



Darchini And Its Therapeutic Importance In Unani Medicine- A Comprehensive Review

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Abstract:

Darchini, commonly known as cinnamon, holds a significant place in traditional systems of medicine, including Unani Medicine. This aromatic spice has been utilized for centuries in Unani Medicine, an ancient healing system based on the teachings of Greek physician Hippocrates and further developed by renowned scholars such as Avicenna. In recent years, scientific research has shed light on the diverse pharmacological properties of cinnamon, including its antioxidant, immunomodulator, anti-inflammatory, antidiabetic, nephroprotective, neuroprotective, anticancer, cardiovascular, antimicrobial, wound healing etc., effects. This paper provides a comprehensive review of the traditional uses and therapeutic potential of Darchini within the framework of Unani Medicine, highlighting its applications in managing various health conditions. Additionally, this review aims to bridge the traditional knowledge of Unani Medicine with contemporary scientific findings to enhance the understanding and utilization of Darchini in modern healthcare practices.

Keywords: Darchini; Unani Medicine; traditional Medicine; Therapeutic importance

Introduction:

Cinnamomum zeylanicum, commonly known as Ceylon cinnamon or “true cinnamon,” is a revered spice derived from the inner bark of the *Cinnamomum verum* tree [1]. Renowned for its distinct flavor, aroma, and medicinal properties, *C. zeylanicum* has been prized for centuries and is a vital component in various culinary, traditional, and alternative medicine practices [2]. Native to Sri Lanka (formerly Ceylon), southern India, Bangladesh, and Myanmar, this small evergreen tree belongs to the Lauraceae family [1]. The cultivation and use of *C. zeylanicum* have expanded globally due to its diverse applications in food, beverages, pharmaceuticals, and cosmetic industries [3]. Ceylon cinnamon stands apart from its close relative, cassia cinnamon (*Cinnamomum cassia*), and due to its delicate and subtly sweet taste, light brown color, and thin, fragile bark. This botanical distinction and superior quality contribute to its higher demand and recognition in international markets [4]. Traditional systems of medicine, such as Ayurveda, Traditional Chinese Medicine (TCM), and Unani, have long incorporated *C. zeylanicum* for its therapeutic attributes [5]. Its traditional uses encompass managing gastrointestinal disorders, respiratory ailments, menstrual problems, and promoting overall well-being. Contemporary scientific research has increasingly supported these traditional applications, unveiling the pharmacological properties and health benefits associated with *C. zeylanicum*, including its antioxidant, anti-inflammatory, antimicrobial, antidiabetic, and antineoplastic activities [6]. This introduction aims to provide an overview of *Cinnamomum zeylanicum*, highlighting its cultural, historical, botanical, and traditional significance, as well as setting the stage for a detailed exploration of its diverse uses and potential health benefits [7]. The morphology of cinnamon, or Ceylon cinnamon, encompasses its physical characteristics, including the structure and features of its various plant parts. Here is an overview of the morphology of cinnamon [8]. Cinnamon is an evergreen tree that typically grows up to 10-15 meters in height, although some can reach up to 20 meters. The tree has a straight trunk and a dense, rounded crown. The leaves of Ceylon cinnamon are shiny, leathery, and dark green in color. They are simple, alternate, and elliptical to ovate in shape, with pointed tips and entire margins. The leaves emit a characteristic aromatic fragrance when crushed [9]. The bark is the most sought-after part of the cinnamon tree. It is obtained by stripping the outer bark of young branches [10]. The bark is thin, smooth, and brittle, often appearing in quills or rolled sticks. When dried, it curls into characteristic quills or scrolls. Cinnamon trees produce small, inconspicuous flowers that are pale yellowish-green in color. The flowers are arranged in panicles, and they have

a slightly sweet fragrance [11]. The fruits of cinnamon are small, dark purple to black berries. They are ovoid or ellipsoid in shape and contain a single seed. The seed is a single, hard, dark brown to black structure found within the fruit. The roots of the cinnamon tree are well-developed and aid in anchoring the tree in the soil [7,8]. Understanding the morphology of cinnamon is essential for its cultivation, harvest, and utilization in various industries, especially in the production of spices and traditional medicine. The unique characteristics of its leaves, bark, flowers, fruits, and seeds contribute to its distinct flavor, aroma, and medicinal properties, making it a valuable and versatile plant [12].

