



Review Article

A review of medicine and food homology on traditional Chinese medicine as functional food

Siu Kan Law[†] (✉), Dawn Ching Tung Au[†] (✉)

Department of Food and Health Sciences, The Technological and Higher Education Institute of Hong Kong, Tsing Yi, Hong Kong, China

[†] Siu Kan Law and Dawn Ching Tung Au contributed equally to this work.

Received: 26 September 2024 / Revised: 17 October 2024 / Accepted: 18 October 2024

Abstract: “Medicine and food homology” (MFH) on traditional Chinese medicine (TCM) is a term originated from “*Huang Di Nei Jing-Su Wen*”, and its theory with a long history in China. Some TCMs as functional food, which have been used for “food therapy”, and “medicine”, either acting as food on an empty stomach or as medication for administering to the patient. These are also known as “functional foods” for curing diseases or modulating human body functions. TCM has not just one, but rather multiple principles or concepts for food, which are based on the nutrition of organs (“Yin and Yang” theory), warm and cold food (“Four properties”, and “Five flavors”), season matters, body types, etc. There are different classifications of TCMs, such as seed, flower, and wood containing several active ingredients with a wide range of nutritional and medicinal values. There were nine electronic databases searched including WanFang Data, PubMed, Science Direct, Scopus, Web of Science, Springer Link, SciFinder, and China National Knowledge Infrastructure (CNKI), about the “Medicine”, “Food”, “Homology”, without regard to language constraints. This article discusses the concept of MFH, its research cases, guidelines, regulations, and the pharmaceutical effect of MFH in daily life.

Keywords: medicine; food homology; healthy food; food therapy; traditional Chinese medicine; diseases.

Citation: Law, S. K., Au, D. C. T. A review of medicine and food homology on traditional Chinese medicine as functional food. *Food & Medicine Homology*, 2026, 3: 9420091. <https://doi.org/10.26599/FMH.2026.9420091>

1 Introduction

The concept of “medicine and food homology” (MFH) has a long history in China more than 3,000 years ago, which originated from “*Huang Di Nei Jing-Su Wen*” belonging to the principles of diet therapy in ancient Chinese medicine^[1]. This was a classic traditional resource book, which stated the guidelines of a balanced and complete diet according to traditional Chinese medicine (TCM) theory.

Food therapy is regarding the nutrition of organs, as well as the nourishment of a body and mind^[2]. This emphasizes that herbal medicine and food are of the same origin, which plays a significant role in human health care and its endurance, most importantly for the future therapeutic development to prevent and cure diseases^[3].

The functional design of TCM can as a therapy that is not entirely the same as TCM herbalism. It is safe, tasty, and suitable for long-term consumption in our daily diet. The main function of food therapy is to meet the nutritional needs of the human body for “multi-component-multi-target” properties to modulate its immune system in various human organs through pharmacological function^[4].

Based on the TCM theory, the principle of “Yin and Yang” from Chinese philosophy distinguishes food with “Four properties” and “Five flavors” for different “Body types”. Each part of TCMs, such as seed, flower, and wood contains several active ingredients

with a wide range of nutritional and medicinal values^[5]. These classifications provide an important idea for holism, diet suggestions based on syndrome differentiation, an idea that the spleen-stomach is the “root” of post-heaven, and the homology of medicine and food^[6].

Nowadays, medicine and food are complementary, there is no strict boundary between them. It is a remarkable feature of TCM to combine the two to maintain body health^[7]. However, the recognition and important value of food medicine is not clearly defined. Most people cannot be found on the official website and government affairs platform, which makes it difficult for all walks of life to grasp the relevant regulations for the “catalogue of substances that are traditionally food and Chinese medicinal materials”.

Thus, the Department of Food Safety Standards, Monitoring, and Evaluation of the National Health and Medical Commission from China issued a notice of “*Regulations on the Administration of the Catalog of Substances that Are Traditionally Both Food and Chinese Medicinal Materials*”, which clarified the dynamic adjustment and management regulations of homologous substances in medicine and food, start from November 15, 2021^[8].

2 Medicine and Food Homology

MFH materials are a treasure house of functional factors for

current functional foods, which enhance or regulate the body's immune system in various human organs through pharmacological function, therefore, innovative ideas for the development of MFH resources in current functional foods design are studied, and discussed for a long period, particularly for people or patients taking Chinese medicinal diet^[9]. Its functional food design of TCM is according to the principle of "Yin and Yang", "Four properties", "Five flavors", and "Body type".

2.1 Yin and Yang

Yin and Yang contribute to the body's homeostasis and maintenance. Foods are viewed not only as essential for survival but also as ensuring one's health by a balanced intake of different foods assigned^[10]. It provides internal vital energy (Qi) because different foods have varying quantities of Yin and Yang, but avoid too much, leading to the incidence of serious metabolic imbalances, which become poisonous^[11]. Hence, TCM theory emphasizes utilizing particular foods and herbs in medicinal doses to alleviate imbalances in Yin and Yang.

2.2 Four properties

"Warm", "Hot", "Cold", and "Cool" are the four properties of foods classified by TCM theory. Each property corresponds to one or more specific functions that depend on the effect of the human body's direct responses. "Warm", or "Hot" foods raise the body's inner heat, improve circulation and nourish the energy of the body; while "Cold", and "Cool" foods calm the blood, clear toxins, and reduce heat. "Warm", and "Hot", "Cold", and "Cool" foods with conversely characteristics that balance and regulate the body's function to keep healthy^[12].

2.3 Five flavors

"Pungent", "Sweet", "Sour", "Bitter", and "Salty" are the five flavors of foods divided by TCM theory^[13]. These five flavors relate to several human organs, such as "pungent" for the lung and large intestine, which regulates the "Qi", invigorates energy circulation, loosens stagnation, disperses, opens pores, frees the surface of exogenous disease factors, and produces perspiration; "sweet" for spleen and stomach with a warming, strengthening, harmonizing, relaxing, and moistening effect on the body; "sour" for liver and gallbladder with an astringent effect, gathers and preserves fluids; "bitter" for heart and small intestine with a drying, hardening, and downward-bearing effect; "salty" for kidney and bladder, which cools, moistens, produces a downward bearing, softens, and loosens^[14]. Similar to the four properties of foods, a major target is the maintenance and balance body's homeostasis.

2.4 Body types

Nine constitutions are classified under TCM theory, including Neutral (Balance), Qi_Deficient, Yang_Deficient, Yin_Deficient, Phlegm_Dampness, Blood_Stasis, Damp_Heart, and Inherited Special types^[15]. Foods are influenced by one's internal metabolism and susceptibility to external pathogenic factors, manifesting individual health state, hence different body types or constitutions may take the corresponding four properties, and five flavor foods to maintain a healthy daily lifestyle^[16].

3 Research cases

Nowadays, there is still much study or investigation about the MFH for TCM. Several TCMs act as functional foods for curing

diseases or modulating human body functions. The trend of using MFH for TCM become more common in daily life, especially in the 21st century, because the functional food design is based on the central idea of "natural", not "artificial" products. A list is summarized of the representative research cases mainly within these ten years of the MFH for TCM (Table 1). This is related to the above TCM principles. Research topics 2, 5, 9, 12, and 15 are examples of "Yin and Yang"; 3, 7, 8, and 10 are examples of "Four properties"; 11, and 13 are examples of "Five flavors"; 1, 4, 6, and 14 are examples of "Body type".

4 Guidelines and regulations of TCM as MFH

What are the Guidelines and Regulations on TCM as MFH? Despite many previous research cases for MFH on TCM, some guidelines and regulations are not clear, or misunderstood. These are not standardized. Recently, the Department of Food Safety Standards, Monitoring, and Evaluation of the National Health and Medical Commission from China updated the contents of MFH according to Substances in the Pharmacopoeia of the People's Republic of China. The requirements for TCM as MFH: 1) Traditional eating habits; 2) State in the "Chinese Pharmacopoeia"; 3) Satisfactory for the food safety assessment; and 4) Compliance with the provisions of relevant laws and regulations on the protection of Chinese herbal medicine resources, wild animals and plants, as well as ecological protection. Besides, the guidelines and regulations can be changed if scientific evidence in food safety risk monitoring, supervision, and management indicates the existence of food safety problems^[8].

5 Pharmaceutical Effect of TCM as MFH

Based on the Department of Food Safety Standards, Monitoring, and Evaluation of the National Health and Medical Commission from China, 102 of TCM as MFH is classified, and acts as a functional food in the prevention and treatment of some health conditions^[35]. These range from everyday foods to more exotic herbs and ingredients for food therapy, which have a variety of pharmaceutical functions, such as anti-inflammatory^[36], anti-bacterial or anti-microbial^[37], and anticancer^[38] properties for combating diseases and medical care^[39]. Most of MFHs are affected by human secondary metabolisms, including food absorption, and elimination^[40]. This is also corresponding to the "food-drug/medicine" interactions that simultaneously can alter the body's ability to utilize a particular food or drug or cause serious side effects^[41]. Table 2 summarizes the source, regulatory requirements, pharmaceutical effect, and its current food design and usage of TCM as MFH. This is attributed to the Five Elements of TCM, such as wood (liver), fire (heart), water (kidney), metal (lung), and earth (pancreas). They are closely related, prosper, restrain, and balance each other focusing on the specific bodily system and pair of internal organs. The coordination of various systems promotes and inhibits the corresponding organs to maintain homeostasis. Meanwhile, mutual aggression and mutual aggression under pathological conditions are used to explain and predict pathological changes and complications.

6 Discussion

Functional foods play a role in physiological actions and deserve attention for their optimal use in maintaining health^[441]. Growing evidence has linked the consumption of functional foods or food ingredients with health claims^[442]. Most functional foods

Table 1 Research topics and consequences of the MFH for TCM

No.	Research topics	Consequences	Reference
1	Investigate the balancing herbal medicine and functional food for prevention and treatment of cardiometabolic diseases through modulating gut microbiota	A balance between herbal medicine and functional food rich in fiber, polyphenols, and polysaccharides plays a vital role in modulating gut microbiota through short-chain fatty acids, bile acids, lipopolysaccharides, and trimethylamine (TMA)-N-oxide signaling	[17]
2	Study the functional soft candy of TCM	TCMs are used as supplement vitamins to enhance immunity, assist in lowering blood sugar, blood lipid, and blood pressure, relax the bowel, reduce weight, and fight against oxidation	[18]
3	Study the interaction between homologous functional food <i>Astragali Radix</i> and intestinal flora	<i>Astragali Radix</i> is involved in the absorption, metabolism, transformation, and other steps of these active ingredients in the body, which improves <i>Astragali Radix</i> and intestinal flora effectiveness and bioavailability	[19]
4	Study the health benefits of the active ingredients and whole food components of natural plants through regulating the flora	The regulatory effect of natural plants for medicine and food mainly depends on their whole food components, such as polysaccharides, polyphenols, and flavonoids, which are effective for flora regulation	[20]
5	Investigate the natural ingredients from medicine food homology as chemopreventive reagents against type 2 diabetes mellitus (T2DM) by modulating gut microbiota homeostasis	The use of saponins, polysaccharides, flavonoids, terpenoids, and alkaloids from TCMs can modulate the homeostasis of gut microbiota, thereby ameliorating the development of T2DM. The results provided useful data to support further investigation of the functional basis and application of medicine food homology (MFH) and functional food herbs (FF) to treat T2DM by maintaining intestinal homeostasis	[21]
6	Study the systems pharmacology to reveal multi-scale mechanisms of TCM for gastric cancer	<i>Pinellia ternata</i> (Thunb.) Breit, <i>Rheum palmatum</i> L., <i>Gentiana scabra</i> Bunge, <i>Radix Aucklandiae</i> , and <i>Citrus aurantium</i> L. inhibit the development of gastric cancer through two aspects, such as apoptosis, and inflammation from a multi-scale perspective	[22]
7	Investigate the effects and underlying mechanisms of medicine and food homologous flowers on the prevention and treatment of related diseases	<i>Chrysanthemum morifolium</i> , <i>Lonicera japonica</i> , <i>Crocus sativus</i> , and <i>Lonicera macranthoides</i> contain flavonoids, organic acids, terpenoids, and other active ingredients, which have a variety of medicinal values, including anti-inflammatory, anti-tumor, and antioxidant properties for some diseases	[23]
8	Antiosteoporosis studies of 20 medicine food homology plants containing quercetin, rutin, and kaempferol: TCM characteristics, <i>in vivo</i> and <i>in vitro</i> activities, potential mechanisms, and food functions	20 MFH plants are classified as condiments, vegetables, fruit, tea, and related products, beverage, etc., which are used as daily food supplements for the prevention and treatment of osteoporosis	[24]
9	Study the molecular mechanisms of anti-aging TCM with “homology of medicine and food”: under the influence of oxidative stress	The MFH for TCMs relieves the aging of the body and cells under oxidative stress through several pathways, such as sirtuins and Keap1-Nrf2/ARE signaling pathways for life extension, prevention, and treatment of age-related diseases	[25]
10	Study the flavonoid corylin exhibits lifespan extension properties in mouse	Corylin replicative lifespan in yeast by targeting the protein coding gene (<i>gtr1</i>) protein, which ameliorates cellular RNA senescence and promotes longevity	[26]
11	Feasibility study on the use of “Qi-tonifying medicine compound” as an anti-fatigue functional food ingredient based on network pharmacology and molecular docking	The active ingredients and potential molecular mechanisms of four herbal medicines, including <i>Eucommia ulmoides</i> Oliver Bark, <i>Eucommia ulmoides</i> Oliver male flower, <i>Panax notoginseng</i> , and <i>Syzygium aromaticum</i> are identified in a fatigue treatment for future research on the application of herbal medicines in the functional food industry	[27]
12	Gut microbiota: a magical multifunctional target regulated by medicine food homology species	MFH maintains the homeostasis of the intestinal microenvironment and human health by affecting the population structure, metabolism, and function of gut microbiota that is involved in the bioconversion of the active ingredients and influences their physiological and pharmacological properties	[28]
13	Polygonati Rhizoma with the homology of medicine and food: a review of ethnopharmacology, botany, phytochemistry, pharmacology and applications	Polygonati Rhizoma has a wide range of pharmacological activities, such as immune regulation, blood glucose regulation, lipid-lowering, antioxidant, anti-tumor, antibacterial, etc. It has been widely used in medicine, food, cosmetics, gardens, and other fields	[29]
14	Effect of “maccog” TCM tea on improving glucolipid metabolism and gut microbiota in patients with T2DM in community	Administration of “maccog” TCM tea for 12 weeks slightly improved glucolipid metabolism and significantly increased the abundance of beneficial gut microbiota in community patients with T2DM	[30]
15	Therapeutic mechanisms of the medicine and food homology formula Xiao-Ke-Yin on glucolipid metabolic dysfunction revealed by transcriptomics, metabolomics and microbiomics in mice	Xiao-Ke-Yin is a promising “medicine food homology” formula for ameliorating glucolipid metabolism and reveals the therapeutic effects on amino acid metabolism for modulation of the dysbiosis of the gut microbiota and metabolites	[31]

are natural, especially in using TCM. Functional food has medicinal and nutritional properties, and the effects must be more robust than alone. The selection of functional food is according to symptoms and signs, for example, ginger and Chinese yam are used for spleen deficiency to invigorate its function. It focuses on making medicines or dietary supplements to remedy the problems caused by poor nutrition in America and many European countries, but our concept prefers to optimize the diet directly

because it is less of a side effect and the basic needs for everyone. There are some seasonal uses of food therapy. Spring dietary therapy is nourishing Qi, soothing the liver, and regulating the spleen; summer dietary therapy is clearing the heart, reducing internal heat, and replenishing nutrients; autumn dietary is nourishing the lungs and protecting the spleen and stomach; winter dietary therapy is nourishing Yin and kidney, as well as protecting Yang and essence. However, changes in people's

Table 2 The source, regulatory requirements, pharmaceutical effect, and its current food design and usage of TCM as MFH

