3). Eating at least half a teaspoon of cinnamon per day has been recorded to reduce blood sugar and cholesterol levels. It is also stated that cinnamaldehyde improves wound healing in zebrafish (4). *Cinnamomum cassia* is a usually used spice and flavouring agent, and the bark of *Cinnamomum cassia* is likewise used to growth blood movement and as an analgesic. *Cinnamomum cassia* is frequently formulated with other herbs; it is one of the seven botanical components of Shexiang Baixin pill (SBP), a well known drug prescribed for chest pain and discomfort associated with coronary artery disease. Its antimicrobial properties against the most common microorganisms causing dental caries, endodontic and periodontal lesions, and candidiasis (5). Cinnamon extracts, and pure compounds show significant antimicrobial activities against oral pathogens and could be beneficial in caries and periodontal disease prevention, endodontics, and candidiasis treatment.

Attention is likewise focused on its anti-inflammatory and anticancer activities, in addition to its effect on hypertension, insulin resistance, and noninsulin-based diabetes mellitus. In vitro and in vivo research imply that cinnamaldehyde, a bioactive element from *Cinnamomum cassia*, is a herbal insecticide, is an antimicrobial, antidiabetic, antilipidemic, anti-

inflammatory, and neuroprotective agent, and turns on PI3K/AKT and MAPK signalling pathways, growing VEGF expression, and stimulating angiogenesis in human umbilical vein endothelial cells (6).

Aloe-vera: Kingdom: Plantae; Division: magnoliophyta; Class: Liliopsidia; Order: Asperagales; family: Asphodelaceae; Genus: Aloe; Species: Vera



Aloe-vera (Fam.-Liliaceae) is used in Ayurvedic, homoeopathic, and Ayurvedic herbs. Allopathic medical systems, not only in the tribal culture, but also in the majority of Food and medicine from the people. *Aloe vera* is a plant similar to cactus, but it is synonymous with onions, garlic and asparagus. It is stemless with triangular fleshy leaves ranging from grey-green to bright green in color and tiny white teeth on the margin of the leaves. The leaves are composed of three layers: an inner gel, a yellow sap and the outer thick layer of 15-20 cells called as rind. The leaves of the plant contain different vitamins, minerals, Amino acids, enzymes, natural sugars, and other bioactive compounds Anti-inflammatory, anticancer, antioxidant, emollient, purgative, antimicrobial, anti-inflammatory, aphrodisiac, anthelmintic, antifungal, antiseptic, and cosmetic values. Species of the Aloe plant Had extreme antimalarial activity. It's got this plant Sunburns, burns and slight cuts and even skin cancer may be treated. It's for as a skin healer, external use of cosmetics mostly requires and prevents damage. Epithelial tissue cures acne and gives the skin a youthful glow; it also serves as an acne remedy. A laxative that is incredibly strong and possesses potential chronic intoxicity (7).

Aloevera has been used to treat burns, ulcers, and surgical wounds for over 5000 years by Egyptians, Romans, and indigenous peoples of Africa, Asia, and the Americas (8). Pyrocatechol, saponins, acemannan, anthraquinones, glycosides, oleic acid, phytol, and simple and complex water-soluble polysaccharides are only a few of the natural bioactive compounds found in *Aloevera* (9). Alcohol and aqueous extracts of *Aloevera* leaves have lower antimicrobial activity than acetone extracts. Gram-positive bacteria tend to be more susceptible to Aloe vera than Gram-negative bacteria (10). Compounds with recognized antimicrobial interest are saponins, acemannan, and anthraquinone derivatives (11). According to a more recent study, the

cumulative evidence supports the use of *Aloevera* for the healing of first to second degree burns (12). The wound healing property of *Aloevera* gel has been attributed to Man-nose-6-phosphate (13). According to Hayes, glucomannan and plant growth hormone gibberellins interact with fibroblast growth factor receptors and promote their activity and proliferation, resulting in increased collagen synthesis in topical and oral Aloe administration (14). *Aloevera* has an effect on collagen composition (more form III) and collagen crosslinking for wound contraction and breaking power . It also boosts hyaluronic acid and derma-tan sulphate synthesis in the granulation tissue of a healing wound (15). Acemannan is a long chain of acetylated mannose that is considered the main functional component of *Aloevera*. This complex carbohydrate helps wounds heal faster and prevents skin reactions caused by radiation. Macrophage-activating capability acemannan can also additionally stimulate the discharge of fibrogenic cytokines. (16). Mesoglycan moieties bind and seize endogenous mitogen inhibitors and reactive oxygen species and sell phagocytosis. Coincidentally, glycans stabilize secreted cytokines, increase factors, and different bioactives, prolonging their activity. Topically applied acemannan has been reported to significantly reduce the time to wound closure in a rat wound healing model, acting via cyclin D1 and AKT/mTOR signal pathways. *Aloevera* glycans also are pronounced to seriously enhance de novo formation of granulation tissue with the aid of using an unknown mechanism (17). In a study, the impact of *Aloevera* gel become investigated on spherical wound version in male rat. It become located that *Aloevera* gel notably decreased the wound thickness and adjusted the neutrophil, macrophage and fibroblast cells compared with manage group. It has been confirmed that oral management of mucilage of *Aloevera* to kind II diabetes Wistar rat improves the fashion of wound recuperation via way of means of growing within the expression of vascular endothelial boom factor (VEGF) and reworking boom factor- β 1 (TGF- β 1) which stimulates the fibroblast for reconstruction of extracellular matrix (18 21).

CONCLUSION

Herbal medicines have been very useful for curing most of the diseases. The available in vitro and animal in vivo evidence suggests that cinnamon has anti-inflammatory, antimicrobial, antioxidant, antitumor, cardiovascular, cholesterol-lowering, and immunomodulatory effects. In vitro studies have demonstrated that cinnamon may act as an insulin mimetic, to potentiate insulin activity or to stimulate cellular glucose metabolism. Furthermore, animal studies have demonstrated strong hypoglycemic properties. *Aloevera* research has shown its anti-

cancer action, skin and digestive protective activity, and antimicrobial properties. Clinical trials have been conducted with both herbs, in different human conditions and pathologies.

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