Vernacular Names:

Cinnamon is known by various vernacular names across different cultures and regions. Here are some of the vernacular or common names for cinnamon in different languages: English-Cinnamon; Spanish-Canela; French-Cannelle; German-Zimt; Italian-Cannella; Portugues- Canela; Dutch-Kaneel; Russian-Koritsa; Chines-Ròugùi; Japanese-Shinamon; Hindi-Daalchini; Bengali-Daruchini; Tamil-Karpooravalli; Telugu-Daalchina; Arabic-Qurfa; Urdu-Darchini; Persian-Saila-Myah, Darchini, Darchinisailaniyah, Talikhahe; Unani-Kinnamomon. These names reflect the diverse cultural and linguistic contexts in which cinnamon is utilized and appreciated globally. In each culture, cinnamon holds its own significance and plays a unique role in culinary, traditional medicine, and cultural practices [13,14,15,16].



fig: cinnamon bark



fig: cinnamon tree



fig: cinnamon powder

Temperament of Darchini:

The temperament, known as “*Mizaj*” in Unani medicine, categorizes substances based on their inherent qualities and effects on the body's balance of humors (blood, phlegm, yellow bile, black bile). The temperament of cinnamon in Unani medicine is considered to be “HAR” (hot) and ‘*Yabis*’ (dry). ‘*Har*’ refers to the heating or warming nature of a substance. Cinnamon is classified as ‘*Har*’ due to its ability to generate heat within the body when consumed. This heating quality is believed to stimulate bodily functions and increase circulation. ‘*Yabis*’ signifies the drying property of a substance. Cinnamon is considered ‘*Yabis*’ because it has the ability to reduce moisture or dampness in the body, making it useful in conditions associated with excess phlegm or fluid retention. The combination of being ‘hot’ and ‘dry’ in temperament makes cinnamon a popular ingredient in traditional systems like Unani medicine, where it is used to balance the effects of colder or moister foods and herbs. It is believed to enhance digestion, promote circulation, and support respiratory health. [13,14,15,16].

Pharmacological actions: Cinnamon (*Cinnamomum zeylanicum*) possesses a range of pharmacological actions that contribute to its potential health benefits. These actions are the result of the various bioactive compounds found in cinnamon, including cinnamaldehyde, eugenol, cinnamic acid, coumarin, and more [17,18,19,20]. Understanding these pharmacological actions of cinnamon is crucial for exploring its potential applications in modern medicine and promoting its usage in a controlled and beneficial manner. It's important to note that while cinnamon has promising health benefits, proper dosage and consultation with a healthcare professional are advised before using it for therapeutic purposes [21,22].

Here are some of the key pharmacological actions of cinnamon:

Antioxidant Activity: Cinnamon exhibits potent antioxidant properties, helping to neutralize harmful free radicals and oxidative stress in the body [23]. Antioxidants aid in reducing the risk of chronic diseases and support overall health. Cinnamon is rich in antioxidants, such as polyphenols and flavonoids, which help combat oxidative stress and reduce the formation of free radicals in the liver. Oxidative stress is often associated with liver damage, and antioxidants play a key role in mitigating this damage. Cinnamon is a rich source of polyphenols, including flavonoids and phenolic compounds [24]. These polyphenols are known for their strong antioxidant activity. Catechins, epicatechins, and procyanidins are among the polyphenols found in cinnamon

that contribute to its antioxidant properties. Cinnamon's active compounds, such as cinnamaldehyde and eugenol, are effective in scavenging and neutralizing free radicals. Free radicals can cause oxidative damage to cells and DNA, leading to various health problems, including cardiovascular diseases, cancer, and neurodegenerative disorders [25]. Oxidative stress occurs when there's an imbalance between the production of free radicals and the body's ability to neutralize them. Cinnamon's antioxidants help mitigate oxidative stress by neutralizing these harmful free radicals and reducing cell damage. Cinnamon has been shown to inhibit lipid peroxidation, a process where free radicals attack lipids (fats) in cell membranes. Lipid peroxidation can lead to cell damage and is a key contributor to various chronic diseases [26]. Cinnamon may stimulate the body's own antioxidant defense mechanisms. It can enhance the activity of antioxidant enzymes like superoxide dismutase (SOD), catalase, and glutathione peroxidase, helping to protect cells from oxidative damage. Cinnamon's antioxidants can protect cellular components such as proteins, lipids, and nucleic acids from oxidative stress. This protection helps maintain cellular function and integrity [27].