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
1	Dingxiang	Clove (<i>Caryophylli Flos</i>)			Warm middle-medium and lower adverse reactions invigorate the function of a kidney with yang. Use for the deficiency of the spleen and stomach, hiccups and vomiting, lack of appetite, vomiting, diarrhea, cold pain in trusted subordinates, and impotence due to kidney deficiency ^[42]	Anti-inflammatory: Inhibit prostaglandin synthesis and reduce painful symptoms^[43] Anti-bacteria: Increase the bacteria membrane permeability, such as <i>Escherichia coli</i>, <i>Staphylococcus aureus</i>, and <i>Pseudomonas aeruginosa</i>, and dissolve its membrane causing cell death^[44] Anticancer: Generate the reactive oxygen species causing mitochondrial permeability transition, and decrease the level of anti-apoptotic protein B-cell lymphoma 2 (Bcl-2), leading to triple-negative breast cancer cell deaths^[45]	Use to spice up curries, season meats, enrich sauces, and flavor spiced baked goods ^[46] (2.5 mg/(kg·day))
2	Bajiaohuixiang	Chinese star anise (<i>Anisi Stellati Fructus</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Warms Yang and expel cold, regulate Qi, and relieves pain. Use for cold colic abdominal pain, kidney deficiency lumbago, stomach cold vomiting, and epigastric cold pain ^[42]	Anti-inflammatory: Reduce the serum levels of interleukin-1 beta (IL-1β) and tumor necrosis factor alpha (TNF-α), and analgesic on intestinal smooth muscles^[47] Anti-bacteria: Disrupt the bacteria membrane integrity, and inhibit the cellular respiratory processes against two Gram-positive bacteria, <i>S. aureus</i>, and <i>Listeria monocytogenes</i>, and two Gram-negative bacteria, <i>E. coli</i> and <i>Salmonella Arizona</i>^[48] Anticancer: Inhibit MCF-7 breast cancer cells through cell cycle arrest to reduce cell proliferation, and apoptosis induction^[49]	Use for Chinese red cooking, and making dark soy sauce for beef and chicken dishes, also as a jam in sweetmeats and confectionery for flavoring ^[50] (0.5–1 g)
3	Daodou	Sword jackbean seed (<i>Canavaliae Semen</i>)			Warm the middle, lower the breath, and stop cough. Deficient of cold hiccups, and vomiting ^[42]	Anti-inflammatory: Reduce the production of NO, decreases mRNA and protein expression of inflammatory mediate inducible nitric oxide synthase (iNOS) and Cyclooxygenase-2 (COX-2), as well as inhibit the phosphorylation of nuclear factor kappa-light-chain-enhancer of activated B cells (NF-κB)^[51] Anti-bacteria: As a natural antimicrobial agent for preventing food poisoning caused by <i>Vibrio vulnificus</i>^[52] Anticancer: Inhibit cell growth and induce apoptosis as well as a solid tumor for DLA, and A549 lung cancer cell lines^[53]	Use for cooking vegetables, and the ripe seeds can be eaten after cooking ^[54] (9–15 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
4	Xiaohuixiang	Fennel fruit (<i>Foeniculi Fructus</i>)			Dispel cold and relieve pain, regulate Qi, and harmonize the stomach. Use for cold colic abdominal pain, testicular prolapse, dysmenorrhea, cold pain in the lower abdomen, distended pain in the abdomen, vomiting, and diarrhea due to lack of food. Salt cumin warm the kidney, dispel cold and relieve pain. For cold colic abdominal pain, testicular deviation, and abdominal pain due to menstrual cold ^[42]	Anti-inflammatory: Utilizes N-formyl-methionyl-leucyl-phenylalanine (fMLF)/cytochalasin B (CB)-induced superoxide anion generation and elastase release by human neutrophils^[55] Anti-bacteria: Disrupts the bacteria membrane integrity, such as <i>E. coli</i>, and <i>S. aureus</i> due to the leakage of electrolytes, causing cell death^[56] Anticancer: Inhibits the expression of human epidermal growth factor receptor 2 (HER2) in the tumor tissue, and decreases the level of protein expression of heat shock protein (HSP) 70 and 90 leading to the suppression of cancer cells^[57]	Use fennel bulbs for making salads or flavoring for soups, broths, baked goods, and fish dishes ^[58] (5–7 g)
5	Xiaoji	Common thistle (<i>Cirsii Herba</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Cool blood for hemostasis, dispel blood stasis, detoxify and eliminate carbuncle. For epistaxis, hematemesis, hematuria, stranguria with blood, hematochezia, metrorrhagia, traumatic hemorrhage, carbuncle sore tumefactive virus ^[42]	Anti-inflammatory: Induces cytoprotection and involves suppression of cellular metabolism as well as activation of stress pathways, followed temporally by progressive down-regulation of mTOR and NF-κB signaling^[59] Anti-bacteria: Alters the permeability of the bacteria membrane, such as <i>E. coli</i>, and <i>S. aureus</i>, and interferes with the bacterial synthetic processes by enzyme inhibition^[60] Anticancer: Regulates various hallmarks of cancers, including tumor cell growth, apoptosis, metastasis, angiogenesis, and autophagy within the tumor microenvironment, such as inducing cancer cell apoptosis by increasing the cellular population in the sub-G0/G1 phase^[61]	Use for making cold salad, or cooking in porridge ^[62] (9 g)
6	Shanyao	Common yam rhizome (<i>Dioscoreae Rhizoma</i>)			Invigorate the spleen and nourish the stomach, promote body fluid and benefit the lungs, and invigorate the essence of kidney deficiency. Use for deficiency of the spleen with little food, long-term tonic, dyspnea, and cough due to lung deficiency, spermatorrhea due to kidney deficiency, leukorrhea, frequent urination, deficiency-heat, and quenching thirst. Fried yam with bran nourishes the spleen and stomach. Use for insufficiency of the spleen, lack of food, loose stools, and excessive leucorrhea ^[42]	Anti-inflammatory: Inhibits the production of TNF-α and IL-1β as well as down-regulating the expression of cyclooxygenase-2 (COX-2) and inducible nitric oxide synthase (iNOS) in IL-1β and TNF-α signaling pathway^[63] Anti-bacteria: Inhibit bacterial growth through the lysis of protein coagulation, and suppresses the wall synthesis cell^[64] Anti-cancer: Disintegrates lipid membranes and causes cell lysis, creating an interfering variable, such as down-regulated differentially expressed genes reflecting losses in the cell division cycle, cyclins, cyclin-dependent kinases, centromere proteins, kinesin family members, and polo-like kinases in triple-negative breast cancer cells^[65]	May be eaten with tomato stews, for making a sauce with traditional palm oil, and pounded into the moldable dough soup ^[66] (9.8–37.7 mg body weight)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
7	Shanzha	Chinese hawthorn fruit (<i>Crataegi Fructus</i>)			Dispel food and invigorate the stomach, promote Qi, dispel blood stasis, transform turbidity, and reduce fat. Use for the stagnation of meat food, epigastric fullness, diarrhea, abdominal pain, amenorrhea due to blood stasis, postpartum stasis, tingly pain in trusted subordinates, chest pain and heart pain, hernia pain, hyperlipidemia. Jiao Hawthorn enhances digestion and guides stagnation. Use for the stagnation of meat, diarrhea, and dysentery ^[42]	Anti-inflammatory: Suppress the expression of inflammatory cytokines, such as IL-1β, TNF-α, and IL-6, which may be regulated by the NF-κB^[67] Anti-bacteria: Strong inhibitory effect on <i>S. aureus</i> and <i>Klebsiella pneumoniae</i>, and the ethanol extract of a medlar and hawthorn compound has a better antibacterial effect than the water extract^[68] Anticancer: The polysaccharides extracted from Hawthorn inhibit the proliferation of HCT116 cells significantly, induce cell cycle arrest in the S and G2/M phases, increase the rate of apoptosis, also down-regulate the AKT pathway by decreasing phosphorous-AKT, and induce the mitogen-activated protein kinase (MAPK) pathway by increasing phosphorous-p38^[69]	Use as a drink for cleaning the gastrointestinal, and can make a sauce for cooking pork, or prawns ^[70] (25 mg/kg body weight)
8	Machixian	Shaggy purslane (<i>Portulaca oleracea</i> L)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Clear-Heart and toxic substances remove cool blood for hemostasis and stop dysentery. Use for toxic heat and bloody dysentery, carbuncle and furuncle, eczema, erysipelas, snake bites, blood in the stool, hemorrhoids, and metrorrhagia ^[42]	Anti-inflammatory: Significantly diminish the secretion of IL-6, TNF-α, NO, and PGE2 as well as mRNA COX-2 and iNOS^[71] Anti-bacteria: Induce <i>S. aureus</i> death by apoptosis-like pathway, which enters the cytoplasm through the membrane pores^[72] Anticancer: Inhibit the growth of tumors in animal models and increase animal immunity by enhancing the amount of CD4⁺ T lymphocytes, white blood cell numbers, and the ratio of CD4⁺/CD8⁺ in the peripheral blood of transplantable sarcoma 180 mice^[73]	Use for cooking, and making a green salad ^[74] (9–15 g)
9	Wushaoshe	Black soake (<i>Zaocys</i>)			Dispel wind, dredge collaterals, and relieve spasms. Use for rheumatic obstinate numbness, numbness and spasms, apoplexy, hemiplegia, convulsions, tetanus, leprosy, and scabies ^[42]	Anti-inflammatory: Suppress the activity of IL-1β and TNF-α production by synoviocytes-PP cells coculture system in rats with adjuvant arthritis^[75] Anti-bacteria: Lys 49 and Asp 49-type from <i>Zaocys</i> with bactericidal activity in <i>S. aureus</i>^[76] Anticancer: Exhibit a significant antitumor activity against Ehrlich Ascites Carcinoma cells and detrimental toxicity on the liver of the treated animals^[77]	Use for making candy, and adding to wushaoshe, oysters ^[78] (250 mg)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
10	Wumei	Smoked plum (<i>Mume Fructus</i>)			Astringe the lungs, astringe the intestines, promote body fluid, and relieve roundworm. Use for chronic cough due to lung deficiency, chronic diarrhea and dysentery, deficiency-heat and thirst, ascariis, vomiting, and abdominal pain ^[42]	Anti-inflammatory: Block the proinflammatory molecules in lipopolysaccharide-stimulated RAW 264.7 cells, and reduce the expression of inflammatory cytokines such as COX-2 and IL-4 in mice ^[79] Anti-bacteria: Strong inhibition effect on human influenza A virus and suppressive effects on <i>Helicobacter pylori</i> -induced glandular stomach lesions in Mongolian gerbils ^[80] Anticancer: Inhibit the proliferation and induce apoptotic death from both solid and hematological tumors, such as liver cancers ^[81]	Use for preparing plum sauce, plum juice, and plum wine, which can be consumed as snacks, condiments, or food additives ^[82] (1.5 g)
11	Mugua	Common flowering quince fruit (<i>Chaenomeles Fructus</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Relax muscles and activate collaterals and stomach dampness. Use for arthralgia from dampness spasm, soreness and pain in the waist and knee joints, vomiting and diarrhea caused by heat-dampness, muscle spasm and pain, and beriberi edema ^[42]	Anti-inflammatory: Reduce IL-1 β -induced MMP3/13 and ADAMTS-5 production at the mRNA and protein levels, enhance col2a and aggrecan accumulation and chondrocyte proliferation, also inhibit NF- κ B activation, nuclear translocation induced by IL-1 β , reactive oxygen species (ROS) production, and ERK phosphorylation, for rat articular chondrocytes ^[83] Anti-bacteria: Ethyl acetate and <i>n</i> -butyl alcohol fractions of mugua have exhibited strong antibacterial activities on <i>S. aureus</i> , <i>E. coli</i> , and <i>Bacillus subtilis</i> ^[84] Anti-cancer: Oleanolic and ursolic acids have inhibitory effects on estrogen receptor-negative breast cancer, osteosarcoma cells, and HuH7 human hepatocellular carcinoma cells, which induce apoptosis in the cancer cells ^[85]	Use for making some soups, such as chicken feet soup, snow fungus sweet soup, and black-eyed peas soup ^[86] (35 mg/kg)
12	Huomaren	Huomaren (<i>Cannabis Fructus</i>)			Laxative. Use for blood deficiency and body fluid loss, intestinal dryness, and constipation ^[42]	Anti-inflammatory: Suppress the production and the mRNA levels of pro-inflammatory mediators such as IL-6 and TNF- α in a concentration-dependent manner in LPS-stimulated BV2 microglia cells ^[87] Anti-bacteria: Up-regulate the ratio of D-galactose-induced mice intestinal bacteria structure, and improve the intestinal microecology ^[88] Anti-cancer: Suppress the proliferation, migration, and invasion of cancer cells, as well as tumor angiogenesis, depending on the effects of terpenes and flavonoids, present in cannabis fructus ^[89]	Use for making hemp seed oil, or milk, and also as herbal tea ^[90] (130 mg or 1.86 mg/kg body weight)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
13	Daidaihua	Seville orange flower (<i>Citrus aurantium</i> L. var. <i>amara</i> Engl)			Promote Qi circulation, eliminate indigestion, and resolve phlegm. Use for chest and abdomen pain, indigestion, phlegm retention, and anal prolapse ^[42]	Anti-inflammatory: Significant increase in IL-6, TNF- α , and NF- κ B translocation from the nucleus to the cytoplasm, and trifluorothymidine (TFT) inhibits the transcriptional activity of NF- κ B in an induced rat to prevent inflammation ^[91] Anti-bacteria: A less inhibition of the growth of <i>B. cereus</i> , <i>S. flexneri</i> , <i>K. pneumoniae</i> , and <i>Colletotrichum capsici</i> , but more sensitivity to <i>E. coli</i> ^[92] Anti-cancer: The flavonoids induce cell cycle arrest and apoptosis on A549 lung cancer cells through the regulation of cell cycle arrest and apoptosis-related proteins ^[93]	Use for flavoring and acidifying agent of food ^[94] (4–6 g)
14	Yuzhu	Fragrant solomonseal rhizome (<i>Polygonati Odorati Rhizoma</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Nourish Yin and moisten dryness, promote body fluid, and quench thirst. Use for lung and stomach yin injury, dry-heat cough, dry throat and thirst, internal heat, and quench one's thirst ^[42]	Anti-inflammatory: Reduce the level of inflammatory mediators, IL-6, and TNF- α in the serum for ear swelling ^[95] Anti-bacterial: Inhibit the growth of <i>E. coli</i> , <i>B. subtilis</i> , and <i>S. aureus</i> , with minimum inhibitory concentrations of 1.23, 0.98, and 1.31 mg/mL ^[96] Anti-cancer: Increase the mRNA levels of PPAR- γ and - α , as well as their downstream target genes in mice livers, adipose tissues, and HepG2 cells ^[97]	Use for making soup, such as yuzhu salsa ginseng snow fungus apple soup ^[98] (18 g)
15	Gancao	Liquorice root (<i>Glycyrrhizae Radix et Rhizoma</i>)			Invigorate the spleen and replenish Qi, clear away heat and detoxification, eliminate phlegm and relieve cough, relieve spasms and relieve pain, and harmonize various medicines. Use for the weakness of the spleen and stomach, lassitude and weakness, palpitation and shortness of breath, cough with copious phlegm, epigastric abdomen, extremity convulsion acute pain, carbuncle sore tumefactive virus, alleviates drug toxicity, strong ^[42]	Anti-inflammatory: Regulation of ERK/NF- κ B/miR-155 signaling and suppression of iNOS expression in LPS/interferon gamma (IFN- γ) stimulated RAW264.7 macrophages without cytotoxicity ^[99] Anti-bacteria: Inhibit the growth of <i>E. coli</i> by the interaction of LTB-GM1 ^[100] Anti-cancer: Reduce tumor mass of breast cancer cell MDA-MB-231 xenografts by suppressing the expression of iNOS, formation of 3-nitrotyrosine, and inactivation of protumorigenic JAK2/STAT3 signaling pathway ^[101]	Use for flavoring in candy, beverages, and tobacco products ^[102] (6–9 g)
16	Baizhi	Taiwan angelica root (<i>Angelicae Dahuricae Radix</i>)			Dispel the exterior and dispel cold, expel wind and relieve pain, dredge nasal orifices, dry dampness, and stopping belt reduce swelling and evacuate pus. Use for cold and headache, brow bone pain, nasal congestion, runny nose, nasal congestion, nasal sinusitis, toothache, leukorrhea, sore swelling, and pain ^[42]	Anti-inflammatory: Inhibit the expression of iNOS and NO production for treating murine macrophage RAW 264.7 cells, and suppress the activating phosphorylation of ERK1/2 to relieve inflammatory pain ^[103] Anti-bacteria: Inhibit multidrug-resistant and methicillin-resistant strains of <i>S. aureus</i> with minimum inhibitory concentrations from 8 μ g/mL to 32 μ g/mL ^[104] Anti-cancer: Inhibit the growth, migration, invasion, and colony formation in murine melanoma B16F10 cells, which stimulates cell apoptosis via reducing the activity of MMP-2 and MMP-9 ^[105]	Use for making teas or soups and drinks such as Baizhu slice, and Baizhu Bohe liquor ^[106] (3–15 g/day)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
17	Baiguo	Ginkgo seed (<i>Ginkgo Semen</i>)			Astringe the lung to calm asthma, stop the belt, and reduce urination. Use for dyspnea and cough due to excessive phlegm, white turbid leukorrhea, enuresis, and frequent urination ^[42]	Anti-inflammatory: Inhibit <i>TNF-α</i> , <i>IL-6</i> , <i>PGE2</i> , and cyclooxygenase 2 mRNA levels for LPS-induced RAW 264.7 macrophages ^[107] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , <i>Bacillus cereus</i> , and <i>B. subtilis</i> , but not against <i>E. coli</i> , with a minimum inhibitory concentration of 7.5×10^{-3} g/mL ^[108] Anti-cancer: Significantly inhibit the proliferation and vitality of two cancer cell lines, HCT116 and A2058, whereas no such effect was observed for the non-tumor cell line McCoy-Plovdiv ^[109]	Use for ingredients in congee, soups, dinner dishes, and desserts ^[110] (60–240 mg/day)
18	Baibiandou	White hyacinth bean (<i>Lablab Semen Album</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Invigorate the spleen and remove dampness, harmonize the middle, and relieve summer heat. Use for the weakness of the spleen and stomach, loss of appetite, loose stool, excessive leukorrhea, vomiting, and diarrhea due to heat dampness, chest tightness, and abdominal distension. Stir-fried white lentils invigorate the spleen and eliminate dampness. Use for spleen deficiency diarrhea, and excessive leukorrhea ^[42]	Anti-inflammatory: Down-regulate NF-κB and STAT3 in A549 cells to prevent particulate matter-induced inflammation ^[111] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , <i>Staphylococcus epidermidis</i> , <i>P. aeruginosa</i> , and <i>E. coli</i> . The methanolic extract is more active than the ethanolic extract ^[112] Anti-cancer: Baibiandou is one of the ingredients for Jia Wei Si Jun Zi Tang, which inhibits the cell proliferation and induction of hepatocellular carcinoma by activating the ERK pathway ^[113]	Use for ingredients in dishes such as Roasted Lablab Beans or Hritthik Avare ^[114] (10–30 g/day)
19	Bian Bian Dou Hua	Flower of hyacinth dolichos (<i>Dolichos lablab</i> L)			Relieve summer heat and remove dampness, and invigorate the spleen. Indicates summer heat and dampness, fever, diarrhea, dysentery, red and white vaginal discharge, bruises, and swelling ^[42]	Anti-inflammatory: Regulate the levels of inflammatory mediators such as IL-18, IL-1β, IL-8, iNOS, TNF-α, caspase-1, NOXs as well as MMPs accompanied with NF-κB p50 activation ^[115] Anti-bacteria: Inhibit the <i>E. coli</i> , <i>Lactobacillus</i> , <i>Proteus vulgaris</i> , <i>S. aureus</i> , <i>Saccharomyces cerevisiae</i> , with concentrations of 1 mg/mL ^[116] Anti-cancer: Inhibit the migration of A549 cells <i>in vitro</i> as it is a potent T-cell mitogen breaking the IL-2 shutdown and eliciting an anti-tumor response ^[117]	Use for making wine and as pods, seeds, or vegetable foods ^[118] (3–9 g/day)
20	Longyanrou	Dried longan pulp (<i>Longan Arillus</i>)			Replenish the heart and spleen, nourish the blood, and calm the nerves. Use for insufficient Qi and blood, palpitation, forgetfulness, insomnia, blood deficiency, and chlorosis ^[42]	Anti-inflammatory: Significantly increase basal prostaglandin E ₂ (PGE ₂) production and tend to elevate LPS-stimulated PGE ₂ production in RAW 264.7 macrophages ^[119] Anti-bacteria: The ethyl acetate crude extracts with good activity against the growth of <i>Sarcina lutea</i> , <i>Vibrio mimicus</i> , <i>Salmonella typhi</i> , <i>E. coli</i> , and <i>S. aureus</i> ^[120] Anti-cancer: Polysaccharide from longan pulp has a positive inhibitory effect on A549, HeLa, and HepG2 cell proliferation because of the immunomodulatory behavior of (1→6)-α-D-glucan but had a negative effect against breast cancer cells ^[121]	Use for sweetening Chinese soups and Chinese desserts ^[122] (4 g/kg)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
21	Juemingzi	Sickle senna seed (<i>Cassiae Semen</i>)			Clear heat and improve eyesight, moisten the intestines and laxative. Use for conjunctival congestion, astringent pain, embarrassment, excessive tears, headache, dizziness, dark eyes, and constipation ^[42]	Anti-inflammatory: An increase in TNF-α and IL-6 levels in high-fat diet (HFD)-fed mice liver homogenates, and the total aglycones, rubrofusarin-6-β-gentiobioside, aurantio-obtusin administration alleviated these inflammatory responses^[123] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> and <i>E. coli</i> with minimum inhibitory concentrations of 2–64 $\mu\text{g/mL}$, and 128 $\mu\text{g/mL}$^[124] Anti-cancer: Inhibit inducible nitric oxide synthase-catalyzed nitric oxide production in alveolar macrophages via interrupting c-Jun N-terminal kinase/IκB kinase/NF-κB pathways, also inhibit IL-6 production in IL-1β-treated A549 lung epithelial cells^[125]	Use for herbal tea drinking, and the ground seeds are used as a substitute for coffee ^[126] (9–15 g/day)
22	Baihe	Lily bulb (<i>Lilii Bulbus</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Nourish Yin and the lungs, clear the heart, and tranquilize the nerves. Use for dry cough due to Yin deficiency, hemoptysis due to overwork, restlessness, palpitation due to deficiency, insomnia, dreaminess, and trance ^[42]	Anti-inflammatory: Downregulate the iNOS and COX-2 via suppression of NF-κB activation and nuclear translocation as well as blocking of ERK and Jun N-terminal kinase (JNK) signaling in LPS-stimulated Raw 264.7 cells^[127] Anti-bacteria: Inhibit the growth of Gram-positive bacteria, <i>S. aureus</i>, <i>Bacillus subtilis</i>, and Gram-negative bacteria, <i>E. coli</i>, <i>Salmonella</i>, and the effect on Gram-positive bacteria was stronger than that on Gram-negative bacteria^[128] Anti-cancer: The polysaccharides of lily inhibit the growth of H22 mouse hepatoma, increase the weight of immune organs of tumor-bearing mice, and significantly elevate the serum hemolysis level, such as TNF-α and IL-2 of tumor-bearing mice^[129]	Use as a food additive in soups, and starchy vegetables are commonly used in high-end Kyoto cuisine and Osechi Ryori ^[130] (9–30 g/day)
23	Roudoukou	Nutmeg (<i>Myristicae Semen</i>)			Warm middle-JIA and promote Qi, astringent intestines for relieving diarrhea. Use for the deficiency of the spleen and stomach, as well as cold, chronic diarrhea, abdominal distension, and pain, vomiting due to lack of food ^[42]	Anti-inflammatory: Inhibit the level of COX-2, and the mRNA expression, as well as substance P and NK-1, to alleviate the chronic inflammation pain^[131] Anti-bacteria: Inhibit the growth of two Gram-positive bacteria, <i>B. subtilis</i>, and <i>S. aureus</i>, and two Gram-negative bacteria, <i>E. coli</i>, and <i>P. aeruginosa</i>, but the ethanol and acetone extracts exhibited antibacterial activity against gram-positive bacterial species only^[132] Anti-cancer: Inhibit the cell proliferation and induce apoptosis in Huh-7 and HCCLM3 cells by suppressing the ability of cell migration and invasion, also increase the expression of E-cadherin and decrease the expression of N-cadherin, thereby inhibiting EMT through decreasing the phosphorylated (p)-mTOR and p-AKT expression at the protein level^[133]	Use for cooking in many desserts, including pumpkin pie, custards, and egg nog ^[134] (60 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
24	Rougui	Cassia bark (<i>Cinnamomi Cortex</i>)			Replenish fire and support Yang, draw fire back to the source, dispel cold and relieve pain, and warm the meridians. Use for impotence and cold uterus, cold pain in the waist and knees, shortness of breath due to deficiency of the kidney, rising of deficiency of Yang, dizziness and red eyes, cold pain in trusted subordinates, vomiting and diarrhea due to deficiency and cold, abdominal pain due to cold colic, dysmenorrhea, and amenorrhea ^[42]	Anti-inflammatory: Down-regulation of the pro-inflammatory NF-κB pathway and inhibition of the overproduction of chemokines, such as IL-8, as well as the COX-2 protein levels in a PGE2 pro-inflammatory mediators reduction ^[135] Anti-bacteria: Inhibit the growth of <i>K. pneumonia</i> , <i>Bacillus megaterium</i> , <i>Pseudomonas aeruginosa</i> , <i>S. aureus</i> , <i>E. coli</i> , <i>Enterobacter cloacae</i> , <i>Corynebacterium xerosis</i> , and <i>Streptococcus faecalis</i> with minimum inhibitory concentrations of 30 μL ^[136] Anti-cancer: Inhibit the tumor cell proliferation <i>in vitro</i> and induce active cell death of tumor cells by up-regulating pro-apoptotic molecules, also inhibit NF-κB and AP1 activity for their target genes such as Bcl-2, Bcl-xL, and survivin in mouse melanoma model ^[137]	Use for flavoring curry in the Indian subcontinent, such as savory chicken and lamb dishes in the Middle East, as well as chocolate and yams in Mexico; baked goods like cinnamon rolls and cookies, or with apples and pears in hearty pies, crumbles and cobblers in West ^[138] (1–6 g)
25	Yuganzi	Emblic leaf/flower fruit (<i>Phyllanthi Fructus</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Clear heat and cool blood, promote digestion and invigorate the stomach, promote body fluid, and relieve cough. Use for blood heat and blood stasis, indigestion, abdominal distension, cough, sore throat, and dry mouth ^[42]	Anti-inflammatory: Inhibit the production of pro-inflammatory cytokines, including IL-6, TNF-α, and MCP-1 for suppressing the histopathological changes in colitis of an induced mouse model ^[139] Anti-bacteria: Inhibit the growth of Gram-positive bacteria, such as <i>Bacillus cereus</i> , <i>B. subtilis</i> , <i>S. aureus</i> , <i>S. typhi</i> , <i>Salmonella paratyphi</i> , <i>P. aeruginosa</i> , and <i>Shigella boydii</i> , also inhibit the Gram-negative bacteria, such as <i>E. cloacae</i> , <i>E. coli</i> , and <i>K. pneumonia</i> with minimum inhibitory concentrations of (10.257 ± 0.770) μg/mL ^[140] Anti-cancer: Induce cell apoptosis and inhibit the migration, as well as invasion of human lung squamous carcinoma cells by decreasing matrix metalloproteinase (MMP) expression through regulation of the MAPK pathway, which down-regulated the expression of phosphorous-ERK1/2, MMP-2, and MMP-9, up-regulated the expression of phosphorous-JNK ^[141]	Use for making fruit juice, beverages, and fermented fruit wine ^[142] (50 mg)
26	Foshou	Finger citron fruit (<i>Citri Sarcodactylis Fructus</i>)			Soothe the liver and regulate Qi, harmonize the stomach, and relieve pain, dry dampness and resolve phlegm. For stagnation of liver and stomach Qi, distending pain in the chest and hypochondriac, fullness in the epigastric cavity, lack of appetite, vomiting, and cough with excessive phlegm ^[42]	Anti-inflammatory: Reduce the levels of TNF-α, IL-2, and IL-6, indicating their anti-inflammatory effects against ethanol-induced gastric injury ^[143] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , <i>E. cloacae</i> , <i>Proteus mirabilis</i> , <i>Streptococcus aureus</i> , <i>P. aeruginosa</i> , <i>K. pneumoniae</i> , and <i>B. cereus</i> with 2.5 μg/mL ^[144] Anti-cancer: Rich in vitamin C, and act as antioxidants, counter damage caused by free radicals, prevent oxidative damage of cells and tissues, fight infections, and reduce the risk of cancer ^[145]	Use for shredding zest in baked goods, salad dressings, beverages, marinades, and other dishes ^[146] (0.5–1.5 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
27	Xing Ren	Ansu apricot seed (<i>Armeniaca Semen Amarum</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Lower Qi, relieve cough and relieve asthma, moisten intestines, and laxative. Use for cough and asthma, chest full of phlegm, intestinal dryness, and constipation ^[42]	Anti-inflammatory: Regulate IL-6, src-kinase (Src), MAPK1 epidermal growth factor receptor (EGFR), and vascular endothelial growth factor A (VEGFA) to be involved in the PI3K-Akt signaling pathway, VEGF signaling pathway, and MAPK signaling pathway ^[147]	Use for food flavoring, and making low-fat biscuits, cookies, and cakes ^[150] (3–10 g)
						Anti-bacteria: Inhibit the growth of Gram-positive bacteria, and Gram-negative bacteria with minimum inhibitory concentrations ranging from 250 µg/mL to 4,000 µg/mL, which is no obvious difference in susceptibility ^[148]	
28	Shaji	Chinese seabuckthorn (<i>Hippophae rhamnoides</i> L. subsp. <i>Sinensis</i> Rousi)	Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Invigorate the spleen and eliminate food, relieve cough, eliminate phlegm, promote blood circulation, and dispel blood stasis. Use for insufficiency of the spleen and lack of food, abdominal pain due to indigestion, cough with excessive phlegm, chest obstruction, heartache, blood stasis amenorrhea, tumbling, and bruising ^[42]	Anti-cancer: Stimulate antioxidant defense by increasing antioxidant markers such as superoxide dismutases (SOD), catalase (CAT), and γ-glutamylcysteinyl glycine (GSH), and by decreasing the levels of pro-inflammatory cytokines such as NF-κB, TNF-α, and interleukins in tumor mass, reducing the growth of cancer cells ^[149]	Use for making bread, yogurts, jams, beverages, and teas ^[154] (5–45 g)
						Anti-inflammatory: Inhibit the inflammatory gathering of neutrophils, macrophages, and mature T cells, as well as cellular protrusions' formation ^[151]	
29	Muli	Common oyster shell (<i>Ostreae Concha</i>)			Treat to soothe the nerves, subdue yang and nourish Yin, soften and resolve hard masses. Use for palpitation with fear and insomnia, dizziness and tinnitus, scrofula sputum nucleus, and a lump in the abdomen in the abdomen. Calcined oyster is astringent and astringent, antacid, and pain relieving. Use for spontaneous sweating and night sweats, nocturnal emission and spermatorrhea, metrorrhagia and vaginal discharge, stomach pain, and acid regurgitation ^[42]	Anti-bacteria: Inhibit the growth of <i>B. cereus</i> , <i>Bacillus coagulans</i> , <i>B. subtilis</i> , <i>L. monocytogenes</i> , <i>Yersinia enterocolitica</i> with minimum inhibitory concentrations ranging from 200 µg/mL to 350 µg/mL ^[152]	Use for increasing the shelf life of food products like noodles, tofu, sausages, and fried chicken ^[158] (9–30 g)
						Anti-cancer: Inhibit cell proliferation and induce extrinsic or intrinsic apoptosis pathways in MDA-MB-468 and MCF-7 breast cancer cells, which are activated through high ROS levels in the ERK pathway ^[153]	
						Anti-inflammatory: Block NO production and the expressions of TNF-α, IL-1β, IL-6, NF-κB, iNOS, and COX-2 in LPS stimulated Raw 264.7 cells ^[155]	
						Anti-bacteria: Retard aerobic bacterial growth and suppress <i>E. coli</i> , <i>S. aureus</i> , <i>L. monocytogenes</i> , <i>S. typhimurium</i> , <i>Enterobacter aerogenes</i> , and <i>P. vulgaris</i> ^[156]	
						Anti-cancer: Suppress oral carcinogenesis proliferation and promote differentiation in the oral epithelium by decreasing levels of proliferating cell nuclear antigen and increasing levels of differentiation markers including keratin, involucrin, filaggrin, and loricrin for reducing rates of tumors in the tongue ^[157]	

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
30	Sangye	Mulberry leaf (<i>Mori Folium</i>)			Dispel wind-heat, clear lung and moisten dryness, clear liver and improve eyesight. Use for antipyretic cold, dry cough due to lung heat, dizziness and headache, conjunctival congestion, and blurred vision ^[42]	Anti-inflammatory: Inhibit the MMPs, iNOS, and COX-2 through the attenuation of NF-κB and MAPK pathways in human chondrocytes ^[159] Anti-bacteria: Inhibit the bacterial growth on oral microorganisms, such as <i>F. nucleatum</i> and <i>S. mutans</i> infected THP-1 cells with minimum inhibitory concentrations ranging from 20 mg/mL to 80 mg/mL ^[160] Anti-cancer: Induce cell growth arrest and apoptosis in human colorectal cancer cells, which is activated activating transcription factor 3 (ATF3) expression and down-regulated cyclin D1 level on ROS and glycogen synthase kinase 3 beta (GSK3β) ^[161]	Use for baking Indian bread (paratha), and for making Korean ice cream with agreeable taste ^[162] (30 mg/kg)
31	Qianshi	Gordon euryale seed (<i>Euryales Semen</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Tonify the kidney and strengthen the essence, invigorate the spleen and stop diarrhea, and dehumidify and stop diarrhea. Used for nocturnal emission and spermatorrhea, enuresis and frequent urination, chronic diarrhea due to spleen deficiency, white turbidity, and leukorrhea ^[42]	Anti-inflammatory: Down-regulate the oxidative stress by the ROS accumulation and prevent cellular stress responses such as inflammation, as well as apoptosis by regulating the P38/JUK/ERK signaling pathway ^[163] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , <i>E. coli</i> , and <i>P. aeruginosa</i> with minimum inhibitory concentrations of 64, 128, and 64 mg/L ^[164] Anti-cancer: Inhibit the SGC7901 and HepG2 cell proliferation, arrest SGC7901 cells in the G0/G1 phase, and arrest HepG2 cells in the S phase, which reduces the cell mitochondrial membrane potential and increases the intracellular calcium influx ^[165]	Use for making soup, congee, or sweet soup ^[166] (9–15 g)
32	Huajiao	Bunge pricklyath pericarp (<i>Zanthoxyli Pericarpium</i>)			Warm middle-JIAO to relieve pain, kill parasites and relieve itching. Use for epigastric cold pain, vomiting and diarrhea, worm accumulation abdominal pain; external treatment of eczema, pruritus vulvae ^[42]	Anti-inflammatory: Inhibit nitric oxide production induced by LPS in RAW 264.7 cells at lower concentrations without a significant effect on cell viability ^[167] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , <i>Acinetobacter baumannii</i> , <i>K. pneumonia</i> , <i>Aspergillus fumigates</i> and <i>Candida albicans</i> with minimum inhibitory concentrations ranging from 160 µg/mL to 5,120 µg/mL ^[168] Anti-cancer: Inhibit the A375 cancer cells proliferation, and induce remarkable G1 phase arrest, as well as apoptosis through MAPK signaling pathway ^[169]	Use for food flavoring, Sichuanese hot pot, and cuisines, which is combined with chili pepper, called “mala” ^[170] (3–6 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
33	Chixiaodou	Rice bean (<i>Vignae Semen</i>)			Induce diuresis to reduce swelling, detoxification, and evacuation of pus. Use for edema and fullness, beriberi edema, jaundice, red urine, rheumatism-heat arthralgia, carbuncle sores, intestinal ulcer abdominal pain ^[42]	Anti-inflammatory: Ameliorate neuro-inflammatory reactions in LPS-stimulated microglia BV2 cells through NF- κ B and MAPK inhibitions ^[171] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , <i>E. coli</i> , and typhoid yeast, and the effectiveness can be enhanced by the fermentation through <i>Bacillus amyloliquefaciens</i> ^[172] Anti-cancer: Alleviate H ₂ O ₂ -induced toxicity in HT22 cells via ROS accumulation and apoptosis inhibition by the activation of Nrf-2 ^[173]	Use for making tea, congee, milk, and dessert ^[174] (150 mg)
34	E'jiao	Ass-hide gelatin (<i>Asini Corii Colla</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Enrich blood and nourish Yin, moisten dryness, and stop bleeding. Use for blood deficiency and chlorosis, dizziness and palpitations, muscle flaccidity and weakness, upset and insomnia, internal movement due to deficiency wind, cough due to dryness of the lungs, hemoptysis due to labor cough, hematemesis, and hematuria, hematochezia and metrorrhagia, fetal leakage during pregnancy ^[42]	Anti-inflammatory: Ameliorate LPS-induced pulmonary inflammation via inhibition of NF κ B regulating nucleotide-binding domain, leucine-rich-containing family, pyrin domain-containing-3 (NLRP3) inflammasome and mitochondrial ROS ^[175] Anti-bacteria: Inhibit the growth of <i>S. typhimurium</i> with minimum inhibitory concentrations of 0.78 mg/mL in the small intestines (ileum) of mice ^[176] Anti-cancer: Interact with the EMR, and PI3K-Akt signaling pathway, which regulates cell survival and proliferation for tumor suppression ^[177]	Use for making donkey-hide gelatin, or cake ^[178] (5–10 g)
35	Jineijin	Chicken's gizzard-membrane (<i>Galli Gigerii Endothelium Coreneum</i>)			Invigorate the stomach and eliminate food, astringent essence stop nocturnal emission, and treat stranguria fossils. Use for indigestion, vomiting and diarrhea, infantile malnutrition, enuresis, spermatorrhea, stone stranguria pain, gallbladder distension, and hypochondriac pain ^[42]	Anti-inflammatory: Reduce the level of NO, and the mRNA expression of <i>TNF-α</i> , <i>IL-1β</i> , <i>IL-6</i> , <i>iNOS</i> , and COX-2 in LPS-treated RAW 264.7 cells ^[179] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , and <i>S. aureus</i> because of the trace amounts of pepsin and amylase ^[180] Anti-cancer: Use for extensive-stage small-cell lung cancer, which blocks the transduction of downstream signals and thus inhibits angiogenesis of tumor tissues ^[181]	Use for making tea and sour foods, such as smoked plum, lemon, or vinegar-prepared food ^[182] (6 g)
36	Maiya	Barley (<i>Hordeum vulgare</i> L)			Promote Qi and eliminate indigestion, invigorate the spleen and whet the appetite, return milk, and reduce swelling. Use for indigestion, abdominal distension and pain, spleen deficiency, lack of food, milk stagnation, breast distension, and pain, women's weaning, liver depression and hypochondriac pain, and liver and stomach gas pain. Raw malt strengthens the spleen and stomach, soothes the liver, and promotes Qi. Use for spleen deficiency, lack of food, stagnant milk. Stir-fried malt promotes Qi, eliminates food, and returns milk. Use for indigestion, women weaning. Scorched malt digestion stagnation. Use for indigestion does not disappear, epigastric distention and pain ^[42]	Anti-inflammatory: β -Glucans inhibit the expression of TNF- α -induced vascular cell adhesion molecule, which also increases the viscosity and solubility ability of α -amylase and pancreatic lipase on the short-chain fatty acid and changes in microbiota composition ^[183] Anti-bacteria: Inhibit the growth of <i>B. subtilis</i> , <i>Staphylococcus aureus</i> , <i>Listeria innocua</i> , and <i>E. coli</i> with minimum inhibitory concentrations ranging from 4 μ g/mL to 16 μ g/mL ^[184] Anti-cancer: Inhibit MCF-7, HCT-116, A549, and EMT6/p cancer cells proliferation by the regulation of cytokines, including IFN- γ , IL-2, IL-4, and IL-10, as well as increase the levels of IFN- γ , IL-2, and decrease the levels of IL-4, and IL-10 for anti-cancer activities ^[185]	Use for food additives in bakery, beverages, animal feed, and barley-based health products ^[186] (0.25–0.5 g/kg)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
37	Kunbu	Kelp (<i>Laminariae</i> <i>Thallus</i> <i>Eckloniae</i> <i>Thallus</i>)			Eliminate phlegm, soften hard masses, and dissipate stagnation, promote diuresis to reduce swelling. Use for goiter, scrofula, testicular swelling and pain, and phlegm retention edema ^[42]	Anti-inflammatory: Inhibit the production of NO in LPS-induced RAW 267.4 cells through the regulation of cytokines, such as IL-6 and IL-10 in the rat ear edema model for treating inflammation ^[187] Anti-bacteria: Inhibit the growth of three Gram positive bacteria, <i>S. aureus</i> , <i>Enterococcus faecalis</i> , <i>B. subtilis</i> , and three Gram negative bacteria, <i>Salmonella enterica</i> , <i>P. aeruginosa</i> , <i>Y. enterocolitica</i> with minimum inhibitory concentrations ranging from 3.43 µL/mL to 98.46 µL/mL ^[188] Anti-cancer: Inhibit the cell proliferation of DMBA (dimethylbenz(a)anthracene)-induced rat mammary tumors through apoptosis induction, as well as three human breast cancer cell lines including MCF-7, T-47D, and MDA-MB-231 ^[189]	Use for making foods, such as salad, soup, and juice ^[190] (6–15 g)
38	Zao	Common jujube (<i>Jujubae Fructus</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Invigorate the vital energy, nourish the blood, and soothe the nerves. Use for spleen deficiency, lack of food, fatigue, and loose stools, and women are dirty and irritable ^[42]	Anti-inflammatory: Induce pro-inflammatory cytokines, such as IL-1β and IL-6, and inhibit the production of nitric oxide through the NF-κB pathway, as well as splenocyte proliferation on the inflammatory activated cells ^[191] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , and <i>K. pneumoniae</i> with minimum inhibitory concentrations of 0.06 and 0.1 g/mL respectively ^[192] Anti-cancer: Induce cell apoptosis through the increase in intracellular ROS mitochondrial membrane potential and a differential cell cycle arrest in HepG2 cells ^[193]	Use for food additives and flavoring in soup ^[194] (0.75–3 mg/mL)
39	Luohanguo	Lohanguo siraitia fruit (<i>Siraitiae Fructus</i>)			Clear heat and nourish the lungs, soothe the throat, open the tone, smooth the intestines, and laxative. Use for dry cough due to lung heat, sore throat and aphonia, intestinal dryness, and constipation ^[42]	Anti-inflammatory: Inhibit inflammation induced by LPS in RAW 264.7 cells by down-regulating the expression of key inflammatory genes <i>iNOS</i> , <i>COX-2</i> , and <i>IL-6</i> , and up-regulating some inflammation protective genes such as <i>PARP1</i> , <i>Bcl-2</i> , <i>TRP53</i> , and <i>MAPK9</i> ^[195] Anti-bacteria: Inhibit the growth of <i>P. aeruginosa</i> , <i>S. aureus</i> , <i>C. albicans</i> , and the ethanol extracts with inhibition values of 70.2% against <i>P. aeruginosa</i> , and 50% or less against <i>S. aureus</i> and <i>C. albicans</i> ^[196] Anti-cancer: Inhibit the proliferation of HT29 and Hep-2 cells, which is accompanied by the upregulation of tumor suppressor p53, and downregulation of MMP-9 and phosphorylated ERK 1/2 ^[197]	Use for making herbal tea, and in the preparation of soups and stews ^[198] (10 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
40	Yuliren	Dwarf flowering cherry seed (<i>Pruni Semen</i>)			Moisten the intestines and relieve constipation, lower Qi and diuresis. Use for thirsty intestines, food stagnation and Qi stagnation, abdominal distension, constipation, edema, beriberi, and dysuria ^[42]	Anti-inflammatory: Reduced the transcription of various proinflammatory enzymes, iNOS, COX-2, and cytokines TNF-α, IL-1β, and IL-6 in LPS-stimulated BV2 cells^[199] Anti-bacteria: Inhibit the growth of <i>E. coli</i>, <i>Brucella melitensis</i>, and <i>B. licheniformis</i> with minimum inhibitory concentrations of 0.4 g/mL^[200] Anti-cancer: Modulate the activity of PI3K/AKT/mTOR and ERK1/2/p38-MAPK/JNK signaling pathways, and regulate PLCγ-1 signaling by decreasing PLCγ-1 phosphorylation in the MDA-MB-453 cancer cell model^[201]	Use for making tea, soup, and flavorings liquid food ^[202] (6–12 g)
41	Jinyinhua	Japanese honeysuckle flower bud (<i>Lonicerae Japonicae Flos</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Clear Heat and remove toxic substances, evacuation wind-heat. Use for carbuncle swollen furuncle, sore throat, erysipelas, pyretic toxin bloody dysentery, wind-heat cold, febrile disease heating ^[42]	Anti-inflammatory: Inhibit pro-inflammatory cytokines such as TNF-α, IL-1β, and IL-6, regulate the balance of TH1/TH2, increase cytokines secreted by TH1 cells, or reduce cytokines secreted by TH2 cells^[203] Anti-bacteria: Inhibit the growth of <i>E. coli</i>, <i>Streptococcus haemolyticus</i>, <i>Staphylococcus aureus</i>, <i>S. typhi</i>, <i>K. pneumoniae</i>, <i>S. paratyphi</i>, <i>Vibrio cholerae</i>, <i>Diplococcus intracellularis</i>, <i>Streptococcus pneumoniae</i>, <i>Mycobacterium tuberculosis</i>, and <i>P. aeruginosa</i> with a minimum inhibitory concentration of 0.1 μL/mL^[204] Anti-cancer: Reduce cell viability, induce apoptosis, suppress migration and invasion, as well as restrain STAT3 activation and nuclear localization in A375 cells for melanoma treatment and prevention^[205]	Use for making herbal tea ^[206] (1.25–5 mg/kg)
42	Qingguo	White canarytree fruit (<i>Canarii Fructus</i>)			Clear heat and remove toxic substances, relieve sore throat, and promote body fluid. Use for sore throat, cough with sticky phlegm, dysphoria and thirst, fish and crab poisoning ^[42]	Anti-inflammatory: Reduce the severity of colorectal adenoma by inhibiting myeloid-derived suppressor cells, pro-inflammatory mediators GM-CSF/M-CSF, IL-6, and NF-κB/IL-6/ST pathway^[207] Anti-bacteria: Inhibit the growth of <i>S. aureus</i>, <i>Escherichia coli</i>, and <i>B. subtilis</i>^[208] Anti-cancer: Inhibit the proliferation of HeLa cells through apoptosis by stimulating caspase-3^[209]	Use for reserving fruits, beverages, jams, oil, fruit wine, candied fruit, juices, pickles, olive sugars, and marking herbal tea ^[210] (6–12g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
43	Yuxingcao	Heartleaf houttuynia herb (<i>Houttuyniae Herba</i>)			Clear heat and remove toxic substances, eliminate carbuncle and discharging pus, induce diuresis, and treat stranguria. For pulmonary carbuncle vomiting pus, phlegm-heat wheezing and coughing, dysentery, pyretic stranguria, carbuncle sore tumefactive virus ^[42]	Anti-inflammatory: Suppress the activation of NF- κ B and the expression of MCP-1, as well as reduce the production of TNF- α and PGE2 in a carrageenan-air pouch model of inflammation in mice, which indicates the effect of anti-inflammatory by inhibiting TNF- α and COX-2-PGE2 pathways ^[211] Anti-bacteria: Inhibit the growth of 21 strains <i>Staphylococcus aureus</i> in planktonic culture, and decrease the levels of autolysin atl, sle1, cidA, and lytN transcripts in the SH-treated strain with a minimum inhibitory concentration of 0.38 μ L/mL ^[212] Anti-cancer: Induce the apoptosis through activation of transcription regulators, such as HIF-1A, FOXO3, and MEF2A in liver cancer cells ^[213]	Use for making herbal tea, and in the preparation of medicinal soups ^[214] (15–30 g)
44	Jiang	Fresh ginger (<i>Zingiberis Rhizoma Recens</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Warm the middle and dispel the cold, return the yang to unblock the veins, warm the lungs, and transform the drink. Use for epigastric cold and pain, vomiting and diarrhea, cold extremities and weak pulse, cold drink, and wheezing and coughing ^[42]	Anti-inflammatory: Inhibit the inflammatory response in psoriasis by decreasing NF- κ B through some important mediators and pathways of cell signaling, including p38/MAPK, Bax/Bcl2, Nrf2, TNF- α , p65/NF- κ B, p53, ERK1/2, SAPK/JNK, caspases-3/-9, and ROS/NF- κ B/COX-2 ^[215] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> and <i>E. coli</i> with minimum inhibitory concentrations of 2.0 and 4.0 mg/mL ^[216] Anti-cancer: Induce the apoptosis in prostate cancer by increasing the expression of p53 and Bax, decreasing the expression of Bcl-2, and MMP-9 ^[217]	Use for cooking liquids to flavor soups, and rice, as well as a condiment in Japanese and Indian cuisine ^[218] (3–10 g)
45	Hezi	Japanese raisin tree seed (<i>Hoveniae Dulcis Semen</i>)			Cool and diuretic, quench thirst and irritability, produce body fluid, and detoxify alcohol. Fever, polydipsia, vomiting, fever, drunkenness, diabetes ^[42]	Anti-inflammatory: Reduce the expression of NO and iNOS, which are significantly attenuated secretion of proinflammatory cytokines, including TNF- α , IL-6, and IL-1 β , by suppressing phosphorylation of MAPK and decreasing the activation of AP-1, JAK2/STAT, and NF- κ B in LPS-stimulated RAW 264.7 cells ^[219] Anti-bacteria: Inhibit the growth of <i>E. coli</i> O157:H7, <i>S. Typhimurium</i> , and <i>S. aureus</i> with a minimum inhibitory concentration of 25% ^[220] Anti-cancer: Inhibit the angiogenesis of human umbilical vein endothelial cells through the suppression of VEGFR2 signaling and hypoxia-inducible factor 1-alpha (HIF-1 α) expression ^[221]	Use for making tea and food beverages ^[222] (0.2–0.8 g/day)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
46	Gouqizi	Babury wolfberry fruit (<i>Lycii Fructus</i>)			Nourish the liver and kidney, benefit energy, and improve eyesight. Use for consumptive essence deficiency, soreness of the waist and knees, dizziness and tinnitus, impotence and nocturnal emission, internal heat and thirst, blood deficiency and chlorosis, and blurred vision ^[42]	Anti-inflammatory: Block the activation of NF-κB and expression of NO₂, COX-2, IL-1β, and TNF-α in H₂O₂-stimulated macrophages, which modulates oxidative stress in the paw edema model^[223] Anti-bacteria: Inhibit the growth of Gram-positive bacteria, such as <i>S. aureus</i>, <i>B. subtilis</i>, <i>L. monocytogenes</i>, and Gram-negative bacteria, such as <i>E. coli</i>, and <i>S. typhimurium</i> with minimum inhibitory concentrations ranging from 2.5 mmol/L to 10 mmol/L^[224] Anti-cancer: Inhibit the growth of cancer cells including SMMC-7221, HepG2, HeLa, SGC-7901, and MCF-7 by arresting the cell cycle at the G0/G1 phase, altering mitochondrial function, activating oxidative stress, and regulating the MAPK signaling pathway to induce apoptosis^[225]	Use for adding soups, hot pots, herbal teas, and wines along with other TCM ingredients to make herbal dishes ^[226] (10–30 mg/kg body weight)
47	Zhizi	Common gardenia fruit (<i>Gardeniae Fructus</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Purg fire relieve restlessness, clear heat and promote dampness, cooling blood, and detoxification; external use for reducing swelling and relieving pain. For febrile disease vexation, damp-heat jaundice, stranguria syndrome astringent pain, blood heat and spit at the nose, conjunctival congestion and swelling pain, fire toxin sores; external treatment of sprains and contusions ^[42]	Anti-inflammatory: Inhibit the colonic inflammation by decreasing the production of proinflammatory mediators, such as TNF-α, IL-1, and IL-6, increasing the level of anti-inflammatory cytokine IL-10 and suppressing the phosphorylation of p38 MAPK-related proteins^[227] Anti-bacteria: Inhibit the growth of <i>E. coli</i> and <i>Clostridium perfringens</i> with a minimum inhibitory concentration of 0.05%^[228] Anti-cancer: The phorbol 12-myristate 13-acetate (PMA)-induced MMP-9 and -13, as well as u-plasminogen activator (uPA) expression via suppression of PMA-induced nuclear translocation of NF-κB p65 in human fibrosarcoma cells^[229]	Use for making herbal tea and soup ^[230] (3–12 g)
48	Sharen	Villous amomum fruit (<i>Amomi Fructus</i>)			Dispel dampness and whet the appetite, warm the spleen and stop diarrhea, regulate Qi, and prevent miscarriage. Used for dampness and turbidity resistance, abdominal distension without hunger, spleen and stomach deficiency and cold, vomiting and diarrhea, pregnancy nausea, and fetal movement disturbance ^[42]	Anti-inflammatory: Attenuate nasal inflammation by restoring Th1/Th2 balance and down-regulation of NF-κB phosphorylation in ovalbumin (OVA)-induced allergic rhinitis^[231] Anti-bacteria: Inhibit the growth of <i>B. subtilis</i>, <i>E. coli</i>, <i>Salmonella</i>, <i>P. aeruginosa</i>, <i>K. pneumoniae</i>, <i>S. aureus</i>, <i>Trichophyton rubrum</i>, and <i>T. mentagrophytes</i>^[232] Anti-cancer: Induce the apoptosis of MFC cells through ROS-mediated mitochondrial pathway by increasing the endogenous ROS and mitochondrial membrane potential collapse^[233]	Use for flavoring in daily cooking and herbal tea ^[234] (270 mg/kg)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
49	Pangdahai	Boat-fruited sterculia seed (<i>Sterculiae Lychnophorae Semen</i>)			Clear heat and nourish the lungs, soothe the throat and open the tone, moisten the intestines, and laxative. Use for hoarseness due to lung heat, dry cough without phlegm, dry and sore throat, constipation due to heat accumulation, headache, and red eyes ^[42]	Anti-inflammatory: Inhibit the expression levels of inflammatory cytokines IL-6, IL-1 β , and TNF- α through the PI3K/AKT/NF- κ B signal pathway ^[235] Anti-bacteria: Inhibit the growth of <i>Streptococcus mutans</i> with a minimum inhibitory concentration ranging from 0.04 mg/mL to 0.32 mg/mL ^[236] Anti-cancer: None of the anti-cancer effects have yet been found ^[237]	Use for making soup or beverage tea ^[238] (2–3 pieces)
50	Fuling	Tuckahoe (<i>Poria</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Induce diuresis to eliminate dampness, invigorate the spleen, and calm the mind. Use for edema, oliguria, dizziness, and palpitation due to phlegm and retention, insufficiency of the spleen, lack of food, loose stool and diarrhea, restlessness, palpitation, and insomnia ^[42]	Anti-inflammatory: Regulate the secretion of cytokines IL-1 β , IL-6, TNF- α , and GM-CSF from human peripheral blood monocytes, as well as against phospholipase A2 (PLA2)-induced mouse paw edema ^[239] Anti-bacteria: Inhibit the growth of Gram-negative bacteria, <i>A. baumannii</i> , <i>P. aeruginosa</i> , and Gram-positive bacteria, <i>S. aureus</i> with minimum inhibitory concentrations ranging from 0.01 mg/mL to 1.00 mg/mL ^[240] Anti-cancer: Remit the tumor-induced alteration by enhancing the expression of TJ proteins and decreasing the levels of diamine oxidase (DAO), D-lactate (DLA), and endotoxin via increasing the expression of ERK1/2 and p38 MAPK in breast cancer ^[241]	Use for making herbal tea, or soup ^[242] (3–45 g/day)
51	Taoren	Peach seed (<i>Persicae Semen</i>)			Promote blood circulation and dispel blood stasis, moisten bowel and laxative, relieve cough, and relieve asthma. Use for amenorrhea, dysmenorrhea, abdominal mass in the abdomen, lung abscess and intestinal abscess, injury from falls, dryness of the intestine and constipation, cough, and asthma ^[42]	Anti-inflammatory: Reduce the transcription of iNOS, COX-2, and cytokines TNF- α , IL-1 β , and IL-6 in LPS-stimulated glial cells against inflammation ^[243] Anti-bacteria: None of the anti-bacterial properties have yet been found except for the Ag NPs treated ^[244] Anti-cancer: Inhibit cell proliferation and induce apoptosis in human promyelocytic leukemia by changing nuclear morphology and internucleosomal DNA fragmentation ^[245]	Use for food flavoring and making soup ^[246] (6–10 g)
52	Xiangyuan	Medical citron fruit (<i>Citri Fructus</i>)			Soothe the liver and regulate Qi, relax the middle and reduce phlegm. Use for stagnation of liver and stomach Qi, distending pain in the chest and hypochondriac, fullness in the epigastrium and abdomen, vomiting and gas, and cough with excessive phlegm ^[42]	Anti-inflammatory: Suppress UVB-induced COX-2 expression and PGE2 production, and act as a PPAR-c agonist for preventing skin inflammation ^[247] Anti-bacteria: Inhibit the growth of Gram-positive bacteria, <i>B. subtilis</i> , and Gram-negative bacteria, <i>E. coli</i> with 1.7 and 2.1 cm inhibition zone ^[248] Anti-cancer: Inhibit cell proliferation and induce apoptosis in lung cancer, because of the rich in carotenoid, β -carotene, folate, vitamin C, limonoids, and flavonoids ^[249]	Use for cuisine materials such as salad dressing, sauces, jams, and vinegar as well as whole fresh fruits ^[250] (30.6 mg)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
53	Xiangru	Chinese mosla herb (<i>Moslae Herba</i>)			Sweat relieve the surface, eliminate dampness, and harmonize the body. Use for summer-damp cold, aversion to cold and fever, headache without sweating, abdominal pain, vomiting and diarrhea, edema, dysuria ^[42]	Anti-inflammatory: Regulate the inflammation mechanism through the Tuberculosis, PI3K-Akt, HIF-1, and TNF-α signaling pathways^[251] Anti-bacteria: Inhibit the growth of <i>S. aureus</i>, and <i>E. coli</i> with minimum inhibitory concentrations ranging from 118 $\mu\text{g/mL}$ to 472 $\mu\text{g/mL}$^[252] Anti-cancer: Inhibit cell proliferation and induce apoptosis in lung, and colon cancer, which is less toxicity and side effect^[253]	Use for food flavoring ^[254]
54	Sangshen	Mullberry fruit (<i>Mori Fructus</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Nourishes Yin and blood, promotes fluid production and moistens dryness. Use for liver and kidney Yin deficiency, dizziness and tinnitus, palpitation and insomnia, premature graying of beard and hair, thirsty body fluid wound, internal heat quenching one's thirst, intestinal dryness, and constipation ^[42]	Anti-inflammatory: Inhibit the oxidative stress, ferroptosis, and liver inflammation by activating the Nrf2 signal pathway and provide a significant protective effect against CCl₄-induced liver fibrosis^[255] Anti-bacteria: Inhibit the growth of <i>B. subtilis</i>, and <i>S. aureus</i>, especially strong in <i>E. coli</i>^[256] Anti-cancer: Induce cell death through apoptosis in human MCF-7 breast cancer and colon HCT-15 cancer cells by arresting the cell cycle, changing the essential morphology, and DNA fragmentation^[257]	Use for making wine, fruit juice, tea, jam, or canned foods, but can also be dried and eaten as a snack ^[258] (1 g/kg)
55	Juhong	Pummelo peel (<i>Citrus reticulata Blanco</i>)			Dispel cold, dry dampness sharpens Qi, and eliminate phlegm. Use for cough due to wind-cold, itchy throat with excess phlegm, food accumulation, alcohol, nausea, and nausea ^[42]	Anti-inflammatory: Upregulate the mRNA expression of <i>SOD1</i>, <i>SOD2</i>, γ-glutamylcysteine synthetase (γ-GCS), glutathione peroxidase (<i>GSH-Px</i>), <i>CAT</i>, and inhibitor of nuclear factor kappa B (<i>IκBα</i>) and downregulate the mRNA expression of <i>NF-κB</i>, as well as decreasing the levels of the inflammatory cytokines <i>TNF-α</i>, <i>IFN-γ</i>, <i>IL-1β</i>, and <i>IL-6</i> to suppress inflammation in gastric tissue^[259] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> with minimum inhibitory concentrations ranging from 1.0 mg/mL to 32.0 mg/mL^[260] Anti-cancer: Inhibit the cell proliferation, induce cell apoptosis, block the cell cycle, and change the autophagy for three gastric cancer cell lines, SGC-7901, BGC-823, and human gastric adenocarcinoma cell (AGS)^[261]	Use for making citrus-white tea and flavoring in food ^[262] (200 mg)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
56	Jiegeng	Balloonflower root (<i>Platycodonis Radix</i>)			Disperse lung Qi, sore throat, expectorant, and pus drainage. Use for cough with excessive phlegm, chest tightness and sore throat, lung abscess, and vomiting of pus ^[42]	Anti-inflammatory: Reduce the severity of LPS-triggered lung inflammation in the mouse model through the increase in the expression of transient receptor potential ankyrin 1 trpa1 (TRPA1)^[262] Anti-bacteria: Jie-Geng-Tang inhibits the growth of <i>S. aureus</i> with a minimum inhibitory concentration < 128 µg/mL^[263] Anti-cancer: Inhibit the cell proliferation and induce the apoptosis in both MCF-7 and MDA-MB-231 cell lines, by increasing the protein expression of cleaved poly (ADP-ribose) polymerase and decreasing the mitochondrial membrane potential^[264]	Use for making Chinese food, such as Jiegeng pickles ^[265] (30 g)
57	Yizhi	Sharpleaf galangal fruit (<i>Alpiniae Oxyphyllae Fructus</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Warm the kidney, consolidate essence and reduce urination, warm the spleen, stop diarrhea, and relieve saliva. Use for enuresis due to kidney deficiency, frequent urination, white turbid spermatorrhea, diarrhea due to spleen cold, cold pain in the abdomen, and excessive salivation	Anti-inflammatory: Decrease the expression of NLRP3, NF-κB, and P65 in Alzheimer's disease mice models by inhibiting of NF-κB and NLRP3 signaling pathway^[266] Anti-bacteria: Inhibit the growth of two Gram-positive, <i>S. aureus</i>, <i>B. subtilis</i> bacteria, and one Gram-negative <i>E. coli</i> bacteria with minimum inhibitory concentrations ranging from 156.25–1,250 µg/mL^[267] Anti-cancer: Increase lactate dehydrogenase (LDH) release, induce apoptosis, disrupt mitochondrial membrane potential, and elevate intracellular ROS-mediated signaling pathway in HepG2 cells^[268]	Use for making sobering-up tea ^[269] (3–10 g)
58	Heye	Hindu lotus leaf (<i>Nelumbinis Folium</i>)			Clear summer heat and dispel dampness, raise hair and clear Yang, cooling blood to stop bleeding. Use for summer heat and polydipsia, summer-damp diarrhea, diarrhea due to spleen deficiency, vomiting of blood heat, metrorrhagia, and metrorrhagia. The lotus leaf charcoal absorbs astringency, removes blood stasis, and stops bleeding, as well as hemorrhage and postpartum halo ^[42]	Anti-inflammatory: Inhibit NF-κB-mediated inflammatory responses through the expression of pro-inflammatory mediators, such as iNOS, TNF-α, IL-1β, IL-6, NO, and PGE2, which are ameliorated disease conditions involving chronic inflammation^[270] Anti-bacteria: Inhibit the growth of <i>S. aureus</i>, <i>B. cereus</i>, and <i>L. monocytogenes</i> with (17.77 ± 0.15), (13.10 ± 0.70), and (10.93 ± 0.61) mm inhibition zones^[271] Anti-cancer: Against melanin and tyrosinase generations through the induction of apoptosis in B16 cells^[272]	Use for making Lotus leaf tea ^[273] (9 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
59	Laifuzi	Garden radish seed (<i>Raphani Semen</i>)			Dispel indigestion and remove swelling, lowering Qi, and resolve phlegm. Use for eating stagnation, abdominal distension and pain, constipation, stagnant diarrhea, dyspnea, and cough due to stagnation of phlegm ^[42]	Anti-inflammatory: Inhibit the production of NO and iNOS expression in the LPS-stimulated BV-2 microglial cell line ^[274] Anti-bacteria: None of the anti-bacteria effects have yet been found ^[275] Anti-cancer: Inhibit the cell proliferation and induce the apoptosis for the A549, SK-OV-3, SK-MEL-2, and HCT-15 cell lines ^[276]	Use for food additive ^[277] (2.4 g/(kg·day))
60	Lianzi	Lotus seed (<i>Nelumbinis Semen</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Invigorate the spleen and stop diarrhea, stop the belt, nourish the kidney and astringent essence, nourish the heart, and calm the nerves. For spleen deficiency diarrhea, leukorrhea, nocturnal emission, palpitation, and insomnia ^[42]	Anti-inflammatory: Decrease the production of NO by downregulation of protein and mRNA, as well as attenuate the production of ROS by upregulation of TNF- α , catalase activity, IL-6, and IL-1 β in LPS stimulated RAW 264.7 macrophages ^[278] Anti-bacteria: Inhibit the growth of <i>Clavibacter michiganensis</i> , and <i>Pseudomonas phaseolicola</i> with 24.17–26.00 mm inhibition zones ^[279] Anti-cancer: Induce the anti-cancer effect on the human colon HCT 116 cell line by increasing the number of apoptotic factors and thereby decreasing the protein expression of anti-apoptotic factors ^[280]	Use for food additives, like honey, tea, jam, juice, and cakes ^[281] (240 mg)
61	Gaoliangjiang	Lesser galangal rhizome (<i>Alpiniae Officinarum Rhizoma</i>)			Warm the stomach to stop vomiting, dispel cold, and relieve pain. Use for epigastric cold pain, stomach cold vomiting, belching, and acid regurgitation ^[42]	Anti-inflammatory: Regulate the COX-2 expression through the MAPK activation of the NF- κ B pathways for treating inflammatory diseases ^[282] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , α -Hemolytic streptococcus, β -H. streptococcus, and <i>S. pneumoniae</i> with minimum inhibitory concentrations of (4.47 $\pm$ 0.10) μ g/mL ^[283] Anti-cancer: Reduce the mitochondrial membrane potential, arrest G1 phase, and inhibition the activity of MMP-2 and MMP-9 in melanoma ^[284]	Use for making food additives to remove fishy smell, and herbal tea ^[285] (300 mg)
62	Danzhuye	Common lophatherum herb (<i>Lophatheri Herba</i>)			Clear heat and purge fire, relieve restlessness and quench thirst, induce diuresis, and treat stranguria. Use for pyrexia, polydipsia, short redness and astringent pain in urination, and aphtha of the mouth and tongue ^[42]	Anti-inflammatory: Inhibit the production of nitric oxide and TNF- α in LPS- and interferon- γ -activated J774A.1 macrophage ^[286] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , and <i>E. coli</i> ^[287] Anti-cancer: Suppress the tumor-induced angiogenesis, including migration and tube formation in HUVECs and microvessel sprouting from aortic rings via decreasing the pro-angiogenic factors, such as p38, JNK, and NF- κ B in tumors ^[288]	Use for natural food preservatives ^[289] (5–15 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
63	Dandouchi	Fermented soybean (<i>Sojae Semen Praeparatum</i>)			Relieve the exterior, eliminate annoyance, and disseminate stagnant heat. Use for the common cold, chills and heat headache, irritability, chest tightness, restlessness, and insomnia due to deficiency ^[42]	Anti-inflammatory: Reduce cytokines, IL-1 β , IL-6, and TNF- α release in serum, dose-dependently decrease the protein and mRNA levels of nNOS, CRF, and corticosterone concentrations downstream of the hypothalamic-pituitary-adrenal axis ^[290] None of the anti-bacteria and anti-cancer effects have yet been found.	Use for food flavoring ^[291] (15 g)
64	Juhua	Florists dendranthema (<i>Chrysanthemi Flos</i>)			Disperse wind and clear heat, calm liver, improve eyesight, and detoxify. Use for anemopyretic cold, headache and dizziness, conjunctival congestion and swelling pain, blurred vision, sore carbuncle, and swollen toxin ^[42]	Anti-inflammatory: Inhibit NF- κ B nuclear translocation in RAW 264.7 cells, followed by reduction of TNF- α mRNA expression ^[292] Anti-bacteria: Inhibit the six plant pathogenic bacteria including <i>Xanthomonas oryzae</i> pv. <i>oryzae</i> , <i>Ralstonia solanacearum</i> , <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> , <i>Acidovorax citrulli</i> , <i>Rhizoctonia solani</i> , and <i>Erwinia carotovora</i> with minimum inhibitory concentrations ranging from 0.062,5 mg/mL to 0.125 mg/mL ^[293] Anti-cancer: Induce the cell proliferation of MCF-7 breast cancer cells by up-regulation of tumor suppressor p53, and inhibit the activity of topoisomerases for the synthesis of DNA ^[294]	Use for making medicinal soup ^[295] (10–15 g)
65	Jyujyu	Chicory (<i>Cichorium intybus</i> L)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Clear the liver and gallbladder, invigorate the stomach, and eliminates food, diuresis, and swelling. Use for damp-heat jaundice, stomach pain, lack of food, edema, and oliguria ^[42]	Anti-inflammatory: Diminish the serum TNF- α , IL-6, and IL-1 levels, and attenuated the malonylaldehyde levels which increase the activities of CAT and GPx in paw tissue ^[296] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , and <i>E. coli</i> with minimum inhibitory concentrations ranging from 0.05 mg/mL to 1.00 mg/mL ^[297] Anti-cancer: Induce the cell proliferation and apoptotic effect of STL of human HepG2 liver cancer cell line through metastasis suppression ^[298]	Use for coffee substitutes and food additives ^[299] (1.5 g)
66	HuangJiezi	Indian mustard seed (<i>Sinapis Semen</i>)			Warm the lungs, dispel phlegm, invigorate Qi, dispel stagnation, dredge collaterals, and relieve pain. Use for cold phlegm dyspnea and cough, distending pain in the chest and hypochondrium, phlegm stagnation in the meridian, joint numbness, pain, phlegm-damp flow, gangrene, and swollen toxin ^[42]	Anti-inflammatory: Reduce the level of NF- κ B p65, plasma malondialdehyde, iNOS, interferon- α , IL-17, and IL-22 at mRNA for increasing percentage of CD4 ⁺ T cells and the ratio of CD4 ⁺ /CD8 ⁺ T cells for treating inflammation of psoriasis ^[300] Anti-bacteria: Inhibit the growth of <i>E. coli</i> O157:H7 and <i>S. aureus</i> with minimum inhibitory concentrations ranging from 1.23 mg/mL to 1.83 mg/mL ^[301] Anti-cancer: Induce cell apoptosis of human A549 and H1299 non-small cell lung cancer cell lines, by downregulating the expression of MMP2 and MMP9 through simultaneous and differential regulation of proliferation, apoptosis, DNA damage, cell cycle, migration, and invasion ^[302]	Use for cooking and food flavoring ^[303] (10–20 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
67	Huangjing	Siberia landpick (<i>Polygonatum sibiricum</i> Delarb ex Redoute)			Tonify Qi and nourish Yin, invigorate the spleen, moisten the lungs, and benefit the kidneys. Use for spleen and stomach Qi deficiency, body fatigue and fatigue, insufficient stomach Yin, dry mouth and lack of food, dry cough due to lung deficiency, labor cough and hemoptysis, insufficient essence and blood, sore waist and knees, premature graying of beard and hair, internal heat and quenching thirst ^[42]	Anti-inflammatory: Inhibit the mRNA expression of inflammatory mediators including <i>iNOS</i>, <i>COX-2</i>, <i>TNF-α</i>, <i>IL-1β</i>, and <i>IL-6</i> in the ear edema of mice^[304] Anti-bacteria: Inhibit the growth of <i>B. megaterium</i>, <i>B. cereus</i> and <i>P. vulgaris</i>, <i>Exserohilum turcicum</i>, <i>Verticillium dahliae</i>, and <i>Botryosphaeria ribis</i> with inhibitory rates ranging from 69.0% to 84.1%^[305] Anti-cancer: Inhibit the growth of HeLa, Hep G2, human endometrial cancer cells, and human MCF-7 breast cancer cells through the P13K/Akt/mTOR signaling pathway^[306]	Use for making food flavoring in meat and snacks ^[307] (15 g)
68	Zisu	Cultivated purple perilla leaf (<i>Perillae Folium</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Relieve exterior and dispel cold, promote qi, and harmonize the stomach. Use for wind-cold cold, cough and nausea, vomiting of pregnancy, fish, and crab poisoning ^[42]	Anti-inflammatory: Decrease NO production, PGE2 secretion, and mRNA expressions of pro-inflammatory genes such as <i>IL-6</i>, <i>TNF-α</i>, and <i>iNOS</i>, via the inhibition of MAPK as well as NF-κB signaling in LPS stimulated RAW 264.7^[308] Anti-bacteria: Suppress the growth of <i>S. aureus</i>, <i>S. pneumoniae</i>, <i>Shigella</i>, <i>Salmonella</i>, and <i>E. coli</i> with inhibition zones from 17 mm to 22 mm^[309] Anti-cancer: Inhibit the growth of H1299, HCT116 cancer cells, and metastasis but induce apoptosis in different types of cancer cells, modulating different cell signaling pathways, such as the PI3K signaling pathway^[310]	Use for flavoring soups, stews, and roasts ^[311] (20 mg/day)
69	Zisuzi	Cultivated purple perilla fruit (<i>Perillae Fructus</i>)			Lower Qi and resolve phlegm, relieve cough and asthma, laxative and laxative. Use for phlegm stagnation and Qi reversal, cough and asthma, intestinal dryness, and constipation ^[42]	Anti-inflammatory: Reduce the level of IgE, IL-4, IL-5, and IL-13 in the lung and bronchoalveolar fluid, as well as the mRNA expression of Th2 cytokines, and pathological changes in lung tissue^[312] Anti-bacteria: Inhibit the growth of <i>S. aureus</i>, and <i>Porphyromonas gingivalis</i> in the oral with minimum inhibitory concentrations ranging from 100 μg/mL to 1,600 μg/mL^[313] Anti-cancer: Inhibit the growth of MDA-MB-231 and BT549 cancer cells, and increase the apoptosis via inactivation of Yes-associated protein activity^[314]	Similar to cultivated purple perilla leaf (12 g/(kg·day))