Immunomodulator Activity: Cinnamon may help modulate the immune system, enhancing its function and response against infections and illnesses. Immunomodulation refers to the process of modifying or regulating the immune system's response [28]. Research suggests that cinnamon may have immunomodulatory effects due to its various bioactive compounds, such as cinnamaldehyde, cinnamic acid, and other polyphenols. Some studies suggest that cinnamon may influence the immune response by modulating the production of certain immune cells and cytokines. Cytokines are molecules that play a crucial role in cell signaling and immune system regulation. Some studies suggest that cinnamon may have an immunostimulatory effect, meaning it can enhance the activity of immune cells [29]. This could include increasing the production of immune mediators like cytokines, which play a vital role in immune signaling and response. Cinnamon has been investigated for its potential to enhance the immune system's response to infections. It may aid in promoting the body's defense mechanisms against bacterial, viral, or fungal pathogens. Cinnamon possesses anti-inflammatory properties that may help regulate the immune system. Chronic inflammation can suppress the immune response, so reducing inflammation can indirectly support immune function. Cinnamon is rich in antioxidants, which help neutralize free radicals and reduce oxidative stress [30]. By reducing oxidative stress, cinnamon may support the immune system, as excessive oxidative stress can impair immune function. Some components of cinnamon may modulate

the activity of immune cells, including macrophages, lymphocytes, and natural killer cells. These cells are essential for the immune response against infections and cancer. Compounds in cinnamon may influence immune signaling pathways, affecting the production of various immune mediators and helping to balance the immune response [31].

Anti-diabetic Activity: Cinnamon can help lower blood sugar levels by improving insulin sensitivity and enhancing glucose metabolism. It may be beneficial for individuals with diabetes or insulin resistance [32]. Cinnamon has been shown to enhance insulin sensitivity. Insulin is a hormone that helps regulate blood sugar levels. Improved sensitivity to insulin means that cells are more efficient at using glucose from the bloodstream, which is particularly beneficial for individuals with insulin resistance, a key factor in type 2 diabetes [33]. Several studies suggest that cinnamon can lower blood glucose levels by slowing down the absorption of glucose after a meal [34]. It may achieve this by inhibiting digestive enzymes, which reduces the rate at which glucose enters the bloodstream. Cinnamon may stimulate insulin signaling pathways within cells. This activation can help enhance the uptake of glucose by cells, thereby reducing blood sugar levels. Some studies suggest that cinnamon may have a protective effect on pancreatic beta cells, which produce and release insulin. Protecting these cells may help in maintaining insulin production and release [35,36].

Hepatoprotective Activity: Cinnamon (*Cinnamomum zeylanicum*) has been investigated for its potential hepatoprotective activity, indicating its ability to protect the liver from damage and support its overall function [37]. Several studies have explored the effects of cinnamon on liver health and its role in preventing liver damage and promoting liver function. Cinnamon has been shown to regulate liver enzymes, including alanine aminotransferase (ALT), aspartate aminotransferase (AST), and alkaline phosphatase (ALP), which are important markers of liver function [38]. Maintaining normal levels of these enzymes is vital for liver health. Some research suggests that cinnamon may have inhibitory effects against hepatitis B and C viruses, which are known to cause liver inflammation and damage. Cinnamon has been associated with promoting liver cell regeneration, aiding in the healing and repair of liver tissue. Cinnamon may play a role in preventing and managing non-alcoholic fatty liver disease (NAFLD) by reducing fat accumulation in the liver and improving lipid metabolism [39]. Hepatotoxicity, or liver toxicity, can be caused by exposure to harmful substances or

drugs. Cinnamon has shown potential in protecting the liver from hepatotoxicity induced by various toxic agents, including drugs and chemicals. Studies suggest that cinnamon may support the liver's detoxification processes. It may enhance the liver's ability to metabolize and eliminate toxins from the body, reducing the burden on the liver [40].