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
70	Gegen	Lobed kudzu vine root (<i>Puerariae Lobatae Radix</i>)			Relieve muscle and relieve fever, produce body fluid and quench thirst, relieve rash, promote Yang and relieve diarrhea, dredge meridian and activate collaterals, and relieve alcohol poisoning. For exogenous fever and headache, stiff neck and back pain, thirst, thirst, impervious measles, dysentery, diarrhea, dizziness and headache, apoplexy and hemiplegia, chest pain and heartache, and alcohol poisoning ^[42]	Anti-inflammatory: Inhibit the reduction of colon length in mice through the IL-6, IL-1 β , and TNF- α activities for preventing tissue damage and inflammation ^[315] Anti-bacteria: Suppress the shigella-induced death in mice ^[316] Anti-cancer: Inhibit the invasion and migration activity of SW480 colon cancer cells through the EGFR, JAK2, and SRC pathways ^[317]	Use for making stick-type medicinal concentrated beverages ^[318] (200 mg/day)
71	Hei Zhi Ma	Black sesame (<i>Sesamum indicum</i> L.)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Invigorate liver and kidney, benefit essence and blood, moisten intestines, and dryness. Use for deficiency of essence and blood, dizziness, tinnitus and deafness, premature graying of beard and hair, hair loss after illness, intestinal dryness, and constipation ^[42]	Anti-inflammatory: Regulate the levels of IL-6 and TNF- α for induced arthritis in albino rats ^[319] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , <i>P. gingivalis</i> , <i>Porphyromonas Intermedia</i> , <i>Fusobacterium nucleatum</i> , and <i>Tannerella forsythia</i> with minimum inhibitory concentrations ranging from 3.12 mg/mL to 6.25 mg/mL ^[320] Anti-cancer: Suppress the proliferation of human leukemic cell lines, KBM-5 and K562 through the restriction of COX-2 and cyclin D1 expressions induced by tumor necrosis factor TNF- α pathway ^[321]	Use for making black sesame paste in Chinese desserts and sweet snacks ^[322] (5 g/kg)
72	Heihujiao	Black pepper fruit (<i>Piperis Fructus</i>)			Promote the stomach, digest food, warm the center, disperse cold, and stop the pain; Apply to deficiency cold of spleen and stomach, vomiting, and diarrhea ^[42]	Anti-inflammatory: Suppress oxidative stress and age-related inflammation by inhibiting the MAPK or NF- κ B pathways across the blood-brain barrier ^[323] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , and <i>S. aureus</i> with 36.00–38.00 mm inhibition zones ^[324] Anti-cancer: Ameliorate tumor development and progression for colorectal cancer cell lines, HT29 and LS180 through the NF- κ B, STAT3, JNK, ERK1/2, p38 MAPK, PI3K/AKT, caspase-3, and p53 signaling pathways ^[325]	Use as a tasty seasoning for cooked vegetables, pasta dishes, meat, fish, and poultry ^[326] (200 mg/kg)
73	Huai Hua	Black locust flower (<i>Sophorae Flos</i>)			Cool blood to stop bleeding, clear liver, and purge fire. Use for blood in the stool, hemorrhoids, bloody dysentery, uterine bleeding, vomiting blood, epistaxis, liver heat and conjunctival congestion, headache, and dizziness ^[42]	Anti-inflammatory: Attenuate the receptor activator of nuclear factor kappa-B ligand (RANKL)-mediated induction of NF- κ B through inhibition of I κ B α phosphorylation, and downregulation of NFATc1 for inflammation ^[327] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> with a minimum inhibitory concentration of 0.39 μ L/mL ^[328] Anti-cancer: Attenuate the migration ability of human hepatocellular carcinoma and promote apoptosis, with an increase in G0/G1-phase cells and a decrease in S phase cells ^[329]	Use for making juice beverages ^[330] (10–15 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
74	Pugongying	Mongolian dandelion herb (<i>Taraxaci Herba</i>)			Clear heat and remove toxic substances, reduce swelling and dispel stagnation, induce diuresis, and treat stranguria syndrome. Use for furuncle swelling, mastitis, scrofula, conjunctival congestion, sore throat, lung abscess, intestinal fistula, jaundice due to damp heat, and astringent pain caused by hot stranguria ^[42]	Anti-inflammatory: Inhibit the initial osteoclast differentiation via the NFATc1/c-Fos mechanism for anti-inflammation in osteoporosis ^[331] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , and <i>S. aureus</i> with minimum inhibitory concentrations ranging from 3.125 mg/mL to 25 mg/mL ^[332] Anti-cancer: Induce PCD selectively in >95% of colon cancer cells, irrespective of their p53 status ^[333]	Use for adding flavor to salads, sandwiches, and teas ^[334] (10–15 g)
75	Fengmi	Honey (Mel)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Tonify the middle, moisten dryness, relieve pain, and detoxify. Use for abdominal pain, dry cough due to dryness of the lung, constipation due to dryness of the intestine, and to relieve the poison of aconitum ^[42]	Anti-inflammatory: Suppress the infiltration of leukocytes through downregulating myeloperoxidase and reduce ear edema ^[335] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , <i>P. aeruginosa</i> , <i>E. coli</i> , and <i>P. mirabilis</i> with inhibition zones from 4 mm to 17 mm ^[336] Anti-cancer: Decrease in expression of Ki67-LI cancer cells in rats, and lead to lowering the cancer cell proliferation by arresting cell cycle, and increasing apoptosis ^[337]	Use for fruit salad, clover for tea or coffee drinks, orange blossom for cakes and cookies, or lavender for sauces and salad dressings ^[338] (1–5 mg)
76	Feizi	Grand torreyia (<i>Torreyae Semen</i>)			Kill parasites and eliminate stagnation, moisten the lung and relieve cough, moisten dryness, and laxative. Use for hookworm disease, ascariasis, tapeworm disease, worm accumulation abdominal pain, infantile malnutrition, dryness of lung cough, and constipation ^[42]	Anti-inflammatory: Suppress the production of NO and PGE2 in RAW 264.7 cells stimulated with the TLR4 ligand lipopolysaccharide ^[339] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> with minimum inhibitory concentrations ranging from 3.125 mg/mL to 12.5 mg/mL ^[340] Anti-cancer: Significantly enhance the activities of TNF- α , IL-2, SOD, and GSH-Px and reduced the levels of AST, ALT, MDA, Alb, TGF- β 1, and IL-10 for mice models of liver cancer ^[341]	Use for making herbal tea ^[342] (30–50 g)
77	Suanzaoren	Spine date seed (<i>Ziziphi Spinosae Semen</i>)			Nourish the heart and liver, calm the mind and calm the nerves, suppress sweat, and promote body fluid. Use for insomnia due to deficiency, palpitation and dreaminess, hyperhidrosis due to physical weakness, and thirsty wounds ^[42]	Anti-inflammatory: Reverse LPS induces blood-brain barrier breakdown by activating the FAK-DOCK180-Rac1-WAVE2-Arp3 pathway ^[343] Anti-bacteria: Inhibit the growth of chicken colibacillosis with a minimum inhibitory concentration of 12.5 mg/mL ^[344] Anti-cancer: Significantly prolong the survival in mice with cancer, and inhibit body weight indicating the antitumor effect on Ehrlich's ascites carcinoma ^[345]	Use it for cooking porridge and making tea ^[346] (50 g/kg body weight)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
78	Baimaogen	Lalang grass rhizome (<i>Imperatae Rhizoma</i>)			Cool the blood, stop bleeding, clear heat promotes urination. Use for pyreticosis and diphsis, hematemesis, non-traumatic hemorrhage, dyspnea and coughing due to lung heat, vomiting and hiccups caused by gastric heat, stramgutia, and difficulty in micturition, edema, and jaundice ^[42]	Anti-inflammatory: Inhibit the mRNA and protein expression of p50 and p65 in the liver through the NF-κB pathway ^[347] Anti-bacteria: Inhibit the growth of <i>Klebsiella aerogenes</i> , <i>E. coli</i> , <i>S. aureus</i> , <i>B. subtilis</i> , and <i>E. aerogenes</i> with the inhibition zones of 12.0, 13.0, 13.5, 13.5, and 15.0 mm, respectively ^[348] Anti-cancer: Inhibit the growth of human hepatoma SMMC-7721, HepG2 cell proliferation, and solid tumors in H22 mice, which increase the S period ratio and at the same time reduce the G2/M phase cell proportion, inducing apoptosis ^[349]	Use for making jelly, vinegar, soft and hard beverages, as well as herbal tea ^[350] (15–30 g)
79	Huaimi	Japanese pagodatree flower-bud (<i>Flos Sophorae Immaturus</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Same as (73) Huaihua	Similar to (73) Huaihua	Similar to (73) Huaihua (10–15 g)
80	Lugen	Reed rhizome (<i>Phragmitis Rhizoma</i>)			Clear heat and purge fire, promote body fluid and quench thirst, relieve restlessness, relieve vomiting, diuretic. Use for fever and polydipsia, cough due to lung heat, pulmonary abscess and vomiting of pus, vomiting due to stomach heat, hot stranguria, and astringent pain ^[42]	Anti-inflammatory: Significantly reduce the levels of NO, PGE2, TNF-α, IL-1β, and IL-6 expressed in RAW 246.7 macrophages by inhibiting the NF-κB signaling pathway ^[351] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , <i>B. subtilis</i> , and <i>E. coli</i> with minimum inhibitory concentrations of 100 μg/mL ^[352] Anti-cancer: Induce apoptosis of A549 cells by activating the PI3K/AKT signaling pathway to promote autophagy and the expression of the apoptosis proteins Bax and Caspase-3 ^[353]	Use for grounding into flour or making into gruel ^[354] (100 mg/kg)
81	Fushe	Agkistrodon halys (<i>Agkistrodon</i>)			Expel wind, attack poison. Control leprosy, leprosy, stubborn numbness of the skin, scrofula, and hemorrhoids ^[42]	Anti-inflammatory: Downregulation of NF-κB/COX-2 signaling by activating HO-1/CO in hearts via decreasing TNF-α, IL-6, COX-2, p-NF-κB, and p-ERK1/2 protein expression ^[355] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , <i>E. aerogenes</i> , <i>P. vulgaris</i> , <i>P. mirabilis</i> , <i>P. aeruginosa</i> , and <i>S. aureus</i> with minimum inhibitory concentrations of 120 μmol/L ^[356] Anti-cancer: Inhibit the vasculogenic mimicry formation in triple-negative MDA-MB-231 breast cancer cells <i>in vitro</i> by down-regulating MMP2 production ^[357]	Use for marking wine ^[358] (6 g/day)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
82	Chenpi	Tangerine peel (<i>Citri Reticulatae Pericarpium</i>)			Regulate spleen and stomach qi stagnation, abdominal fullness, vomiting, or chest tightness, anorexia, and loose stools caused by dampness and turbidity ^[42]	Anti-inflammatory: Inhibit LPS-induce proinflammatory NO, TNF- α , IL-1 β , and IL-6 secretion in LPS-activated BV2 microglia cells ^[359] Anti-bacteria: Inhibit the growth of <i>Staphylococcus mutan</i> with a minimum inhibitory concentration ranging from 32 mg/mL to 34.9 mg/mL ^[360] Anti-cancer: Salvestrol from the tangerine peel is converted into a compound by the enzyme P450 CYP1B1, which exists in cancerous cells, and the result is markedly toxic to such cells ^[361]	Use to remove the unpleasant tastes in game meat and the muddy flavors found in some fish and seafood ^[362] (0.5 g/(kg·day))
83	Bohe	Wild mint herb (<i>Menthae Haplocalycis Herba</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Evacuate wind-heat, clear the head, sore throat, and rash, soothe the liver and promote Qi. Use for wind-heat cold, the beginning of wind-temperature, headache, conjunctival congestion, sore throat, aphtha, rubella, measles, chest, and hypochondrium swelling and oppression ^[42]	Anti-inflammatory: Significantly inhibit the IL-1 β and TNF- α secretion from LPS-stimulated porcine alveolar macrophages ^[363] Anti-bacteria: Inhibit the growth of <i>E. coli</i> with minimum inhibitory concentrations ranging from 25 μ g/mL to 200 μ g/mL ^[364] Anti-cancer: Decrease cell viability, vitality, and survival of adrenocortical SW13 cell models via MAPK and PI3k/Akt pathways ^[365]	Use to smash with fava beans and pecorino to top toast, whizz into a mint pesto as a perfect accompaniment to lamb, and toss into a cooling watermelon salad with lime for a summer dessert ^[366] (120 g)
84	Yiyiren	Ma-yuen jobstears seed (<i>Coicis Semen</i>)			Induce diuresis to eliminate dampness, invigorate the spleen and arrest diarrhea, remove numbness, drain pus, detoxification, and dissipate stagnation. For edema, beriberi, dysuria, spleen deficiency diarrhea, arthralgia due to dampness, lung abscess, intestinal abscess, warts, and cancer ^[42]	Anti-inflammatory: Activate the IL-17, MAPK, and NF- κ B signaling pathways to reduce the inflammatory response and oxidative damage in osteoarthritis ^[367] Anti-bacteria: Inhibit the growth of the bacterial pathogens, <i>E. coli</i> , <i>S. aureus</i> , and <i>Salmonella</i> in the structure of gut microbiota ^[368] Anti-cancer: Inhibit the proliferation of the human sarcoma cell lines, such as MES-SA and MES-SA/Dx5, and induce apoptosis by increasing the number of cells in the sub-G1 phase as well as the amount of poly (ADP-ribose) polymerase (PARP) being cleaved ^[369]	Use for stir-frying, glutinous rice stir-frying, salt processing including salt cooking and salt stir-frying, stir-frying with the earth scraped from the wall facing east, and ginger juice stir-frying, etc ^[370] (9–30 g)
85	Xiebai	Longstamen onion bulb (<i>Allii Macrostemonis Bulbus</i>)			Unblock Yang and dispel stagnation, promote Qi, and guide stagnation. Use for chest pain and heartache, fullness, and pain in the epigastrium and abdomen, heavy after diarrhea ^[42]	Anti-inflammatory: Inhibition of the EGFR/ERK1/2/AKT-dependent signaling pathway, which mediates its anti-inflammatory effects in diseases such as asthma ^[371] Anti-bacteria: The anti-bacteria inhibition ability is influenced by temperature and pH, which is the temperature greater than 100 °C, and decreases with the enhancement of acidity or alkalinity ^[372] Anti-cancer: Inhibit the growth of human lung NCI-H460 cancer cells by regulation of EGFR/PI3K/mTOR and RAF/MAPK signaling pathways, as well as inhibition of tumor cell membrane phospholipid synthesis ^[373]	Use for food flavoring and consuming vegetables, as well as making wine ^[374] (5–9 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
86	Fupenzi	Palmleaf raspberry fruit (<i>Rubi Fructus</i>)	Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51) ^[32]	MFH	Tonify the kidney, strengthen the essence and reduce urination, nourish the liver, and improve eyesight. For nocturnal emission and spermatorrhea, enuresis and frequent urination, impotence, premature ejaculation, and dim eyesight ^[42]	Anti-inflammatory: Inhibit the production of NO in LPS-stimulated macrophage RAW264.7 cells ^[375] Anti-bacteria: Inhibit the growth of <i>S. mutan</i> with a minimum inhibitory concentration of less than 1 mg/mL ^[376] Anti-cancer: Induce apoptosis of SGC-7901 gastric cancer cells and HepG2 liver cancer cells by arresting the G0/G1 and S phases in the cell cycle ^[377]	Use for making juice and jam ^[375] (3–9 g)
87	Guanghuo	Wrinkled gianthysop (<i>Agastache rugosa</i> (Fisch. et C. A. Mey.) Kuntze)			Use for treating exogenous heat dampness or dampness at the beginning. Symptoms are fever without sweating, chest tightness, and abdominal fullness, also suitable for people with dampness and heat in the spleen meridian (sweet and greasy mouth, excessive salivation, rancid breath) ^[42]	Anti-inflammatory: Reduce the production of TNF- α , IL-6, and PGE2 in LPS-stimulated RAW 264.7 macrophages ^[378] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , <i>S. aureus</i> , and <i>B. subtilis</i> with minimum inhibitory concentrations ranging from 9.4 μ g/mL to 42 μ g/mL ^[379] Anti-cancer: Inhibit the proliferation of MCF-7 breast cancer cells through inducing apoptotic changes in the cancerous cell ^[380]	Use for sprinkling in salads, decorate cakes, or to add flavor to teas ^[381] (16–31 g)
88	Danggui	Chinese angelica (<i>Angelicae Sinensis Radix</i>)	Announcement on Angelica and other six newly added substances that are traditionally both food and Chinese medicinal materials (No. 8, 2019) ^[33]	Spices and condiments	Enrich and activate blood circulation, regulate menstruation and relieve pain, loosen bowels, and relieve constipation. Use for blood deficiency and yellow complexion, dizziness and palpitations, irregular menstruation, amenorrhea dysmenorrhea, abdominal pain due to deficiency and cold, rheumatism arthralgia, injury from falls, carbuncle sores, intestinal dryness, and constipation. Wine angelica invigorates the blood and stimulates menstrual flow. For amenorrhea dysmenorrhea, rheumatic arthralgia, and injury from falling ^[42]	Anti-inflammatory: Suppress the biosynthesis or release of PGE2 in inflamed tissues induced by carrageenan, as well as significantly decrease the hemolytic activity of complement bypass ^[382] Anti-bacteria: Inhibit the growth of <i>B. subtilis</i> and <i>E. coli</i> , and the inhibitory activity against <i>E. coli</i> is stronger than that of <i>B. subtilis</i> ^[383] Anti-cancer: Induce the REDD1 expression leading to the mTOR signal pathway for the inhibition of gastric cancer cells ^[384]	Use for making herbal tea or wine ^[385] (3–15 g/day)
89	Shannai	Galanga resurrectionlily rhizome (<i>Kaempferiae Rhizoma</i>)			Disinfect the spleen and stomach, dispel food, and relieve pain. Use for fullness of the chest and diaphragm, cold pain in the abdomen, and inability to eat or drink ^[42]	Anti-inflammatory: Inhibit the HMC-1 mast cell-mediated inflammatory response stimulated by LPS through the regulation of IL-6, IL-8, IL-1 β and TNF- α ^[386] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , and <i>S. aureus</i> with minimum inhibitory concentrations ranging from 7.5 μ g/mL to 120 μ g/mL ^[387] Anti-cancer: Induce the apoptosis of MKN-45 cells by arresting the cell cycle at the G0/G1 phase ^[388]	Use for salad flavoring ^[389] (100 mg/kg)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
90	Xihonghua	Saffron crocus style and stigma (<i>Croci Stigma</i>)		Spices and condiments, also called Zanghonghu	Promote blood circulation and remove blood stasis, cool blood and detoxify, relieve stagnation, and calm the nerves. Use for amenorrhea lumps in the abdomen, postpartum stasis, hot toxin hair spots, melancholy, ruffian, palpitation, and madness ^[42]	Anti-inflammatory: Regulate the level of ROS to improve inflammation for atherosclerosis by increasing the iNOS expression, and reducing the HIF-1 α expression ^[390] Anti-bacteria: Inhibit the growth of Gram-positive bacteria, <i>L. monocytogenes</i> and <i>S. aureus</i> , and Gram-negative bacteria, <i>E. coli</i> and <i>S. typhimurium</i> with the inhibition zones of 15.0, 12.0, 9.0, and 7.0 mm, respectively ^[391] Anti-cancer: Decrease MAPK14 expression, inhibit the HGC-27 cell proliferation and migration, as well as its apoptosis, and induce cell cycle arrest ^[392]	Use for food colorant, and additive, as well as making herbal tea ^[393] (20.7 g/kg)
91	Caoguo	Tsaoko amomum fruit (<i>Tsaoko Fructus</i>)	Announcement on Angelica and other six newly added substances that are traditionally both food and Chinese medicinal materials (No. 8, 2019) ^[33]		Dry dampness and warm the middle cut off malaria and eliminate phlegm. Use for cold-damp internal resistance, abdominal distension and pain, fullness and vomiting, malaria chills and fever, and plague fever ^[42]	Anti-inflammatory: Suppress the expression of two pro-inflammatory mediators, iNOS and COX-2 in the LPS-induced inflammatory responses for RAW 264.7 cells ^[394] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , <i>S. typhimurium</i> , <i>P. aeruginosa</i> , and <i>K. pneumonia</i> with minimum inhibitory concentrations ranging from 5 mg/mL to 2 mg/mL ^[395] Anti-cancer: Inhibit the Sphingosine kinases 1 and 2, which induce cell cycle arrest and apoptosis, exerting anticancer effects in HepG-2, SMMC-7721, HeLa, and A549 cells ^[396]	Use for food additives ^[397] (3–6 g)
92	Jianghuang	Common turmeric rhizome (<i>Curcuma Longae Rhizoma</i>)		Spices and condiments	Dispel blood and promote Qi circulation, menstrual flow and relieve pain. Use for stabbing pain in the chest and hypochondrium, chest pain and heart pain, dysmenorrhea, amenorrhea, lump in the abdomen, rheumatism shoulder and arm pain, tumbling, and swelling pain ^[42]	Anti-inflammatory: Significantly inhibit NO production and attenuate the LPS-induced decrease in CB2 receptor mRNA expression for the anti-inflammatory in macrophages ^[398] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , and <i>S. aureus</i> with minimum inhibitory concentrations of 44.4 mg/L ^[399] Anti-cancer: Induce extrinsic and intrinsic apoptosis through altering mitochondrial function via AMPK-dependent and NF- κ B-independent pathways in doxorubicin-resistant MCF-7 breast cancer cells ^[400]	Use for food preservatives and making herbal tea or drink ^[401] (200 mg/day)
93	Bibo	Long pepper fruit (<i>Piperis Longi Fructus</i>)			Warm the middle and dispel cold, lower Qi to relieve pain. Use for epigastric cold pain, vomiting, diarrhea, stagnation of Qi caused by cold condensation, chest obstruction, and heartache, headache, toothache ^[42]	Anti-inflammatory: Induce endothelial cells by various pro-inflammatory cytokines like TNF- α and IL-1, and LPS by the expression of cell adhesion molecules ^[402] Anti-bacteria: Inhibit the growth of <i>B. subtilis</i> with a minimum inhibitory concentration of 9 mg/mL ^[403] Anti-cancer: Inhibit the growth of pancreatic cancer cells and induce apoptosis ^[404]	Use for food additive ^[404] (3–5 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
94	Dangshen	Pilose asiabell root (<i>Codonopsis Radix</i>)			Invigorate the spleen and lungs, nourish blood, and promote body fluid. It is used for deficiency of spleen and lung Qi, fatigue due to lack of food, cough, and shortness of breath, deficiency of Qi and blood, pale complexion, palpitation, shortness of breath, thirsty body fluid wound, internal heat, and quenching thirst ^[42]	Anti-inflammatory: Promote the production of NO, IL-2, and IFN- γ , and upregulate the expression of corresponding mRNA for ear swelling ^[405] Anti-bacteria: Crude polysaccharide with no obvious antibacterial effect, and only against <i>Salmonella</i> ^[406] Anti-cancer: Induce apoptosis in HepG2 cells by upregulating the Bax/Bcl-2 ratio and activating caspase-3 ^[407]	Use for food flavoring and herbal tea ^[408] (9–30 g)
95	Roucongong	Desertliving cistanche herb (<i>Cistanches Herba</i>)	Notice on Carrying out Pilot Work for the Management of 9 Substances such as Dangshen, which are both food and Chinese medicinal materials according to tradition (No. 311, 2019) ^[34]	Spices and condiments	Tonify kidney yang, benefit essence, and blood moisten intestines and laxative. Deficiency of kidney Yang, essence, and blood, impotence, and infertility, weakness of the waist and knees, weakness of muscles and bones, dryness of the intestine, and constipation ^[42]	Anti-inflammatory: Inhibit the release of inflammatory factors such as TNF- α , IL-6, IL-1 β , and MCP-1 in the serum of mice, exerting the hepatoprotective effect by the TLR4/NF- κ B signaling pathway ^[409] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> , <i>B. cereus</i> , <i>E. coli</i> , and <i>K. pneumonia</i> with minimum inhibitory concentrations ranging from 0.182 mg/100 mL to 31.61 mg/100 mL ^[410] Anti-cancer: Significantly reduce the content of intracellular ROS, the percentage of mitochondrial fragmentation, and the protein expression of Beclin-1, increase the number of autophagosomes, and the protein expression of HIF-1 α and BNIP3L to the cancer-induced fatigue ^[411]	Use for herbal tea ^[412] (6–10 g)
96	Tiepishihu	Noble dendrobium stem herb (<i>Dendrobii Caulis</i>)			Tonify stomach and promote body fluid, nourish Yin, and clear heat. Use for febrile disease fluid injury, dry mouth, polydipsia, insufficient stomach Yin, lack of food and retching, persistent asthenic fever after illness, hyperactivity of fire due to Yin deficiency, bone steaming and labor-heat, blurred vision, muscle flaccidity, and body weakness ^[42]	Anti-inflammatory: Reduce the expression of proinflammatory cytokines like TNF- α , IL-1 β , and IL-6, which attenuate the immune-mediated inflammation and maintain the balance of inflammatory cytokines ^[413] Anti-bacteria: Inhibit the growth of Gram-positive and Gram-negative bacteria, with a potency stronger than that of ampicillin sodium ^[414] Anti-cancer: Inhibit the growth of liver HepG2 cells by increasing the ROS level, decreasing mitochondrial membrane potential, and inducing apoptosis with the downregulation of antiapoptotic protein Bcl-2 and upregulation of proapoptotic protein Bax expressions ^[415]	Use for making herbal tea ^[416] (180 mg)
97	Xiyangshen	American ginseng (<i>Panax Quinquefolii Radix</i>)			Tonify Qi and nourish Yin, clear heat and promote fluid production. Use for Qi deficiency and Yin deficiency, asthenia heat, irritability, coughing, dyspnea and bloody phlegm, internal heat and thirst, dry mouth, and throat ^[42]	Anti-inflammatory: Inhibit the endoplasmic reticulum stress-activated NF- κ B pathway and associated inflammatory response in chondrocytes ^[417] Anti-bacteria: Inhibit the growth of <i>S. aureus</i> with a minimum inhibitory concentration of 250 mg/kg ^[418] Anti-cancer: Inhibit colorectal tumor growth through the down-regulation of Wnt/ β -catenin signaling ^[419]	Use as an additive in some energy drinks and ginger candies ^[420] (20–30 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
98	Huangqi	Membranous milkvetch root (<i>Astragali Radix</i>)			Invigorate Qi and promote Yang, strengthen the surface and stop sweating, diuresis, and swelling, promote body fluid and nourish blood, promote stagnation and relieve numbness, relieve toxins and expel pus, astringe sores, and promote granulation. For Qi deficiency and fatigue, lack of appetite, loose stools, subsidence of central Qi, chronic diarrhea and prolapse of the anus, bloody stool and metrorrhagia, surface deficiency and spontaneous sweating, Qi deficiency and edema, internal heat and thirst, blood deficiency and chlorosis, hemiplegia, arthralgia and numbness, carbuncle and gangrene that are difficult to ulcerate, and chronic ulceration not restrained ^[42]	Anti-inflammatory: Attenuate the activity of p38 and Erk1/2 and stimulate MKP-1 in LPS-treated Raw 264.7 cells ^[421] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , and <i>S. aureus</i> with minimum inhibitory concentrations ranging from 0.02 mg/mL to 10.00 mg/mL respectively ^[422] Anti-cancer: Significant reduction in AMPK and Beclin1 expression in human bronchial epithelial cells through p53/AMPK/mTOR signaling pathway ^[423]	Use for making foods, teas, drinks, wines ^[424] (2–7.5 g)
99	Lingzi	Lucid ganoderma (<i>Ganoderma</i>)	Notice on Carrying out Pilot Work for the Management of 9 Substances such as Dangshen, which are both food and Chinese medicinal materials according to tradition (No. 311, 2019) ^[34]	Spices and condiments	Invigorate Qi and calm the nerves, relieve cough, and relieve asthma. Use for restlessness, insomnia and palpitations, cough and asthma due to lung deficiency, shortness of breath due to fatigue, and lack of appetite ^[42]	Anti-inflammatory: Inhibit inflammation in macrophages by significantly attenuating LPS-induced cell polarization as well as releases and mRNA expressions of pro-inflammatory mediators NO, TNF- α , IL-1 β , and IL-6 ^[425] Anti-bacteria: Inhibit the growth of <i>Micrococcus luteus</i> with a minimum inhibitory concentration of 0.75 mg/mL ^[426] Anti-cancer: Down-regulation of cyclin D1 is associated with growth inhibition and cell cycle arrest in human ovarian OVCAR-3 cells ^[427]	Use for making lucid ganoderma tea ^[428] (1.5–9 g/day)
100	Shanjuyu	Common macrocarpium fruit (<i>Corni Fructus</i>)			Tonify the liver and kidney, receive astringency, and solidify. Use for vertigo and tinnitus, soreness of the waist and knees, impotence and nocturnal emission, enuresis, frequent urination, metrorrhagia, profuse sweating and prostration, internal heat, and quenching thirst ^[42]	Anti-inflammatory: Inhibit the production of NO by assessing LPS-stimulated RAW 264.7 cells ^[429] Anti-bacteria: Inhibit the growth of <i>E. coli</i> with a minimum inhibitory concentration of 2 mg/mL ^[430] Anti-cancer: Induce the activation of Bax, cytochrome-c, caspase-3, -8, -9, p53, and p21 causing apoptosis, and suppression of Cdk2, pRb, and E2F1 related to cell arrest in A549 cells ^[431]	Use for making herbal tea ^[432] (20 mg/kg body weight)
101	Tianma	Tall gastrodiae (<i>Gastrodiae Rhizoma</i>)			Expel wind to relieve spasms, calm liver-Yang, dispel wind, and dredge collaterals. Use for convulsions in children, epileptic convulsions, tetanus, headache and dizziness, limb paralysis, numbness of limbs, and rheumatic arthralgia ^[42]	Anti-inflammatory: Inhibition of both COX activity and oxidative stress ^[433] Anti-bacteria: Inhibit the growth of <i>E. coli</i> , <i>P. aeruginosa</i> , and <i>S. aureus</i> with minimum inhibitory concentrations ranging from 1.352 mg/mL to 1.803 mg/mL ^[434] Anti-cancer: Inhibit the metastasis by reverse transcriptase-polymerase chain reaction in B16 cells ^[435]	Use for making soup or porridge with chicken, pigeon, duck, and fish head ^[436] (3–10 g)

(Continued)

No.	Name of TCM in Chinese	Name of TCM in English (Latin)	Statute source	Regulatory requirements	Functions and indications	Pharmaceutical effect and mechanism	Current food design and usage (dosage)
102	Duzhongye	Eucommia ulmoides oliv (<i>Eucommiae Folium</i>)	Notice on Carrying out Pilot Work for the Management of 9 Substances such as Dangshen, which are both food and Chinese medicinal materials according to tradition (No. 311, 2019) ^[34]	Spices and condiments	Invigorate liver and kidney, and strengthen muscles and bones. Use for insufficiency of the liver and kidney, dizziness, soreness of the waist and knees, and flaccidity of muscles and bones ^[42]	Anti-inflammatory: Reduce the secretion of proinflammatory cytokines including TNF- α , IL-8, and IL-1 β by human monocytic cells ^[437] Anti-bacteria: Inhibit the growth of <i>A. baumannii</i> and <i>S. aureus</i> with minimum inhibitory concentrations of 1.0 mg/mL ^[438] Anti-cancer: Induces apoptosis for tumor growth through the mitochondrial pathway, and blocks the cell cycle at the S phase ^[439]	Use for making tea ^[440] (3 g)

lifestyles in diets are more important than making medicines or dietary supplements. Over the past 5,000 histories of Chinese herbal medicines, which achieved the Nobel Prize to a formal endorsement by the World Health Organization as a global healthcare source, how do we make good use of it?

Recently, there was a TCM dietary therapy diet contained 13% lily, 2% *Ganoderma lucidum* polysaccharides, and 85% whole grain cereals (including 30% brown rice, 20% black rice, 20% buckwheat and 15% oats), which was used to lessen hyperglycemia and reduce obesity, as well as increased diabetes-improving microbiota (Coriobacteriaceae, Bacteroidaceae, and Peptostreptococcaceae) by 7–26 times and health-related microbiota (Rikenellaceae, Bifidobacteria, Actinobacteria) by 4–300 times. This may play a positive role in the prevention and treatment of several diseases in the human intestinal system^[443].

Another randomized, placebo-controlled trial investigated the acute and chronic benefits of American Ginseng (Cereboost) on mood and cognition in healthy young adults. The American Ginseng (Cereboost) significantly increased acetate, propionate, and butyrate levels in simulated proximal and distal colon regions, linked with observed increases in *Akkermansia muciniphila* and *Lactobacillus*, which was a possible link to the alteration of gut microbiome and modulation of acetylcholine^[444].

Nowadays, the Chinese functional foods market has grown rapidly, with an estimated value of 200 billion Yuan in 2021. However, several considerations include guidelines, and regulations of TCM as MFH, its potential pharmaceutical effect, as well as their application in daily life for food therapy. The formulations of TCM as MFH are current challenges, even the next milestones, since this is difficult to predict or estimate the pharmaceutical effect on the multiple herbals, which may exist in the herbal-drug interaction relating to pharmacokinetic and pharmacological studies. It is required to conduct and pay attention to a series of safety assessments on human clinical trials, such as dosage, and toxicity to make sure that the corresponding formulations of TCM are safe and suitable for different body types.

7 Conclusion

Up to the present, there are 120 TCMs as MFH announced by

the Department of Food Safety Standards, Monitoring, and Evaluation of the National Health and Medical Commission from China. Functional foods of TCMs have a wide range of applications and become more common in human health care, either for treatment or therapeutic usage. However, much more work need to be done, especially in the safety assessments of human clinical studies on TCM as MFH.

Conflicts of interest

The authors declare that there are no conflicts of interest in this work.

Acknowledgments

This research was funded by Chinese Medicine and Culture Research Center, Research Matching Grant (RMG030a).