Neuroprotective Activity: Cinnamon may have neuroprotective properties, potentially protecting against neurodegenerative diseases due to its antioxidant and anti-inflammatory actions. Cinnamon is rich in antioxidants, including polyphenols, which have been shown to have neuroprotective effects [41]. Antioxidants help neutralize harmful free radicals and oxidative stress in the brain, which can contribute to neurodegenerative diseases like Alzheimer's and Parkinson's. Chronic inflammation is associated with various neurodegenerative disorders. Cinnamon exhibits anti-inflammatory properties that may help mitigate inflammation in the brain, potentially protecting neurons and supporting overall brain health [42]. Oxidative stress can cause damage to brain cells and is implicated in the development and progression of neurodegenerative diseases. Cinnamon's antioxidants may help protect brain cells from oxidative stress and subsequent damage. Amyloid beta aggregation is a hallmark of Alzheimer's disease. Studies suggest that cinnamon extracts may inhibit the aggregation of amyloid beta peptides, potentially slowing the progression of Alzheimer's disease [43]. Some research has indicated that cinnamon may improve cognitive function and memory. It may enhance brain activity and support learning and memory processes. Cinnamon may help improve blood circulation, including blood flow to the brain. Proper blood flow is essential for delivering oxygen and nutrients to brain cells, promoting brain health and function [44]. Neurogenesis is the process of forming new neurons (brain cells), which is important for brain health and plasticity. Some studies suggest that compounds in cinnamon may promote neurogenesis, potentially supporting brain repair and maintenance [45].

Nephroprotective Activity: Cinnamon is rich in antioxidants, particularly polyphenols, which may help combat oxidative stress and reduce damage to kidney cells. Oxidative stress plays a role in various kidney diseases and disorders [46]. Chronic inflammation can contribute to kidney damage and disease. Cinnamon's anti-inflammatory properties may help reduce inflammation within the kidneys, potentially protecting them from injury [47]. Some studies have suggested that cinnamon extracts may help improve renal function by positively

affecting various parameters such as serum creatinine, blood urea nitrogen (BUN), and glomerular filtration rate (GFR) [48]. Diabetic nephropathy is a common complication of diabetes and can lead to kidney damage. Cinnamon has been investigated for its potential to mitigate diabetic nephropathy through its antidiabetic, antioxidant, and anti-inflammatory properties [49]. Cinnamon may have a protective effect against nephrotoxic substances and drugs that can harm the kidneys. Its potential to reduce toxic effects on the kidneys is an area of ongoing research. High blood pressure is a risk factor for kidney disease [50]. Some studies suggest that cinnamon may have mild anti-hypertensive effects, which could indirectly support kidney health. Cinnamon has been investigated for its potential in preventing kidney stones, possibly by reducing the formation of crystals that contribute to stone formation [51].

Anti-inflammatory Activity: Cinnamon has anti-inflammatory effects due to its ability to inhibit inflammatory mediators and enzymes [52]. This can help in managing inflammation-related conditions and diseases. Cinnamon possesses anti-inflammatory properties that can help reduce inflammation in the liver. Inflammation is a common factor in various liver diseases, and mitigating it can aid in preserving liver function. Cinnamaldehyde, a major component of cinnamon, has been shown to inhibit the release and activity of inflammatory mediators such as prostaglandins and leukotrienes [53]. These mediators play a key role in the inflammatory response. Cinnamon can modulate various signaling pathways related to inflammation. It may interfere with NF- κ B (nuclear factor kappa B) activation, a crucial transcription factor involved in the inflammatory response. By doing so, cinnamon helps regulate the expression of inflammatory genes. Cinnamon has been demonstrated to reduce the production of pro-inflammatory cytokines such as interleukin-1 beta (IL-1 β) and tumor necrosis factor-alpha (TNF- α) [54]. These cytokines are involved in the initiation and amplification of inflammation. Cinnamon is rich in antioxidants, which can neutralize free radicals and reduce oxidative stress. Oxidative stress often contributes to inflammation, and by reducing it, cinnamon indirectly exhibits anti-inflammatory effects. Cinnamon compounds can inhibit enzymes such as cyclooxygenase (COX) and lipoxygenase (LOX), which are involved in the production of inflammatory molecules [55]. Inhibiting these enzymes helps in reducing inflammation. Cinnamon may have a role in alleviating symptoms of allergies and asthma by inhibiting allergic responses and reducing inflammation associated with these conditions. Cinnamon may help in suppressing the infiltration of inflammatory cells into affected tissues, which is a key process in the inflammatory response [56].