References

- [1] Ho, Z. C. Principles of diet therapy in ancient Chinese medicine: 'Huang Di Nei Jing'. *Asia Pacific Journal of Clinical Nutrition*, **1993**, 2: 91–95.
- [2] Ormsby, S. M. Hot and cold theory: evidence in nutrition. *Advances in Experimental Medicine and Biology*, **2021**, 1343: 87–107. https://doi.org/10.1007/978-3-030-80983-6_6
- [3] Puri, V., Nagpal, M., Singh, I., et al. A comprehensive review on nutraceuticals: therapy support and formulation challenges. *Nutrients*, **2022**, 14: 4637. <https://doi.org/10.3390/nu14214637>
- [4] Su, Y., Bai, Q., Tao, H., et al. Prospects for the application of traditional Chinese medicine network pharmacology in food science research. *Journal of the Science of Food and Agriculture*, **2023**, 103: 5183–5200. <https://doi.org/10.1002/jsfa.12541>
- [5] Nestler, G. Traditional Chinese medicine. *The Medical clinics of North America*, **2002**, 86: 63–73. [https://doi.org/10.1016/S0025-7125\(03\)00072-5](https://doi.org/10.1016/S0025-7125(03)00072-5)
- [6] Zhao, X., Tan, X., Shi, H., et al. Nutrition and traditional Chinese medicine (TCM): a system's theoretical perspective. *European Journal of Clinical Nutrition*, **2021**, 75: 267–273. <https://doi.org/10.1038/s41430-020-00737-w>
- [7] Liu, C. X. Understanding “medicine and food homology”, developing utilization in medicine functions. *Chinese Herbal Medicines*, **2018**, 10: 337–338. <https://doi.org/10.1016/j.chmed.2018.10.006>

- [8] Department of Food Safety Standards and Monitoring and Evaluation. Traditional management regulations of the substance catalog which is both food and Chinese medicinal materials. *Guowei Food*, **2021**, 36.
- [9] Hou, Y., Jiang, J. G. Origin and concept of medicine food homology and its application in modern functional foods. *Food & Function Journal*, **2013**, 4: 1727–1741. <https://doi.org/10.1039/c3fo60295h>
- [10] Pang, G., Xie, J., Chen, Q., et al. How functional foods play critical roles in human health? *Food Science and Human Wellness*, **2012**, 1: 26–60. <https://doi.org/10.1016/j.fshw.2012.10.001>
- [11] Huang, K. C. *The Pharmacology of Chinese Herbs*. 2nd edition. Boca Raton, FL: CRC Press; **1999**.
- [12] Shen, L. Discussion on four properties of traditional Chinese medicine (two)-part of the drug are cold (or cool) two-way problem. *Chinese Traditional Patent Medicine*, **1981**, 5: 40–42.
- [13] Tang, D. C. *Science of Chinese Materia Medica*. House of Shanghai University of Traditional Chinese Medicine, Shanghai, China; **2003**.
- [14] Matos, L. C., Machado, J. P., Monteiro, F. J., et al. Understanding traditional Chinese medicine therapeutics: an overview of the basics and clinical applications. *Healthcare (Basel)*, **2021**, 9: 257. <https://doi.org/10.3390/healthcare9030257>
- [15] Wang, J., Li, Y., Ni, C., et al. Cognition research and constitutional classification in Chinese medicine. *The American Journal of Chinese Medicine*, **2011**, 39: 651–660. <https://doi.org/10.1142/S0192415X11009093>
- [16] Wang, Y., Wu, X. Y., Wang, H. H. X., et al. Body constitution and unhealthy lifestyles in a primary care population at high cardiovascular risk: new insights for health management. *International Journal of General Medicine*, **2021**, 14: 6991–7001. <https://doi.org/10.2147/IJGM.S329321>
- [17] Lyu, M., Wang, Y. F., Fan, G. W., et al. Balancing herbal medicine and functional food for prevention and treatment of cardiometabolic diseases through modulating gut microbiota. *Frontiers in Microbiology*, **2017**, 8: 2146. <https://doi.org/10.3389/fmicb.2017.02146>
- [18] Wang, Y. H., Luan, N., Fan, J., et al. Research progress on functional soft candy of traditional Chinese medicine. *Zhongguo Zhong Yao Za Zhi*, **2019**, 44: 5345–5351. <https://doi.org/10.19540/j.cnki.cjcm.20190916.308>
- [19] Tian, Y., Ding, Y. P., Shao, B. P., et al. Interaction between homologous functional food Astragali Radix and intestinal flora. *Zhongguo Zhong Yao Za Zhi*, **2020**, 45: 2486–2492. <https://doi.org/10.19540/j.cnki.cjcm.20200119.401>
- [20] Ma, C. The health benefits of the active ingredients and whole food components of natural plants through regulating the flora. *Sheng Wu Gong Cheng Xue Bao*, **2021**, 37: 3853–3862. <https://doi.org/10.13345/j.cjb.210425>
- [21] Xia, X., Xiao, J. Natural ingredients from medicine food homology as chemopreventive reagents against type 2 diabetes mellitus by modulating gut microbiota homeostasis. *Molecules*, **2021**, 26: 6934. <https://doi.org/10.3390/molecules26226934>
- [22] Zhang, L., Xiao, Y., Yang, R., et al. Systems pharmacology to reveal multi-scale mechanisms of traditional Chinese medicine for gastric cancer. *Scientific Report*, **2021**, 11: 22149. <https://doi.org/10.1038/s41598-021-01535-5>
- [23] Ma, A., Zou, F., Zhang, R., et al. The effects and underlying mechanisms of medicine and food homologous flowers on the prevention and treatment of related diseases. *Journal of Food Biochemistry*, **2022**, 46: e14430. <https://doi.org/10.1111/jfbc.14430>
- [24] Shen, D., Feng, Y., Zhang, X., et al. Antioestoporosis studies of 20 medicine food homology plants containing quercetin, rutin, and kaempferol: TCM characteristics, *in vivo* and *in vitro* activities, potential mechanisms, and food functions. *Evidence-Based Complementary and Alternative Medicine*, **2022**, 2022: 5902293.
- [25] Bai, Y., Han, L., Wang, B., et al. Molecular mechanisms of anti-aging traditional Chinese medicine with “homology of medicine and food”: under the influence of oxidative stress. *Authorea*, **2022**. (Pre-print)
- [26] Wang, T. H., Tseng, W. C., Leu, Y. L., et al. The flavonoid corylin exhibits lifespan extension properties in mouse. *Natural Communication*, **2022**, 13: 1238. <https://doi.org/10.1038/s41467-022-28908-2>
- [27] Wu, Y., Ma, Y., Cao, J., et al. Feasibility study on the use of “Qi-tonifying medicine compound” as an anti-fatigue functional food ingredient based on network pharmacology and molecular docking. *Frontiers in Nutrition*, **2023**, 10: 1131972. <https://doi.org/10.3389/fnut.2023.1131972>
- [28] Zuo, W. F., Pang, Q., Yao, L. P., et al. Gut microbiota: a magical multifunctional target regulated by medicine food homology species. *Journal of Advanced Research*, **2023**, 52: 151–170. <https://doi.org/10.1016/j.jare.2023.05.011>
- [29] Zhao, L., Xu, C., Zhou, W., et al. Polygonati Rhizoma with the homology of medicine and food: a review of ethnopharmacology, botany, phytochemistry, pharmacology and applications. *Journal of Ethnopharmacology*, **2023**, 309: 116296. <https://doi.org/10.1016/j.jep.2023.116296>
- [30] Hu, B., Yin, T., Zhang, J., et al. Effect of “maccog” TCM tea on improving glucolipid metabolism and gut microbiota in patients with type 2 diabetes in community. *Frontiers in Endocrinology*, **2023**, 14: 1134877. <https://doi.org/10.3389/fendo.2023.1134877>
- [31] Li, M., Cheng, D., Peng, C., et al. Therapeutic mechanisms of the medicine and food homology formula Xiao-Ke-Yin on glucolipid metabolic dysfunction revealed by transcriptomics, metabolomics and microbiomics in mice. *Chinese Medicine*, **2023**, 18: 57. <https://doi.org/10.1186/s13020-023-00752-6>
- [32] Department of Food Safety Standards and Monitoring and Evaluation. Notice of the Ministry of Health on Further Regulating the Management of Health Food Raw Materials (Health Law Jianfa [2002] No. 51). Retrieved from: <http://www.nhc.gov.cn/sps/s3593/200810/bc239ea3d226449b86379f645dfd881d.shtml>. Accessed August 12, 2023.
- [33] Department of Food Safety Standards and Monitoring and Evaluation. Announcement on Angelica and other 6 newly added substances that are traditionally both food and Chinese medicinal materials (No. 8, 2019). Retrieved from: <http://www.nhc.gov.cn/sps/s7885/202001/b941b6138e93414cb08aed926ca3c631.shtml>. Accessed August 12, 2023.
- [34] Department of Food Safety Standards and Monitoring and Evaluation. Notice on Carrying out Pilot Work for the Management of 9 Substances such as Dangshen, which are both food and Chinese medicinal materials according to tradition (No. 311, 2019). Retrieved from: <http://www.nhc.gov.cn/sps/s7885/202001/1ec2cca04146450d9b14acc2499d854f.shtml>. Accessed August 12, 2023.
- [35] Chen, J. Essential role of medicine and food homology in health and wellness. *Chinese Herbal Medicine*, **2023**, 15: 347–348. <https://doi.org/10.1016/j.chmed.2023.05.001>
- [36] Lu, Q., Li, R., Yang, Y., et al. Ingredients with anti-inflammatory effect from medicine food homology plants. *Food Chemistry*, **2022**, 368: 130610. <https://doi.org/10.1016/j.foodchem.2021.130610>
- [37] Batiha, G. E., Beshbishy, A. M., El-Mleeh, A., et al. Traditional uses, bioactive chemical constituents, and pharmacological and toxicological activities of *Glycyrrhiza glabra* L. (Fabaceae). *Biomolecules*, **2020**, 10: 352. <https://doi.org/10.3390/biom10030352>
- [38] Luo, H., Vong, C. T., Chen, H., et al. Naturally occurring anti-cancer compounds: shining from Chinese herbal medicine. *Chinese Medicine*, **2019**, 14: 48. <https://doi.org/10.1186/s13020-019-0270-9>
- [39] Qu, S., Yu, S., Ma, X., et al. “Medicine food homology” plants promote periodontal health: antimicrobial, anti-inflammatory, and inhibition of bone resorption. *Frontiers in Nutrition*, **2023**, 10: 1193289.
- [40] Lamy, P. P. Effects of diet and nutrition on drug therapy. *Journal of the American Geriatrics Society*, **1982**, 30: S99–112.

- [41] Bushra, R., Aslam, N., Khan, A. Y. Food-drug interactions. *Oman Medical Journal*, **2011**, 26: 77–83. <https://doi.org/10.5001/omj.2011.21>
- [42] Chinese Pharmacopoeia Commission. *Pharmacopoeia of the People's Republic of China*, 11th Edition.; China, **2020**.
- [43] Pongprayoon, U., Baekstrom, P., Jacobsson, U., et al. Compounds inhibiting prostaglandin synthesis isolated from *Ipomoea pes-caprae*. *Planta Medica*, **1991**, 57: 515–518. <https://doi.org/10.1055/s-2006-960196>
- [44] Nuñez, L., Aquino, M. D. Microbicide activity of clove essential oil (*Eugenia caryophyllata*). *Brazilian Journal of Microbiology*, **2012**, 43: 1255–1260. <https://doi.org/10.1590/S1517-83822012000400003>
- [45] Kumar Pandey, V., Shams, R., Singh, R., et al. A comprehensive review on clove (*Caryophyllus aromaticus* L.) essential oil and its significance in the formulation of edible coatings for potential food applications. *Frontiers in Nutrition*, **2022**, 9: 987674. <https://doi.org/10.3389/fnut.2022.987674>
- [46] WebMD Editorial Contributors. Health Benefits of Cloves, 2020. Retrieved from <https://www.webmd.com/diet/health-benefits-cloves>. Accessed August 12, 2023.
- [47] Deng, J., Huang, L., Xie, Y., et al. The anti-inflammatory and analgesic effects of star anise, an aromatic herb in South China. *Acta Horticulturae*, **2014**, 1125: 151–160. <https://doi.org/10.17660/ActaHortic.2016.1125.19>
- [48] Alhajj, M. S., Qasem, M. A. A., Jar El Nabi, A. R., et al. *In-vitro* antibacterial and antifungal effects of high levels of Chinese star anise. *Brazilian Journal of Poultry Science*, **2019**, 21.
- [49] Pahore, A. K., Khan, S., Karim, N. Anticancer effect of *Illicium verum* (star anise fruit) against human breast cancer MCF-7 cell line. *Pakistan Journal of Medical Sciences*, **2023**, 39: 70–74. <https://doi.org/10.1590/1806-9061-2016-0427>
- [50] Schiff Food Products Co. INC. The Finest Spices and Seasonings, 2023. Retrieved from <https://schifffood.com/spices/star-anise/>. Accessed August 12, 2023.
- [51] Hwang, K. A., Hwang, Y. J., Hwang, H. J., et al. Sword bean (*Canavalia gladiata*) pod exerts anti-allergic and anti-inflammatory effects through modulation of Th1/Th2 cell differentiation. *Nutrients*, **2022**, 14: 2853. <https://doi.org/10.3390/nu14142853>
- [52] Chung, J., Lee, J., Ha, D. Antimicrobial activities of sword bean (*Canavalia gladiata*) extracts against food poisoning bacteria. *The Korean Society of Food Hygiene and Safety*, **2014**, 29: 376. <https://doi.org/10.13103/JFHS.2014.29.4.376>
- [53] Abeesh, P., Rasmi, R. R., Guruvayoorappan, C. Edible sword bean extract induces apoptosis in cancer cells *in vitro* and inhibits ascites and solid tumor development *in vivo*. *Nutrition and Cancer*, **2021**, 73: 1015–1025. <https://doi.org/10.1080/01635581.2020.1781202>
- [54] Feedipedia. Sword bean (*Canavalia gladiata*), 2015. Retrieved from <https://www.feedipedia.org/node/326>. Accessed August 12, 2023.
- [55] Korinek, M., Handoussa, H., Tsai, Y. H., et al. Anti-Inflammatory and antimicrobial volatile oils: fennel and cumin inhibit neutrophilic inflammation via regulating calcium and MAPKs. *Frontiers in Pharmacology*, **2021**, 12: 674095. <https://doi.org/10.3389/fphar.2021.674095>
- [56] Ghasemian, A., Al-Marzoqi, A. H., Mostafavi, S. K. S., et al. Chemical composition and antimicrobial and cytotoxic activities of *Foeniculum vulgare* Mill essential oils. *Journal of Gastrointestinal Cancer*, **2020**, 51: 260–266. <https://doi.org/10.1007/s12029-019-00241-w>
- [57] Sadegh Roudbari, L., Eslami, M., Movahedi, M., et al. Evaluation of the anti-metastatic effect of foeniculum vulgare on the protein expression of HSP 70 & 90 in BALB/c mice with 4t1 model of breast cancer. *Asian Pacific Journal of Cancer Prevention*, **2023**, 24: 833–840. <https://doi.org/10.31557/APJCP.2023.24.3.833>
- [58] Arnarson, A. 10 Science-Based Benefits of Fennel and Fennel Seeds, 2023. Retrieved from <https://www.healthline.com/nutrition/fennel-and-fennel-seed-benefits>. Accessed August 12, 2023.
- [59] Lovelace, E. S., Wagoner, J., MacDonald, J., et al. Silymarin suppresses cellular inflammation by inducing reparative stress signaling. *Journal of Natural Products*, **2015**, 78: 1990–2000. <https://doi.org/10.1021/acs.jnatprod.5b00288>
- [60] de Oliveira, D. R., Tintino, S. R., Braga, M. F., et al. *In vitro* antimicrobial and modulatory activity of the natural products silymarin and silibinin. *BioMed Research International*, **2015**, 2015: 292797.
- [61] Wang, Y., Yuan, A. J., Wu, Y. J., et al. Silymarin in cancer therapy: mechanisms of action, protective roles in chemotherapy-induced toxicity, and nanoformulations. *Journal of Functional Foods*, **2023**, 100: 105384. <https://doi.org/10.1016/j.jff.2022.105384>
- [62] Flower and Health. What is the use of thistle and how to eat it, **2021**. Retrieved from <http://m.wfsky.com/hyjk/33195.html>. Accessed August 12, 2023.
- [63] Kim, M. J., Kim, H. N., Kang, K. S., et al. Methanol extract of *Dioscorea* Rhizoma inhibits pro-inflammatory cytokines and mediators in the synovocytes of rheumatoid arthritis. *International Immunopharmacology*, **2004**, 4: 1489–1497. <https://doi.org/10.1016/j.intimp.2004.07.001>
- [64] Nurfitriani, A., Mahendradatta, M., Laga, A., et al. Antibacterial effectiveness of purple yam (*Dioscorea alata* L) sap extract in inhibiting the growth of *Staphylococcus aureus* & *Escherichia coli*. *Advances in Biological Sciences Research*, **2019**, 15: 5–11. <https://doi.org/10.2991/absr.k.210810.002>
- [65] Mazzio, E., Almalki, A., Darling-Reed, S. F., et al. Effects of wild yam root (*Dioscorea villosa*) extract on the gene expression profile of triple-negative breast cancer cells. *Cancer Genomics Proteomics*, **2021**, 18: 735–755. <https://doi.org/10.21873/cgp.20294>
- [66] Obidiegwu, J. E., Lyons, J. B., Chilaka, C. A. The *Dioscorea* genus (yam)-an appraisal of nutritional and therapeutic potentials. *Foods*, **2020**, 9: 1304. <https://doi.org/10.3390/foods9091304>
- [67] Wu, M., Liu, L., Xing, Y., et al. Roles and mechanisms of hawthorn and its extracts on atherosclerosis: a review. *Frontier in Pharmacology*, **2020**, 11: 118. <https://doi.org/10.3389/fphar.2020.00118>
- [68] Niu, Y., Nan, Y., Yuan, L., et al. Study on antibacterial effect of medlar and hawthorn compound extract *in vitro*. *African Journal of Traditional, Complementary and Alternative Medicine*, **2013**, 10: 567–573. <https://doi.org/10.4314/ajtcam.v10i3.27>
- [69] Ma, L., Xu, G. B., Tan, X., et al. Anti-cancer potential of polysaccharide extracted from hawthorn (*Crataegus*) on human colon cancer cell line HCT116 via cell cycle arrest and apoptosis. *Journal of Functional Foods*, **2020**, 64: 103677. <https://doi.org/10.1016/j.jff.2019.103677>
- [70] Digital-Hong Kong Macau. Ingredient: Hawthorn, 2018. Retrieved from https://guide.michelin.com/hk/en/article/dining-in/know_your_ingredients_hawthorn. Accessed August 13, 2023.
- [71] Xu, L., Ying, Z., Wei, W., et al. A novel alkaloid from *Portulaca oleracea* L. *Natural Product Research*, **2017**, 31: 902–908. <https://doi.org/10.1080/14786419.2016.1253081>
- [72] Du, Y. K., Liu, J., Li, X. M., et al. Flavonoids extract from *Portulaca oleracea* L. induce *Staphylococcus aureus* death by apoptosis-like pathway. *International Journal of Food Properties*, **2017**, 20. <https://doi.org/10.1080/10942912.2017.1300812>
- [73] Shen, H., Tang, G., Zeng, G., et al. Purification and characterization of an antitumor polysaccharide from *Portulaca oleracea* L. *Carbohydrate Polymers*, **2013**, 93: 395–400. <https://doi.org/10.1016/j.carbpol.2012.11.107>
- [74] Fernández-Poyatos, M. d. P., Llorent-Martínez, E. J., Ruiz-Medina, A. Phytochemical composition and antioxidant activity of *Portulaca oleracea*: influence of the steaming cooking process. *Foods*, **2021**, 10: 94. <https://doi.org/10.3390/foods10010094>
- [75] Pang, J., Li, J., Wu, X. H., et al. The effect of the type II collagen protein from *Zoocys* on cytokines production by synovocytes in rats with adjuvant arthritis. *Zhong Yao Cai*, **2009**, 32: 556–560.
- [76] Santamaria, C. S., Larios, Y., Angulo, J., et al. Antimicrobial activity of myotoxic phospholipases A2 from crotalid snake venoms and synthetic peptide variants derived from their C-

- terminal region. *Toxicon*, **2005**, 45: 807–815. <https://doi.org/10.1016/j.toxicon.2004.09.012>
- [77] Baby Joseph, S., Justin, R., Biby, T. E., et al. Pharmacognostic and biochemical properties of certain biomarkers in snake venom. *Asian Journal of Biological Sciences*, **2011**, 4: 317–324. <https://doi.org/10.3923/ajbs.2011.317.324>
- [78] Kaifeng Kangya Biotechnology Co., Ltd. Snake Oyster Tablet Candy, 2018. Retrieved from <http://222.143.34.153/pdf/2018119113549215.pdf>. Accessed August 13, 2023.
- [79] Jin, H., Lee, B., Lim, K., et al. Anti-inflammatory effects of *Prunus mume* mixture in colitis induced by dextran sodium sulfate. *The Korean Journal of Medicinal Crop Science*, **2011**, 19: 16–23. <https://doi.org/10.7783/KJMCS.2011.19.1.016>
- [80] Chen, Y., Wong, R. W., Seneviratne, C. J., et al. The antimicrobial efficacy of *Fructus mume* extract on orthodontic bracket: a monospecies-biofilm model study *in vitro*. *Archives of Oral Biology*, **2011**, 56: 16–21. <https://doi.org/10.1016/j.archoralbio.2010.08.006>
- [81] Bailly, C. Anticancer properties of *Prunus mume* extracts (Chinese plum, Japanese apricot). *Journal of Ethnopharmacology*, **2020**, 246: 112215. <https://doi.org/10.1016/j.jep.2019.112215>
- [82] Wang, S., Wei, S., Zhu, Y., et al. Comparative investigation of the differences in chemical compounds between raw and processed *Mume Fructus* using plant metabolomics combined with chemometrics methods. *Molecules*, **2022**, 27: 6344. <https://doi.org/10.3390/molecules27196344>
- [83] Yeo, C., Ahn, C. R., Kim, J. E., et al. *Chaenomeles Fructus* (CF), the fruit of *Chaenomeles sinensis* alleviates IL-1 β induced cartilage degradation in rat articular chondrocytes. *International Journal of Molecular Sciences*, **2022**, 23: 4360. <https://doi.org/10.3390/ijms23084360>
- [84] Shang, Y., Miao, J., Zhang, Y., et al. Study on the antibacterial properties of Xuan Mugua and the properties of its beverage. *Food Research and Development*, **2020**, 11: 129–133. <https://doi.org/10.12161/j.issn.1005-6521.2020.11.022>
- [85] Lin, C. C., Huang, C. Y., Mong, M. C., et al. Antiangiogenic potential of three triterpenic acids in human liver cancer cells. *Journal of Agricultural and Food Chemistry*, **2011**, 59: 755–762. <https://doi.org/10.1021/jf103904b>
- [86] NOMSS. Chinese Papaya Soup with Black Eyed Peas (Easy), 2022. Retrieved from <https://www.nomss.com/chinese-papaya-soup/>. Accessed August 13, 2023.
- [87] Wang, S., Luo, Q., Fan, P. Cannabisin F from hemp (*Cannabis sativa*) seed suppresses lipopolysaccharide-induced inflammatory responses in BV2 microglia as SIRT1 modulator. *International Journal of Molecular Sciences*, **2019**, 20: 507. <https://doi.org/10.3390/ijms20030507>
- [88] Li, G. L. Regulatory effects of Cannabis Fructus oil on gut microecology in D-galactose-induced aging mice. *Chinese Traditional and Herbal Drugs*, **2020**, 24: 3509–3517.
- [89] Tomko, A. M., Whynot, E. G., Ellis, L. D., et al. Anti-Cancer potential of cannabinoids, terpenes, and flavonoids present in cannabis. *Cancers (Basel)*, **2020**, 12: 1985. <https://doi.org/10.3390/cancers12071985>
- [90] Chan, K. An introduction to chinese herbal teas, 2020. Retrieved from <https://ovolo.com/ovolo/blog/an-introductory-guide-to-chinese-herbal-teas/>. Accessed August 13, 2023.
- [91] Wu, P., Liang, S., He, Y., et al. Network pharmacology analysis to explore mechanism of Three Flower Tea against nonalcoholic fatty liver disease with experimental support using high-fat diet-induced rats. *Chinese Herbal Medicines*, **2022**, 14: 273–282. <https://doi.org/10.1016/j.chmed.2022.03.002>
- [92] Kačaniová, M., Terentjeva, M., Galovičová, L., et al. Biological activity and antibiofilm molecular profile of *Citrus aurantium* essential oil and its application in a food model. *Molecules*, **2020**, 25: 3956. <https://doi.org/10.3390/molecules25173956>
- [93] Park, H. S., Hong, G. E., Lee, H. J., et al. Anti-cancer and anti-inflammatory properties of korean citrus fruits (*Citrus aurantium* L.). *Journal of Korean Clinical Health Science*, **2014**, 2: 73–78. <https://doi.org/10.15205/kschs.2014.2.1.73>
- [94] Karabiyikli, S., Değirmenci, H., Karapinar, M. Inhibitory effect of sour orange (*Citrus aurantium*) juice on *Salmonella Typhimurium* and *Listeria monocytogenes*. *LWT-Food Science and Technology*, **2014**, 55: 421–425. <https://doi.org/10.1016/j.lwt.2013.10.037>
- [95] Wang, H., Yuan, P. D., Zeng, C. H., et al. The pharmacological action and clinical application of *Polygonatum sibiricum*. *Hubei Institute of Medical Science*, **2017**, 34: 58–64.
- [96] Cao, G. H., Li, Z. D., Zhao, R. H., et al. Compare of antibacterial effect produced by polysaccharides between raw materials and processing *Polygonatum sibiricum*. *Food Science Technology*, **2017**, 42: 202–206.
- [97] Gu, M., Zhang, Y., Fan, S., et al. Extracts of *Rhizoma polygonati* odorati prevent high-fat diet-induced metabolic disorders in C57BL/6 mice. *PLoS One*, **2013**, 8: e81724. <https://doi.org/10.1371/journal.pone.0081724>
- [98] No-Fills Recipes. Burdock root yuzhu and apple soup, 2016. Retrieved from <https://www.nofillsrecipes.com/2016/07/burdock-root-yuzhu-and-apple-soup.html>. Accessed August 14, 2023.
- [99] Kim, J. K., Oh, S. M., Kwon, H. S., et al. Anti-inflammatory effect of roasted licorice extracts on lipopolysaccharide-induced inflammatory responses in murine macrophages. *Biochemical and Biophysical Research Communications*, **2006**, 345: 1215–1223. <https://doi.org/10.1016/j.bbrc.2006.05.035>
- [100] Chen, J. C., Ho, T. Y., Chang, Y. S., et al. Identification of *Escherichia coli* enterotoxin inhibitors from traditional medicinal herbs by *in silico*, *in vitro*, and *in vivo* analyses. *Journal of Ethnopharmacology*, **2009**, 121: 372–378. <https://doi.org/10.1016/j.jep.2008.11.011>
- [101] Jiang, Y. X., Dai, Y. Y., Pan, Y. F., et al. Total flavonoids from Radix Glycyrrhiza exert anti-inflammatory and antitumor effects by inactivating iNOS signaling pathways. *Evidence-based Complementary and Alternative Medicine*, **2018**, 2018: 6714282. <https://doi.org/10.1155/2018/6714282>
- [102] McGrane, K. What are licorice root's benefits and downsides? 2020. Retrieved from <https://www.healthline.com/nutrition/licorice-root>. Accessed August 14, 2023.
- [103] Kang, O. H., Chae, H. S., Oh, Y. C., et al. Anti-nociceptive and anti-inflammatory effects of *Angelica dahurica* radix through inhibition of the expression of inducible nitric oxide synthase and NO production. *The American Journal of Chinese Medicine*, **2008**, 36: 913–928. <https://doi.org/10.1142/S0192415X0800634X>
- [104] Lechner, D., Stavri, M., Oluwatuyi, M., et al. The anti-staphylococcal activity of *Angelica dahurica* (Bai Zhi). *Phytochemistry*, **2004**, 65: 331–335. <https://doi.org/10.1016/j.phytochem.2003.11.010>
- [105] Hwangbo, H., Choi, E. O., Kim, M. Y., et al. Suppression of tumor growth and metastasis by ethanol extract of *Angelica dahurica* Radix in murine melanoma B16F10 cells. *Bioscience Trends*, **2020**, 14: 23–34. <https://doi.org/10.5582/bst.2019.01230>
- [106] Zhao, H., Feng, Y. L., Wang, M., et al. The *Angelica dahurica*: a review of traditional uses, phytochemistry and pharmacology. *Frontiers in Pharmacology*, **2022**, 13: 896637. <https://doi.org/10.3389/fphar.2022.896637>
- [107] Li, M., Li, B., Hou, Y., et al. Anti-inflammatory effects of chemical components from *Ginkgo biloba* L. male flowers on lipopolysaccharide-stimulated RAW264.7 macrophages. *Phytotherapy Research*, **2019**, 33: 989–997. <https://doi.org/10.1002/ptr.6292>
- [108] Afanas'ev, I. Mechanisms of superoxide signaling in epigenetic processes: relation to aging and cancer. *Aging Disease*, **2015**, 6: 216–227. <https://doi.org/10.14336/AD.2014.0924>
- [109] Feodorova, Y., Tomova, T., Minchev, D., et al. Cytotoxic effect of *Ginkgo biloba* kernel extract on HCT116 and A2058 cancer cell lines. *Heliyon*, **2020**, 6: e04941. <https://doi.org/10.1016/j.heliyon.2020.e04941>
- [110] Centre for Food Safety, The Government of the Hong Kong Special

- Administrative Region, 2018. The Ginkgo—A Living Fossil with Poisonous Seeds. Retrieved from https://www.cfs.gov.hk/english/multimedia/multimedia_pub/multimedia_pub_fsf_149_01.html. Accessed August 14, 2023.
- [111] Zhang, H., Kang, J., Guo, W., et al. An optimal medicinal and edible Chinese herbal formula attenuates particulate matter-induced lung injury through its anti-oxidative, anti-inflammatory and anti-apoptosis activities. *Chinese Herbal Medicines*, **2022**, 15: 407–420. <https://doi.org/10.1016/j.chmed.2022.08.003>
- [112] Rahman, S. A., Akhter, S. Antibacterial and cytotoxic activity of seeds of white hyacinth bean (*Lablab purpureus* L. sweet 'white'). *Journal of Advanced Biotechnology and Experimental Therapeutics*, **2018**, 1: 49–54. <https://doi.org/10.5455/jabet.2018.d9>
- [113] Liao, X., Bu, Y., Jia, Q. Traditional Chinese medicine as supportive care for the management of liver cancer: past, present, and future. *Genes Disease*, 2019, 7: 370–379. <https://doi.org/10.1016/j.gendis.2019.10.016>
- [114] Me & Qi. Bai Bian Dou, 2023. Retrieved from <https://www.meandqi.com/herb-database/hyacinth-beans>. Accessed August 14, 2023.
- [115] An, J. M., Kim, E., Lee, H. J., et al. *Dolichos lablab* L. extracts as pharmanutrient for stress-related mucosal disease in rat stomach. *Journal of Clinical Biochemistry and Nutrition*, **2020**, 67: 89–101. <https://doi.org/10.3164/jcbrn.20-11>
- [116] Narender, B. R., Rajakumari, M., Khan, S., et al. Antimicrobial activity of *Dolichos* bean (*Dolichus Lablab*) flower. *Journal of Research in Pharmacy*, **2017**, 6: 153–156.
- [117] Vigneshwaran, V., Thirusangu, P., Vijay Avin, B. R., et al. Immunomodulatory glc/man-directed *Dolichos lablab* lectin (DLL) evokes anti-tumour response *in vivo* by counteracting angiogenic gene expressions. *Clinical and Experimental Immunology*, **2017**, 189: 21–35. <https://doi.org/10.1111/cei.12959>
- [118] Kalloo, G., Pandey, S. C. Hyacinth bean: *Lablab purpureus* (L) Sweet. *Genetic Improvement of Vegetable Crops*, **1993**: 387–389.
- [119] Kunworarath, N., Rangkadilok, N., Suriyo, T., et al. Longan (*Dimocarpus longan* Lour.) inhibits lipopolysaccharide-stimulated nitric oxide production in macrophages by suppressing NF- κ B and AP-1 signaling pathways. *Journal of Ethnopharmacology*, **2016**, 179: 156–161. <https://doi.org/10.1016/j.jep.2015.12.044>
- [120] Ripa, F. A., Haque, M., Bulbul, I. J. *In vitro* antibacterial, cytotoxic and antioxidant activities of plant *Nephelium longan*. *Pakistan Journal of Biological Sciences*, **2010**, 13: 22–27. <https://doi.org/10.3923/pjbs.2010.22.27>
- [121] Yi, Y., Huang, F., Zhang, M. W., et al. Solution properties and *in vitro* anti-tumor activities of polysaccharides from longan pulp. *Molecules*, **2013**, 18: 11601–11613. <https://doi.org/10.3390/molecules180911601>
- [122] The Chinese Soup Lady. Longan (Dried), 2009. Retrieved from <https://thechinesesouplady.com/longan-dried/>. Accessed August 14, 2023.
- [123] Luo, H., Wu, H., Wang, L., et al. Hepatoprotective effects of *Cassiae Semen* on mice with non-alcoholic fatty liver disease based on gut microbiota. *Communications Biology*, **2021**, 4: 1357. <https://doi.org/10.1038/s42003-021-02883-8>
- [124] Dong, X., Fu, J., Yin, X., et al. *Cassiae semen*: a review of its phytochemistry and pharmacology (review). *Molecular Medicine Reports*, **2017**, 16: 2331–2346. <https://doi.org/10.3892/mmr.2017.6880>
- [125] Kwon, K. S., Lee, J. H., So, K. S., et al. Aurantio-obtusin, an anthraquinone from *Cassiae semen*, ameliorates lung inflammatory responses. *Phytotherapy Research*, **2018**, 32: 1537–1545. <https://doi.org/10.1002/ptr.6082>
- [126] Lenon, G. B., Li, K. X., Chang, Y. H., et al. Efficacy and safety of a Chinese herbal medicine formula (RCM-104) in the management of simple obesity: a randomized, placebo-controlled clinical trial. *Evidence-based Complementary and Alternative Medicine*, **2012**, 2012: 435702. <https://doi.org/10.1155/2012/435702>
- [127] Kwon, O. K., Lee, M. Y., Yuk, J. E., et al. Anti-inflammatory effects of methanol extracts of the root of *Lilium lancifolium* on LPS-stimulated RAW264.7 cells. *Journal of Ethnopharmacology*, **2010**, 130: 28–34. <https://doi.org/10.1016/j.jep.2010.04.002>
- [128] Niu, L. X., Jin, L., Zhang, Y. L., et al. An evaluation on the antibacterial effects of the bulb extract from three *Lilium* species. *Guihua*, **2008**, 6: 842–846.
- [129] Han, H. P., Xie, H. C. A study on the extraction and purification process of lily polysaccharide and its anti-tumor effect. *African Journal of Traditional, Complementary, and Alternative Medicines*, **2013**, 10: 485–489. <https://doi.org/10.4314/ajtcam.v10i6.16>
- [130] Just One Cookbook. Lily Bulb (Yurine), 2023. Retrieved from <https://www.justonecookbook.com/lily-bulb-yurine/>. Accessed August 14, 2023.
- [131] Zhang, W. K., Tao, S. S., Li, T. T., et al. Nutmeg oil alleviates chronic inflammatory pain through inhibition of COX-2 expression and substance P release *in vivo*. *Food & Nutrition Research*, **2016**, 60: 30849. <https://doi.org/10.3402/fnr.v60.30849>
- [132] Ibrahim, K. M., Naem, R. K., Abd-Sahib, A. S. Antibacterial activity of nutmeg (*Myristica fragrans*) seed extracts against some pathogenic bacteria. *Journal of Al-Nahrain University*, **2013**, 16: 188–192. <https://doi.org/10.22401/JNUS.16.2.29>
- [133] Bao, H., Muge, Q. Anticancer effect of myristicin on hepatic carcinoma and related molecular mechanism. *Pharmaceutical Biology*, **2021**: 1126–1132. <https://doi.org/10.1080/13880209.2021.1961825>
- [134] Gavin, J. What is Nutmeg? & How to Use It, 2020. Retrieved from <https://www.jessicagavin.com/what-is-nutmeg/>. Accessed August 15, 2023.
- [135] Pagliari, S., Forcella, M., Lonati, E., et al. Antioxidant and anti-inflammatory effect of cinnamon (*Cinnamomum verum* J. Presl) bark extract after *in vitro* digestion simulation. *Foods*, **2023**, 12: 452. <https://doi.org/10.3390/foods12030452>
- [136] Keskin, D., Toroglu, S. Studies on antimicrobial activities of solvent extracts of different spices. *Journal of Environmental Biology*, **2011**, 32: 251–256.
- [137] Kwon, H. K., Hwang, J. S., So, J. S., et al. Cinnamon extract induces tumor cell death through inhibition of NF κ B and AP1. *BMC Cancer*, **2010**, 10: 392. <https://doi.org/10.1186/1471-2407-10-392>
- [138] Fine Dining Lovers, Editorial Staff. Is Cinnamon Good For You? Benefits, Uses and Recipes, 2020. Retrieved from: <https://www.finedininglovers.com/article/cinnamon-benefits-recipes>. Accessed August 15, 2023.
- [139] Gao, S., Fang, J., Zhou, J., et al. Extract essence of seven Chinese herbs potentially exhibits anti-inflammatory and cancer-preventive effects. *Food Materials Research*, **2023**, 3: 19. <https://doi.org/10.48130/FMR-2023-0019>
- [140] Rahman, S., Akbor, M. M., Howlader, A., et al. Antimicrobial and cytotoxic activity of the alkaloids of Amlaki (*Emblca officinalis*). *Pakistan Journal of Biological Sciences*, **2009**, 12: 1152–1155. <https://doi.org/10.3923/pjbs.2009.1152.1155>
- [141] Zhao, H. J., Liu, T., Mao, X., et al. Fructus phyllanthi tannin fraction induces apoptosis and inhibits migration and invasion of human lung squamous carcinoma cells *in vitro* via MAPK/MMP pathways. *Acta Pharmacologica Sinica*, **2015**, 36: 758–768. <https://doi.org/10.1038/aps.2014.130>
- [142] Zhang, Z., Zhang, S. Method for effectively removing tart and astringent taste of fructus phyllanthi fruit juice and application thereof, 2012. Retrieved from: <https://patents.google.com/patent/CN102578643A/en>. Accessed August 15, 2023.
- [143] Zhu, Y., Zhang, Q., Gao, M., et al. Comparisons of chemical profiles and gastroprotective effects of citri sarcodactylis fructus pre- and poststeam processing. *Evidence-based Complementary and Alternative Medicine*, **2020**, 2020: 8491375. <https://doi.org/10.1155/2020/8491375>
- [144] Mahdi, A. A., Al-Ansi, W., Ahmed, M. I., et al. Bioactive compounds and functional benefits of the Foshou fruit: a review. *Journal of Food and Nutrition Research*, **2018**, 6: 486–491. <https://doi.org/10.1155/2018/486491>

- doi.org/10.12691/jfmr-6-7-10
- [145] Chan, Y. Y., Wu, T. S., Kuo, Y. H. ChemInform Abstract: Chemical Constituents and Cytotoxicity from the Stem Bark of Citrus Medica, **2009**.
- [146] All Things Health. Fingered Citron Fruit (Fo Shou), **2022**. Retrieved from <https://www.allthingshealth.com/en-my/glossary/fingered-citron-fruit-fo-shou/>. Accessed August 15, **2023**.
- [147] Lee, H. H., Ahn, J. H., Kwon, A. R., et al. Chemical composition and antimicrobial activity of the essential oil of apricot seed. *Phytotherapy Research*, **2014**, 28: 1867–1872. <https://doi.org/10.1002/ptr.5219>
- [148] Kitic, D., Miladinovic, B., Randjelovic, M., et al. Anticancer potential and other pharmacological properties of *Prunus armeniaca* L.: an updated overview. *Plants (Basel)*, **2022**, 11: 1885. <https://doi.org/10.3390/plants11141885>
- [149] Akhone, M. A., Bains, A., Tosif, M. M., et al. Apricot kernel: bioactivity, characterization, applications, and health attributes. *Foods*, **2022**, 11: 2184. <https://doi.org/10.3390/foods11152184>
- [150] Zhu, X., Meng, T., Ren, F., et al. A review on apricot kernel seed proteins and peptides: biological functions and food applications. *International Journal of Biological Macromolecules*, **2024**, 292: 139053. <https://doi.org/10.1016/j.ijbiomac.2024.139053>
- [151] Li, M., Zhao, X., Xie, J., et al. Dietary inclusion of seabuckthorn (*Hippophae rhamnoides*) mitigates foodborne enteritis in zebrafish through the gut-liver immune axis. *Frontiers in Physiology*, **2022**, 13: 831226. <https://doi.org/10.3389/fphys.2022.831226>
- [152] Upadhyay, N. K., Kumar, M. S., Gupta, A. Antioxidant, cytoprotective and antibacterial effects of sea buckthorn (*Hippophae rhamnoides* L.) leaves. *Food and Chemical Toxicology: an International Journal Published for the British Industrial Biological Research Association*, **2010**, 48: 3443–3448. <https://doi.org/10.1016/j.fct.2010.09.019>
- [153] Visan, S., Soritau, O., Tatomir, C., et al. The bioactive properties of carotenoids from lipophilic sea buckthorn extract (*Hippophae rhamnoides* L.) in breast cancer cell lines. *Molecules*, **2023**, 28: 4486. <https://doi.org/10.3390/molecules28114486>
- [154] Wang, Z., Zhao, F., Wei, P., et al. Phytochemistry, health benefits, and food applications of sea buckthorn (*Hippophae rhamnoides* L.): a comprehensive review. *Frontiers in Nutrition*, **2022**, 9: 1036295. <https://doi.org/10.3389/fnut.2022.1036295>
- [155] Lee, S. Y., Kim, H. J., Han, J. S. Anti-inflammatory effect of oyster shell extract in LPS-stimulated RAW 264.7 cells. *Preventive Nutrition and Food Science*, **2013**, 18: 23–29. <https://doi.org/10.3746/pnf.2013.18.1.023>
- [156] Ulagesan, S., Krishnan, S., Nam, T. J., et al. A review of bioactive compounds in oyster shell and tissues. *Frontiers in Bioengineering and Biotechnology*, **2022**, 10: 913839. <https://doi.org/10.3389/fbioe.2022.913839>
- [157] Chen, Y., Jiang, Y., Liao, L., et al. Inhibition of 4NQO-induced oral carcinogenesis by dietary oyster shell calcium. *Integrative Cancer Therapies*, **2016**, 15: 96–101. <https://doi.org/10.1177/1534735415596572>
- [158] Transparency Market Research. Oyster Shell Powder Market. Retrieved from: <https://www.transparencymarketresearch.com/oyster-shell-powder-market.html>. Accessed August 17, **2023**.
- [159] Jeong, J. W., Lee, H. H., Lee, K. W., et al. Mori folium inhibits interleukin-1 β -induced expression of matrix metalloproteinases and inflammatory mediators by suppressing the activation of NF- κ B and p38 MAPK in SW1353 human chondrocytes. *International Journal of Molecular Medicine*, **2016**, 37: 452–460. <https://doi.org/10.3892/ijmm.2015.2443>
- [160] Kim, D., Kang, K. H. Anti-Inflammatory and anti-bacterial potential of mulberry leaf extract on oral microorganisms. *International Journal of Environmental Research and Public Health*, **2022**, 19: 4984. <https://doi.org/10.3390/ijerph19094984>
- [161] Eo, H. J., Park, J. H., Park, G. H., et al. Anti-inflammatory and anti-cancer activity of mulberry (*Morus alba* L.) root bark. *BMC Complementary and Alternative Medicine*, **2014**, 14: 200. <https://doi.org/10.1186/1472-6882-14-200>
- [162] Srivastava, S., Kapoor, R., Thathola, A., et al. Mulberry (*Morus alba*) leaves as human food: a new dimension of sericulture. *International Journal of Food Sciences and Nutrition*, **2003**, 54: 411–416. <https://doi.org/10.1080/09637480310001622288>
- [163] Jiang, Y., You, S., Zhang, Y., et al. Enhancing bioactive components of *Euryale ferox* with *Lactobacillus curvatus* to reduce H₂O₂-induced oxidative stress in human skin fibroblasts. *Antioxidants (Basel)*, **2022**, 11: 1881. <https://doi.org/10.3390/antiox11101881>
- [164] Parray, J. A., Kamili, A. N., Qadri, R., et al. Evaluation of antibacterial activity of *Euryale ferox*. Salisb-a threatened aquatic plant of Kashmir Himalaya. *Medicinal and Aromatic Plant Science and Biotechnology*, **2010**, 1: 80–83.
- [165] Yin, D., Xue, M., Yang, G., et al. The alcoholic extract of *Euryale ferox* seed shell inhibits the proliferation of human gastric cancer SGC7901 cells and human hepatoma HepG2 cells and promotes their apoptosis. *Modern Food Science & Technology*, **2022**, 38: 55–65. <https://doi.org/10.13982/j.mfst.1673-9078.2022.6.0822>
- [166] Quan, C. Suzhou Food. Retrieved from <https://www.chinahighlights.com/suzhou/food-restaurant.htm>. Accessed August 17, **2023**.
- [167] Li, R., Yang, J. J., Shi, Y. X., et al. Chemical composition, antimicrobial and anti-inflammatory activities of the essential oil from Maqian (*Zanthoxylum myriacanthum* var. pubescens) in Xishuangbanna, SW China. *Journal of Ethnopharmacology*, **2014**, 158: 43–48. <https://doi.org/10.1016/j.jep.2014.10.006>
- [168] Bevilacqua, A., Corbo, M. R., Sinigaglia, M. *In vitro* evaluation of the antimicrobial activity of eugenol, limonene, and citrus extract against bacteria and yeasts, representative of the spoiling microflora of fruit juices. *Journal of Food Protection*, **2010**, 73: 888–894. <https://doi.org/10.4315/0362-028x-73.5.888>
- [169] Pang, W., Liu, S., He, F., et al. Anticancer activities of *Zanthoxylum bungeanum* seed oil on malignant melanoma. *Journal of Ethnopharmacology*, **2019**, 229: 180–189. <https://doi.org/10.1016/j.jep.2018.10.012>
- [170] Cook in Shanghai. Chinese Ingredients: The Sichuan Peppercorn, **2023**. Retrieved from: <https://www.cookinshanghai.com/sichuan-peppercorn/>. Accessed August 17, **2023**.
- [171] Jeong, Y. H., Oh, Y. C., Kim, T. I., et al. Neuroprotective and anti-neuroinflammatory properties of vignae radiatae semen in neuronal HT22 and microglial BV2 cell lines. *Nutrients*, **2022**, 14: 5265. <https://doi.org/10.3390/nu14245265>
- [172] Wu, S., Lu, S., Liu, J., et al. Physicochemical properties and bioactivities of rice beans fermented by *Bacillus amyloliquefaciens*. *Engineering*, **2021**, 7: 219–225. <https://doi.org/10.1016/j.eng.2020.10.010>
- [173] Crunkhorn, S. Deal watch: abbott boosts investment in NRF2 activators for reducing oxidative stress. *Nature Reviews Drug Discovery*, **2012**, 11: 96. <https://doi.org/10.1038/nrd3655>
- [174] Hu, H. H. Chinese Food Therapy Rx for Self Healing. Volume II: Beauty and Longevity: **2015**.
- [175] Yue, Q., Zhang, W., Lin, S., et al. Ejiao ameliorates lipopolysaccharide-induced pulmonary inflammation via inhibition of NF κ B regulating NLRP3 inflammasome and mitochondrial ROS. *Biomedicine & Pharmacotherapy*, **2022**, 152: 113275. <https://doi.org/10.1016/j.biopha.2022.113275>
- [176] Park, K. I., Lee, M. R., Oh, T. W., et al. Antibacterial activity and effects of *Colla corii asini* on *Salmonella typhimurium* invasion *in vitro* and *in vivo*. *BMC Complementary and Alternative Medicine*, **2017**, 17: 520. <https://doi.org/10.1186/s12906-017-2020-9>
- [177] Zhang, L., Xu, Z., Jiang, T., et al. Efficacy and safety of Ejiao (*Asini Corii Colla*) in women with blood deficient symptoms: a randomized, double-blind, and placebo-controlled clinical trial. *Frontiers in Pharmacology*, **2021**, 12: 718154. <https://doi.org/10.3389/fphar.2021.718154>
- [178] All Things Health. Donkey-Hide Gelatin (Ejiao), **2023**. Retrieved from: <https://www.allthingshealth.com/en-my/glossary/donkey-hide-gelatin-ejiao/>. Accessed August 17, **2023**.