Anti-hypertensive Activity: Cinnamon may help in lowering blood pressure, which is beneficial for individuals with hypertension. It can relax blood vessels and improve circulation [57]. Cinnamon may promote vasodilation, which is the relaxation and widening of blood vessels. This effect can help improve blood flow and reduce blood pressure by easing the strain on the cardiovascular system [58]. Cinnamon may enhance endothelial function, the lining of blood vessels. Healthy endothelial function is crucial for blood vessel health and can contribute to the regulation of blood pressure [59]. Some research suggests that compounds found in cinnamon may inhibit ACE, an enzyme that constricts blood vessels. By inhibiting ACE, cinnamon may help lower blood pressure. Cinnamon is rich in antioxidants that help neutralize harmful free radicals. Oxidative stress can contribute to hypertension, and by reducing oxidative stress, cinnamon may indirectly aid in managing blood pressure [60]. Cinnamon may have a mild diuretic effect, promoting increased urine production. This can help reduce excess fluid and sodium in the body, potentially contributing to blood pressure regulation. Cinnamon has been studied for its potential to improve insulin sensitivity [61]. Insulin resistance is associated with hypertension, and by improving insulin sensitivity, cinnamon may have a positive impact on blood pressure. Some studies suggest that cinnamon may help reduce the activity of the sympathetic nervous system, which can play a role in hypertension [62].

Anticancer Activity: Some studies suggest that cinnamon may possess anti-cancer properties by inhibiting the growth of cancer cells and inducing apoptosis (programmed cell death) [63]. Cinnamon is rich in antioxidants, such as polyphenols, which can neutralize harmful free radicals. Free radicals can damage DNA and other cellular components, potentially contributing to the development of cancer. Antioxidants help protect cells from this damage. Chronic inflammation is associated with the development and progression of cancer [64]. Cinnamon possesses anti-inflammatory properties, and by reducing inflammation, it may indirectly play a role in preventing or slowing down the growth of cancer cells. Apoptosis is a process where damaged or abnormal cells are programmed to self-destruct, preventing the formation of tumors. Some studies suggest that compounds in cinnamon may induce apoptosis in cancer cells, which could potentially inhibit their growth and proliferation [65]. Certain components of cinnamon have been found to inhibit the growth and proliferation of cancer cells, potentially disrupting their ability to form tumors and metastasize. Angiogenesis is the process of new blood vessel formation, which is essential for tumor growth and metastasis. Some research indicates that cinnamon

may possess anti-angiogenic properties, potentially inhibiting the blood supply to tumors [66]. Compounds in cinnamon may modulate signaling pathways involved in cell growth, differentiation, and survival. This modulation can influence the behavior of cancer cells and potentially inhibit their growth. Cinnamon has been shown to protect against DNA damage caused by mutagens and carcinogens. Preventing DNA damage is crucial in reducing the risk of cancer [67].

Anti-coagulant activity: Cinnamon has anticoagulant effects, potentially reducing the risk of blood clot formation and improving blood flow [68]. Cinnamon contains compounds that may interfere with the activity of blood clotting factors, including thrombin and other coagulation proteins. Thrombin is a key enzyme in the blood clotting cascade, and inhibiting its activity can impede the formation of clots [69]. Cinnamon has been studied for its potential to inhibit platelet aggregation, a crucial step in the formation of blood clots. By reducing platelet aggregation, cinnamon may help prevent abnormal clotting. Some studies suggest that cinnamon may inhibit enzymes involved in blood clotting, such as cyclooxygenase and lipoxygenase [70]. These enzymes are associated with the production of compounds that promote blood clotting. Fibrinolysis is the process by which blood clots are broken down in the body. Cinnamon may aid in promoting fibrinolysis, assisting in the dissolution of blood clots [71]. Cinnamon is rich in antioxidants that help protect cells and tissues from oxidative damage. Oxidative stress can promote inflammation and clotting, so by reducing oxidative stress, cinnamon may indirectly support anticoagulation [72]. Some studies suggest that cinnamon may improve blood flow by promoting vasodilation (widening of blood vessels) and reducing vascular resistance. Improved blood flow can reduce the risk of clot formation [73].

Wound Healing Activity: Cinnamon may promote wound healing due to its antimicrobial properties and ability to enhance collagen production. Cinnamon possesses antimicrobial properties, which can help prevent and manage infections in wounds. It has been shown to have antibacterial, antifungal, and antiviral effects, making it effective against a range of pathogens that could impede wound healing [74]. Cinnamon has anti-inflammatory properties that can help reduce inflammation and swelling at the wound site. Inflammation is a natural part of the healing process, but excessive or prolonged inflammation can delay healing. Cinnamon may help regulate this response [75]. Collagen is a protein crucial for wound healing, as it provides structure and strength to the

healing tissue. Some studies suggest that cinnamon may promote collagen synthesis, aiding in the formation of a strong and flexible scar tissue. Cinnamon is rich in antioxidants that help neutralize free radicals, reduce oxidative stress, and protect cells from damage [76]. This antioxidant activity may support the healing process by promoting a healthy environment for tissue repair. Cinnamon has been investigated for its potential analgesic (pain-relieving) effects. By reducing pain at the wound site, it may improve the overall healing experience. Angiogenesis is the formation of new blood vessels, a critical step in wound healing [77]. Some studies suggest that cinnamon may promote angiogenesis, ensuring an adequate blood supply to the wound for efficient healing. Cinnamon may aid in reducing scar formation by promoting healthy tissue regeneration and minimizing excessive collagen buildup, resulting in a more aesthetically pleasing scar [78].

Antimicrobial and antifungal Activity: Cinnamon has antimicrobial properties that make it effective against various bacteria, fungi, and even some viruses. It can inhibit the growth and spread of harmful microorganisms, contributing to its use in preserving food and preventing infections [79]. Cinnamaldehyde, the main active compound in cinnamon, has significant antibacterial effects. It has been found effective against a wide range of bacteria, including both Gram-positive (e.g., *Staphylococcus aureus*) and Gram-negative (e.g., *Escherichia coli*) bacteria. Cinnamon exhibits antifungal properties against a variety of fungi, including *Candida* species (e.g., *Candida albicans*), which can cause fungal infections in humans [80]. Cinnamaldehyde and other components in cinnamon help inhibit the growth and spread of these fungi. While research on cinnamon's antiviral effects is ongoing, some studies suggest that cinnamon may have antiviral properties against certain viruses, including influenza and herpes simplex virus. Cinnamon's antiviral potential is attributed to its ability to disrupt viral replication [81]. Cinnamon has shown activity against various parasites, including *Giardia lamblia* and *Trichomonas vaginalis*, which are responsible for gastrointestinal and urogenital infections [82]. Cinnamon and its derivatives are used as natural preservatives in food and beverages due to their ability to inhibit the growth of bacteria, fungi, and molds [83]. This property helps extend the shelf life of food products. Cinnamon has been investigated for its ability to disrupt biofilms, which are slimy layers of microorganisms that adhere to surfaces. Biofilms can be difficult to eliminate and are associated with persistent infections. Cinnamon may help combat oral bacteria and fungi, making it useful for oral hygiene. It's often used in toothpaste and mouthwashes for its antimicrobial properties [84].

Gastrointestinal Protective Activity: Cinnamon can aid in gastrointestinal health by reducing gastrointestinal spasms, promoting digestion, and relieving gastrointestinal discomfort. Cinnamon possesses anti-inflammatory properties that can help reduce inflammation in the gastrointestinal tract [85]. Inflammation is associated with various gastrointestinal conditions, and by reducing inflammation, cinnamon may support overall gastrointestinal health. Cinnamon has been investigated for its potential to protect against gastric ulcers. It may help inhibit the formation of gastric ulcers and support the healing of gastric mucosa [86]. Cinnamon may have a soothing effect on the gastrointestinal tract, helping to alleviate symptoms such as bloating, gas, and indigestion. It may aid in promoting digestive comfort. Cinnamon possesses antibacterial properties that may help combat harmful bacteria in the gastrointestinal tract. By reducing bacterial growth, it can support a healthy gut microbiome and prevent gastrointestinal infections [87]. Cinnamon's antifungal properties can help combat fungal overgrowth in the gastrointestinal tract. This is particularly important for maintaining a healthy balance of microorganisms in the gut. Some studies suggest that cinnamon may help regulate digestive enzymes, which are essential for efficient digestion and nutrient absorption [88]. Cinnamon may have potential in protecting against inflammatory bowel diseases such as Crohn's disease and ulcerative colitis. Its anti-inflammatory and antioxidant properties could help alleviate symptoms and reduce inflammation in the digestive tract. Cinnamon may help alleviate intestinal spasms, providing relief from discomfort associated with gastrointestinal conditions [89].

Compound formulations: Unani medicine, a traditional system of medicine, employs a variety of compound formulations to treat various health conditions. These formulations often consist of a combination of natural ingredients, herbs, minerals, and sometimes animal products [90]. The formulations aim to balance the body's humors (blood, phlegm, yellow bile, black bile) and restore equilibrium to achieve optimal health. Darchini is used to make a variety of compound Unani formulations, including Safoof Darchini, Jawarish Zanjabeel, Jawarish Amla Ambari, Jawarish-ood-Sheerin, Jawarish Jalinoos, Jawarish Bisbasa, Arq-e-Chobchini. Majoon Suparipak, Majoon Ushba etc [1,10].

Conclusion: In conclusion, this review article comprehensively explores the diverse and promising therapeutic properties of cinnamon (*Cinnamomum* spp.). The extensive body of research examined in this review underscores the potential health benefits of cinnamon, particularly its antioxidant, anti-inflammatory, antimicrobial, antidiabetic, antihypertensive, neuroprotective, and wound healing properties. Cinnamon's bioactive compounds, such as cinnamaldehyde, cinnamic acid, and polyphenols, contribute to its multifaceted pharmacological effects. The antioxidant activity of cinnamon, attributed to its rich polyphenolic content, plays a pivotal role in neutralizing harmful free radicals and reducing oxidative stress. Its anti-inflammatory properties involve the modulation of inflammatory pathways, inhibition of inflammatory enzymes, and suppression of pro-inflammatory cytokines, highlighting its potential in managing inflammatory disorders. Cinnamon's antimicrobial and antifungal properties make it a compelling candidate for addressing various microbial infections. Studies have demonstrated its efficacy against a spectrum of bacteria, fungi, and viruses. Furthermore, cinnamon exhibits potential antidiabetic effects by improving insulin sensitivity, reducing blood glucose levels, and enhancing pancreatic function, thus holding promise as an adjunctive therapy for diabetes management. Research also suggests a notable antihypertensive effect of cinnamon through vasodilation, improved endothelial function, and inhibition of angiotensin-converting enzyme. Its neuroprotective potential is attributed to its ability to mitigate oxidative stress, reduce inflammation, and inhibit protein aggregation associated with neurodegenerative disorders. Moreover, cinnamon's wound healing properties, including its anti-inflammatory, antimicrobial, and collagen-promoting effects, position it as a potential therapeutic agent for accelerating the wound healing process and minimizing scar formation. While these findings highlight the considerable therapeutic potential of cinnamon, further well-designed clinical trials and mechanistic studies are warranted to validate its efficacy and safety across various health conditions. Additionally, standardization of cinnamon extracts and elucidation of optimal dosages are essential to ensure consistent and reliable outcomes. Cinnamon's incorporation into modern medicine and its potential synergistic effects with conventional therapies merit further exploration, ultimately paving the way for its integration into clinical practice for improved health outcomes.

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