- [179] Li, S., Zheng, M., Zhang, Z., et al. *Galli gigeriae* endothelium corneum: its intestinal barrier protective activity *in vitro* and chemical composition. *Chinese Medicine*, **2021**, 16: 22. <https://doi.org/10.1186/s13020-021-00432-3>
- [180] Abbas, H. F. Antibacterial activity of the extracts of chicken gizzard membrane against some pathogenic bacteria isolated from urinary tract infections. *Al-Mustansiriyah Journal of Science*, **2015**, 26: 20–23.
- [181] Wang, M., Jiang, H., Zhang, M., et al. “Highly Exposed Chinese Herbal Medicine” Combined with apatinib as maintenance treatment following first-line or second-line chemotherapy for extensive-stage small-cell lung cancer: a single-arm, prospective study. *Dose Response*, **2021**, 19: 15593258211055016. <https://doi.org/10.1177/15593258211055016>
- [182] Xia, X., Shen, X., Chen, M. World Century Compendium to TCM-Volume 4: Introduction to Chinese Internal Medicine, **2013**, pp. 383.
- [183] Zhong, Y., Marungruang, N., Fåk, F., et al. Effects of two whole-grain barley varieties on caecal SCFA, gut microbiota and plasma inflammatory markers in rats consuming low- and high-fat diets. *The British Journal of Nutrition*, **2015**, 113: 1558–1570. <https://doi.org/10.1017/S0007114515000793>
- [184] Pei, J., Feng, Z., Ren, T., et al. Selectively screen the antibacterial peptide from the hydrolysates of highland barley. *Engineering in Life Sciences*, **2017**, 18: 48–54. <https://doi.org/10.1002/elsc.201700118>
- [185] Abuarab, S. F., Talib, W. H. Immunomodulatory and anticancer activities of barley bran grown in Jordan: an *in vitro* and *in vivo* study. *Frontiers in Nutrition*, **2022**, 9: 838373. <https://doi.org/10.3389/fnut.2022.838373>
- [186] Raj, R., Shams, R., Pandey, V. K., et al. Barley phytochemicals and health promoting benefits: a comprehensive review. *Journal of Agriculture and Food Research*, **2023**, 14: 100677. <https://doi.org/10.1016/j.jafr.2023.100677>
- [187] Chamidah, A., Prihanto, A. A., Hardoko, H. Edema-reducing activity of *Sargassum crassifolium* B-glucan (laminaran) on edema-induced *Rattus norvegicus*. *Asian Journal of Pharmaceutical and Clinical Research*, **2017**, 10: 311. <https://doi.org/10.22159/ajpcr.2017.v10i7.18523>
- [188] Čmiková, N., Galovičová, L., Miškeje, M., et al. Determination of antioxidant, antimicrobial activity, heavy metals and elements content of seaweed extracts. *Plants (Basel)*, **2022**, 11: 1493. <https://doi.org/10.3390/plants11111493>
- [189] Funahashi, H., Imai, T., Mase, T., et al. Seaweed prevents breast cancer? *Japanese Journal of Cancer Research*, **2001**, 92: 483–487.
- [190] All Things Health. Kelp (Laminaria), 2023. Retrieved from: <https://www.allthingshealth.com/en-us/glossary/kelp-laminaria/>. Accessed August 18, 2023.
- [191] Yu, L., Jiang, B. P., Luo, D., et al. Bioactive components in the fruits of *Ziziphus jujuba* Mill. against the inflammatory irritant action of Euphorbia plants. *Phytomedicine*, **2012**, 19: 239–244. <https://doi.org/10.1016/j.phymed.2011.09.071>
- [192] Elalui, M., Ennajah, A., Ghazghazi, H., et al. Quantification of total phenols, flavonoids and tannins from *Ziziphus jujuba* (Mill.) and *Ziziphus lotus* (L.) (Desf). leaf extracts and their effects on antioxidant and antibacterial activities. *International Journal of Secondary Metabolite*, **2017**, 4: 18–26. <https://doi.org/10.21448/ijsm.275886>
- [193] Huang, X., Kojima-Yuasa, A., Norikura, T., et al. Mechanism of the anti-cancer activity of *Ziziphus jujuba* in HepG2 cells. *The American Journal of Chinese Medicine*, **2007**, 35: 517–532. <https://doi.org/10.1142/S0192415X0700503X>
- [194] Kao, T. H., Chen, B. H. Functional components in *Ziziphus* with emphasis on polysaccharides. *Polysaccharides*, **2014**.
- [195] Di, R., Huang, M. T., Ho, C. T. Anti-inflammatory activities of mogrosides from *Momordica grosvenori* in murine macrophages and a murine ear edema model. *Journal of Agricultural and Food Chemistry*, **2011**, 59: 7474–7481. <https://doi.org/10.1021/jf201207m>
- [196] Gong, X., Chen, N., Ren, K., et al. The fruits of *Siraitia grosvenorii*: a review of a Chinese food-medicine. *Frontiers in Pharmacology*, **2019**, 10: 1400. <https://doi.org/10.3389/fphar.2019.01400>
- [197] Liu, C., Dai, L., Liu, Y., et al. Antiproliferative activity of triterpene glycoside nutrient from monk fruit in colorectal cancer and throat cancer. *Nutrients*, **2016**, 8: 360. <https://doi.org/10.3390/nu8060360>
- [198] Drug.com. Luo Han Guo, 2022. Retrieved from: <https://www.drugs.com/npp/luo-han-guo.html>. Accessed August 18, 2023.
- [199] Seo, K. H., Choi, S. Y., Jin, Y., et al. Anti-inflammatory role of *Prunus persica* L. batsch methanol extract on lipopolysaccharide-stimulated glial cells. *Molecular Medicine Report*, **2020**, 21: 2030–2040. <https://doi.org/10.3892/mmr.2020.11016>
- [200] Seyyednejad, S. M., Maleki, S., Damab, N. M., et al. Antibacterial activity of *Prunus mahaleb* and parsley (*Petroselinum crispum*) against some pathogen. *Asian Journal of Biological Sciences*, **2008**, 1: 51–55.
- [201] Layosa, M. A. A., Lage, N. N., Chew, B. P., et al. Dark sweet cherry (*Prunus avium*) phenolics enriched in anthocyanins induced apoptosis in MDA-MB-453 breast cancer cells through MAPK-dependent signaling and reduced invasion via Akt and PLCγ-1 downregulation. *Nutrition and Cancer*, **2021**, 73: 1985–1997. <https://doi.org/10.1080/01635581.2020.1817514>
- [202] ActiveHerb. Yu Li Ren, 2023. Retrieved from: <https://www.activeherb.com/chineseherbs/yuliren.shtml>. Accessed August 18, 2023.
- [203] Yan, X. L., Meng, A. P., Pu, S. B. Research progress on activities of anti-inflammation and immunity from the flower of *Lonicera japonica* Thunb. *Chinese Wild Plant Resources*, **2016**, 35: 41–44.
- [204] Li, Y., Cai, W., Weng, X., et al. *Lonicerae Japonicae Flos* and *Lonicerae Flos*: a systematic pharmacology review. *Phytochemistry Reviews: Proceedings of the Phytochemical Society of Europe*, **2020**, 19: 1–61. <https://doi.org/10.1007/s11101-019-09655-7>
- [205] Li, T., Fu, X., Tse, A. K., et al. Inhibiting STAT3 signaling is involved in the anti-melanoma effects of a herbal formula comprising *Sophorae Flos* and *Lonicerae Japonicae Flos*. *Scientific Reports*, **2017**, 7: 3097. <https://doi.org/10.1038/s41598-017-03351-2>
- [206] Zhao, H., Zeng, S., Chen, L., et al. Updated pharmacological effects of *Lonicerae japonicae flos*, with a focus on its potential efficacy on coronavirus disease-2019 (COVID-19). *Current Opinion in Pharmacology*, **2021**, 60: 200–207. <https://doi.org/10.1016/j.coph.2021.07.019>
- [207] Ma, F., Lin, Y., Ni, Z., et al. Therapeutic effects of natural polyphenols on colorectal adenomas: focus on preclinical studies (review). *Oncology Report*, **2023**, 49: 112. <https://doi.org/10.3892/or.2023.8549>
- [208] Xianget. Study on antibacterial activity of different fractions from *Canarium album*. *Science and Technology of Food Industry*, **2013**, 34: 149–152. <https://doi.org/10.13386/j.issn1002-0306.2013.12.004>
- [209] Mahbub, A. A., Le Maitre, C. L., Haywood-Small, S. L., et al. Differential effects of polyphenols on proliferation and apoptosis in human myeloid and lymphoid leukemia cell lines. *Anti-Cancer Agents in Medicinal Chemistry*, **2013**, 13: 1601–1613. <https://doi.org/10.2174/18715206113139990303>
- [210] He, C. *Canarium album* (Lour.) Raeusch. (Qingguo, Chinese Olive), **2015**.
- [211] Li, W., Zhou, P., Zhang, Y., et al. Houttuynia cordata, a novel and selective COX-2 inhibitor with anti-inflammatory activity. *Journal of Ethnopharmacology*, **2011**, 133: 922–927. <https://doi.org/10.1016/j.jep.2010.10.048>
- [212] Lu, X., Yang, X., Li, X., et al. *In vitro* activity of sodium new houttuyniate alone and in combination with oxacillin or netilmicin against methicillin-resistant *Staphylococcus aureus*. *PLoS One*, **2013**, 8: e68053. <https://doi.org/10.1371/journal.pone.0068053>
- [213] Kim, J. M., Hwang, I. H., Jang, I. S., et al. *Houttuynia cordata*

- Thunb promotes activation of HIF-1A-FOXO3 and MEF2A pathways to induce apoptosis in human HepG2 hepatocellular carcinoma cells. *Integrative Cancer Therapies*, **2017**, 16: 360–372. <https://doi.org/10.1177/1534735416670987>
- [214] All Things Health. Heartleaf Houttuynia Herb (*Houttuynia Cordata*), 2023. Retrieved from: <https://www.allthingshealth.com/en-my/glossary/houttuynia-cordata/>. Accessed August 21, 2023.
- [215] Ballester, P., Cerdá, B., Arcusa, R., et al. Effect of ginger on inflammatory diseases. *Molecules*, **2022**, 27: 7223. <https://doi.org/10.3390/molecules27217223>
- [216] Wang, X., Shen, Y., Thakur, K., et al. Antibacterial Activity and Mechanism of Ginger Essential Oil against *Escherichia coli* and *Staphylococcus aureus*. *Molecules*, **2020**, 25: 3955. <https://doi.org/10.3390/molecules25173955>
- [217] Rahmani, A. H., Shabrimi, F. M., Aly, S. M. Active ingredients of ginger as potential candidates in the prevention and treatment of diseases via modulation of biological activities. *International Journal of Physiology, Pathophysiology and Pharmacology*, **2014**, 6: 125–136.
- [218] MasterClass. What Is Ginger? Learn All About Ginger and Ginger Cooking Tips, 2021. Retrieved from: <https://www.masterclass.com/articles/what-is-ginger-learn-all-about-ginger-and-ginger-cooking-tips>. Accessed August 21, 2023.
- [219] Jeong, Y. H., Oh, Y. C., Cho, W. K., et al. Hoveniae Semen Seu Fructus ethanol extract exhibits anti-inflammatory activity via MAPK, AP-1, and STAT signaling pathways in LPS-stimulated RAW 264.7 and mouse peritoneal macrophages. *Mediators of Inflammation*, **2019**, 2019: 9184769. <https://doi.org/10.1155/2019/9184769>
- [220] Park, S. H., Kim, Y. K., Kim, M. S., et al. Antioxidant and antibacterial properties of hovenia (*Hovenia dulcis*) monofloral honey produced in South Korea. *Food Science of Animal Resources*, **2020**, 40: 221–230. <https://doi.org/10.5851/kosfa.2020.e6>
- [221] Han, J. M., Lim, H. N., Jung, H. J. *Hovenia dulcis* Thunb. and its active compound ampelopsin inhibit angiogenesis through suppression of VEGFR2 signaling and HIF-1 α expression. *Oncology Reports*, **2017**, 38: 3430–3438. <https://doi.org/10.3892/or.2017.6021>
- [222] Kim, K. Composition comprising *Hovenia dulcis* Thunb. extract, *Lindera obtusiloba* Blume extract, or herbal mixture extract thereof, **2009**. Retrieved from: <https://patents.google.com/patent/US7846484>. Accessed August 21, 2023.
- [223] Nardi, G. M., Farias Januario, A. G., Freire, C. G., et al. Anti-inflammatory activity of berry fruits in mice model of inflammation is based on oxidative stress modulation. *Pharmacognosy Research*, **2016**, 8: S42–49. <https://doi.org/10.4103/0974-8490.178642>
- [224] Mocan, A., Vlase, L., Vodnar, D. C., et al. Antioxidant, antimicrobial effects and phenolic profile of *Lycium barbarum* L. flowers. *Molecules*, **2015**, 20: 15060–15071. <https://doi.org/10.3390/molecules200815060>
- [225] Gong, G., Liu, Q., Deng, Y., et al. Arabinogalactan derived from *Lycium barbarum* fruit inhibits cancer cell growth via cell cycle arrest and apoptosis. *International Journal of Biological Macromolecules*, **2020**, 149: 639–650. <https://doi.org/10.1016/j.ijbiomac.2020.01.251>
- [226] All Things Health. Barbary Wolfberry Fruit (Goji Berry). Retrieved from: <https://www.allthingshealth.com/en-us/glossary/goji-berry/>. Accessed August 21, 2023.
- [227] Wang, B., Liao, P. P., Liu, L. H., et al. Baicalin and geniposide inhibit the development of atherosclerosis by increasing Wnt1 and inhibiting dickkopf-related protein-1 expression. *Journal of Geriatric Cardiology*, **2016**, 13: 846–854. <https://doi.org/10.11909/j.issn.1671-5411.2016.10.013>
- [228] Chang, C. H., Teng, P. Y., Lee, T. T., et al. Effects of multi-strain probiotics combined with *Gardeniae fructus* on intestinal microbiota, metabolites, and morphology in broilers. *The Journal of Poultry Science*, **2019**, 56: 32–43. <https://doi.org/10.2141/jpsa.0170179>
- [229] Im, M., Kim, A., Ma, J. Y. Ethanol extract of baked *Gardeniae Fructus* exhibits *in vitro* and *in vivo* anti-metastatic and anti-angiogenic activities in malignant cancer cells: role of suppression of the NF- κ B and HIF-1 α pathways. *International Journal of Oncology*, **2016**, 49: 2377–2386. <https://doi.org/10.3892/ijo.2016.3742>
- [230] Zhao, D. Herbal tea, **2016**. Retrieved from: <https://patents.google.com/patent/CN105767382A/en>. Accessed August 21, 2023.
- [231] Fan, Y., Nguyen, T. V., Piao, C. H., et al. Fructus Amomi extract attenuates nasal inflammation by restoring Th1/Th2 balance and down-regulation of NF- κ B phosphorylation in OVA-induced allergic rhinitis. *Bioscience Reports*, **2022**, 42: BSR20212681. <https://doi.org/10.1042/BSR20212681>
- [232] Suo, S., Lai, Y., Li, M., et al. Phytochemicals, pharmacology, clinical application, patents, and products of *Amomi fructus*. *Food and Chemical Toxicology*, **2018**, 119: 31–36. <https://doi.org/10.1016/j.fct.2018.05.051>
- [233] Yue, J., Zhang, S., Zheng, B., et al. Efficacy and mechanism of active fractions in fruit of *Amomum villosum* Lour. for gastric cancer. *Journal of Cancer*, **2021**, 12: 5991–5998. <https://doi.org/10.7150/jca.61310>
- [234] Tang, C. L., Yang, D. P., Chen, J. L., et al. Geographical origin discrimination of *Amomi fructus* using an ultra-performance liquid chromatography-quadrupole time-of-flight mass spectrometry-based metabolomics approach combined with antioxidant activity analysis. *Pharmacognosy Magazine*, **2021**, 75: 492–498. https://doi.org/10.4103/pm.pm_59_20
- [235] Lv, S. M., Zhang, M. Q., Chen, J. S., et al. Study on the anti-hyperuricemic bioactivity and chemical components of *Sterculiae lychnophorae Semen*. *Journal of Functional Foods*, **2022**, 95: 105173. <https://doi.org/10.1016/j.jff.2022.105173>
- [236] Yang, Y., Park, B. I., Hwang, E. H., et al. Composition analysis and inhibitory effect of *Sterculia lychnophora* against biofilm formation by *Streptococcus mutans*. *Evidence-based Complementary and Alternative Medicine*, **2016**, 2016: 8163150. <https://doi.org/10.1155/2016/8163150>
- [237] Oppong, M. B., Li, Y., Banahene, P. O., et al. Ethnopharmacology, phytochemistry, and pharmacology of *Sterculia lychnophora* Hance (Pangdahai). *Chinese Journal of Natural Medicines*, **2018**, 16: 721–731. [https://doi.org/10.1016/S1875-5364\(18\)30112-2](https://doi.org/10.1016/S1875-5364(18)30112-2)
- [238] What to Cook Today. How to make Pang Da Ha Cheng Tng, **2023**.
- [239] Giner-Larza, E. M., Mániz, S., Giner-Pons, R. M., et al. On the anti-inflammatory and anti-phospholipase A(2) activity of extracts from lanostane-rich species. *Journal of Ethnopharmacology*, **2000**, 73: 61–69. [https://doi.org/10.1016/S0378-8741\(00\)00276-2](https://doi.org/10.1016/S0378-8741(00)00276-2)
- [240] Zhang, L., Ravipati, A. S., Koyyalamudi, S. R., et al. Anti-fungal and anti-bacterial activities of ethanol extracts of selected traditional Chinese medicinal herbs. *Asian Pacific Journal of Tropical Medicine*, **2013**, 6: 673–681. [https://doi.org/10.1016/S1995-7645\(13\)60117-0](https://doi.org/10.1016/S1995-7645(13)60117-0)
- [241] Jiang, Y., Fan, L. The effect of *Poria cocos* ethanol extract on the intestinal barrier function and intestinal microbiota in mice with breast cancer. *Journal of Ethnopharmacology*, **2021**, 266: 113456. <https://doi.org/10.1016/j.jep.2020.113456>
- [242] Herbal Nutrition. Poria (China Root/Fu Ling): About, Benefits & Uses, 2023. Retrieved from: <https://vitaherbalnutrition.com/blogs/recipes/poria-china-root-fu-ling-about-benefits-uses>. Accessed August 21, 2023.
- [243] Wang, Y., Jia, Q., Zhang, Y., et al. Taoren Honghua Drug Attenuates Atherosclerosis and Plays an Anti-Inflammatory Role in ApoE Knock-Out Mice and RAW264.7 Cells. *Front Pharmacol*, **2020**, 11: 1070. <https://doi.org/10.3389/fphar.2020.01070>
- [244] Mosa, W. F. A., El-Shehawi, A. M., Mackled, M. I., et al. Productivity performance of peach trees, insecticidal and antibacterial bioactivities of leaf extracts as affected by nanofertilizers foliar application. *Scientific Reports*, **2021**, 11: 10205. <https://doi.org/10.1038/s41598-021-89885-y>

- [245] Kwon, H. Y., Hong, S. P., Hahn, D. H., et al. Apoptosis induction of Persicae Semen extract in human promyelocytic leukemia (HL-60) cells. *Archives of Pharmacol Research*, **2003**, 26: 157–161. <https://doi.org/10.1007/BF02976663>
- [246] TastingTable. Why You Need to Stop Throwing Out Peach Pits, 2022. Retrieved from: <https://www.tastingtable.com/986591/why-you-need-to-stop-throwing-out-peach-pits/>. Accessed August 21, 2023.
- [247] Yoshizaki, N., Fujii, T., Masaki, H., et al. Orange peel extract, containing high levels of polymethoxyflavonoid, suppressed UVB-induced COX-2 expression and PGE2 production in HaCaT cells through PPAR- γ activation. *Experimental Dermatology*, **2014**, 23: 18–22. <https://doi.org/10.1111/exd.12394>
- [248] Hasan, M. M., Roy, P., Alam, M., et al. Antimicrobial activity of peels and physicochemical properties of juice prepared from indigenous citrus fruits of Sylhet region, Bangladesh. *Heliyon*, **2022**, 8: e09948. <https://doi.org/10.1016/j.heliyon.2022.e09948>
- [249] Wang, J., Gao, J., Xu, H. L., et al. Citrus fruit intake and lung cancer risk: a meta-analysis of observational studies. *Pharmacological Research*, **2021**, 166: 105430. <https://doi.org/10.1016/j.phrs.2021.105430>
- [250] Patil Jaiprakash, R., Jayaprakasha, G. K., Chidambara Murthy, K. N., et al. Apoptosis-mediated proliferation inhibition of human colon cancer cells by volatile principles of *Citrus aurantifolia*. *Food Chemistry*, **2009**, 114: 1351–1358. <https://doi.org/10.1016/j.foodchem.2008.11.033>
- [251] Kong, J., Fang, R., Yang, X., et al. Explore the molecular mechanism of Moslae Herba's antiinflammatory based on network pharmacology. *Conference Series: Earth Environmental Science*, **2021**, 632: 052011. <https://doi.org/10.1088/1755-1315/632/5/052011>
- [252] Li, J. E., Nie, S. P., Qiu, Z. H., et al. Antimicrobial and antioxidant activities of the essential oil from Herba Moslae. *Journal of the Science of Food and Agriculture*, **2010**, 90: 1347–1352. <https://doi.org/10.1002/jsfa.3941>
- [253] Nanjing Didao Agriculture Technology Co. Ltd. Method for preparing total flavonoids of Chinese mosla herb and application of total flavonoids of Chinese mosla herb. 2021.
- [254] He, J., Peng, L., Li, W., et al. Traditional knowledge of edible plants used as flavoring for fish-grilling in Southeast Guizhou, China. *Journal of Ethnobiology and Ethnomedicine*, **2022**, 18: 19. <https://doi.org/10.1186/s13002-022-00519-7>
- [255] Wei, Y., Gao, C., Wang, H., et al. Mori fructus aqueous extracts attenuates liver injury by inhibiting ferroptosis via the Nrf2 pathway. *Journal of Animal Science and Biotechnology*, **2023**, 14: 56. <https://doi.org/10.1186/s40104-023-00845-0>
- [256] Wang, F., Li, J. R., Jiang, Y. Polysaccharides from mulberry leaf in relation to their antioxidant activity and antibacterial ability. *Journal of Food Process Engineering*, **2010**, 33: 39–50. <https://doi.org/10.1111/j.1745-4530.2008.00258.x>
- [257] Deepa, M., Sureshkumar, T., Satheeshkumar, P. K., et al. Purified mulberry leaf lectin (MLL) induces apoptosis and cell cycle arrest in human breast cancer and colon cancer cells. *Chemico-Biological Interactions*, **2012**, 200: 38–44. <https://doi.org/10.1016/j.cbi.2012.08.025>
- [258] Bjarnadottir, A. Mulberries 101: Nutrition Facts and Health Benefits, 2019. Retrieved from: <https://www.healthline.com/nutrition/foods/mulberries>. Accessed August 22, 2023.
- [259] Wu, Y., Jiang, H., Chen, G., et al. Preventive effect of Gonggan (*Citrus reticulata* Blanco var. Gonggan) peel extract on ethanol/HCl-induced gastric injury in mice via an anti-oxidative mechanism. *Frontiers in Pharmacology*, **2021**, 12: 715306. <https://doi.org/10.3389/fphar.2021.715306>
- [260] Sreepian, A., Popruk, S., Nutalai, D., et al. Antibacterial activities and synergistic interaction of citrus essential oils and limonene with gentamicin against clinically isolated methicillin-resistant *Staphylococcus aureus*. *Scientific World Journal*, **2022**, 2022: 8418287. <https://doi.org/10.1155/2022/8418287>
- [261] Wang, Y., Qian, J., Cao, J., et al. Antioxidant capacity, anticancer ability and flavonoids composition of 35 citrus (*Citrus reticulata* Blanco) varieties. *Molecules*, **2017**, 22: 1114. <https://doi.org/10.3390/molecules22071114>
- [262] Wang, J., Shi, J., Zhu, Y., et al. Insights into crucial odourants dominating the characteristic flavour of citrus-white teas prepared from *Citrus reticulata* Blanco 'Chachiensis' and *Camellia sinensis* 'Fudingdabai'. *Food Chemistry*, **2022**, 377: 132048. <https://doi.org/10.1016/j.foodchem.2022.132048>
- [263] Liu, Y., Hong, Z., Qian, J., et al. Protective effect of Jie-Geng-Tang against *Staphylococcus aureus* induced acute lung injury in mice and discovery of its effective constituents. *Journal of Ethnopharmacology*, **2019**, 243: 112076. <https://doi.org/10.1016/j.jep.2019.112076>
- [264] Tang, Z. H., Li, T., Gao, H. W., et al. Platycodin D from Platycodonis Radix enhances the anti-proliferative effects of doxorubicin on breast cancer MCF-7 and MDA-MB-231 cells. *Chinese Medicine*, **2014**, 9: 16. <https://doi.org/10.1186/1749-8546-9-16>
- [265] All Things Health. Platycodon Grandiflorus (Jie Geng), 2023. Retrieved from: <https://www.allthingshealth.com/en-us/glossary/platycodon-grandiflorus-jie-geng/>. Accessed August 22, 2023.
- [266] Wang, Y., Wang, M., Xu, M., et al. Nootkatone, a neuroprotective agent from *Alpiniae Oxyphyllae* Fructus, improves cognitive impairment in lipopolysaccharide-induced mouse model of Alzheimer's disease. *International Immunopharmacology*, **2018**, 62: 77–85. <https://doi.org/10.1016/j.intimp.2018.06.042>
- [267] Chen, W. X., Wang, D. Chemical composition, antibacterial activity and mechanism of action of oil and phenolics from AOF (*Alpinia oxyphylla* Miq.). *Asian Journal of Chemistry*, **2014**, 26: 7177–7183. <https://doi.org/10.14233/ajchem.2014.16546>
- [268] Zhang, Q., Cui, C., Chen, C. Q., et al. Anti-proliferative and pro-apoptotic activities of *Alpinia oxyphylla* on HepG2 cells through ROS-mediated signaling pathway. *Journal of Ethnopharmacology*, **2015**, 169: 99–108. <https://doi.org/10.1016/j.jep.2015.03.073>
- [269] Zheng, Y. Sobering-up tea, 1993. Retrieved from: <https://patents.google.com/patent/CN1102581A/en>. Accessed August 22, 2023.
- [270] Park, E., Kim, G. D., Go, M. S., et al. Anti-inflammatory effects of *Nelumbo* leaf extracts and identification of their metabolites. *Nutrition Research and Practice*, **2017**, 11: 265–274. <https://doi.org/10.4162/nrp.2017.11.4.265>
- [271] Thongpichai, W., Pongkittiphan, V., Laorpaksa, A., et al. Antimicrobial activity against foodborne pathogens and antioxidant activity of plant leaves traditionally used as food packaging. *Foods*, **2023**, 12: 2409. <https://doi.org/10.3390/foods12122409>
- [272] Teng, H., Fan, X., Lü, Q., et al. *Folium nelumbinis* (lotus leaf) volatile-rich fraction and its mechanisms of action against melanogenesis in B16 cells. *Food Chemistry*, **2020**, 330: 127030. <https://doi.org/10.1016/j.foodchem.2020.127030>
- [273] Guangzhou Yuxiao Biological Products Co., Ltd. Folium Nelumbinis tea bran shampoo and preparation method thereof, 2013. Retrieved from: <https://patents.google.com/patent/CN103550130B/en>. Accessed August 22, 2023.
- [274] Duan, L. X., Feng, B. M., Wang, W., et al. Thioglucosides from the seeds of *Raphanus sativus* L. *Helvetica. Chimica Acta*, **2006**, 89: 2953–2957. <https://doi.org/10.1002/hlca.200690264>
- [275] Khan, N. A., Waheed, F. S., Hamid, N., et al. Phytochemical screening and antibacterial assay of radish seed oil on selected pathogenic bacterial species *in vitro*. *Pakistan Journal of Agricultural Research*, **2018**, 32: 46–51. <https://doi.org/10.17582/journal.pjar/2019/32.1.46.51>
- [276] Kim, K. H., Moon, E., Kim, S. Y., et al. 4-Methylthio-butanyl derivatives from the seeds of *Raphanus sativus* and their biological evaluation on anti-inflammatory and antitumor activities. *Journal of Ethnopharmacology*, **2014**, 151: 503–508. <https://doi.org/10.1016/j.jep.2013.11.003>
- [277] Chien, M. Y., Yang, C. M., Huang, C. M., et al. Monitoring of toxic heavy metals contamination in commonly used Chinese materia

- medica. *SN Applied Science*, **2020**, 2: 1432. <https://doi.org/10.1007/s42452-020-03227-7>
- [278] Moon, S. W., Ahn, C. B., Oh, Y., et al. Lotus (*Nelumbo nucifera*) seed protein isolate exerts anti-inflammatory and antioxidant effects in LPS-stimulated RAW 264.7 macrophages via inhibiting NF- κ B and MAPK pathways, and upregulating catalase activity. *International Journal of Biological Macromolecules*, **2019**, 134: 791–797. <https://doi.org/10.1016/j.ijbiomac.2019.05.094>
- [279] Demirkol, G. Antibacterial activity of the seeds, roots and shoots of lotus populations. *Legume Research*, **2018**, 41: 778–783. <https://doi.org/10.18805/LR-408>
- [280] Zhao, X., Feng, X., Wang, C., et al. Anticancer activity of *Nelumbo nucifera* stamen extract in human colon cancer HCT-116 cells *in vitro*. *Oncology Letters*, **2017**, 13: 1470–1478. <https://doi.org/10.3892/ol.2016.5547>
- [281] Prosker, J. Scared plants. Lotus Seeds: A Nutritious Snack Or Addition To Meals. Retrieved from: <https://sacredsmokeherbals.com/lotus-seeds-a-nutritious-snack-or-addition-to-meals/>. Accessed August 22, 2023.
- [282] Nair, A. S., Paliwal, A. Systems pharmacology and molecular docking strategies prioritize natural molecules as anti-inflammatory agents. *Inflammation and Natural Products*, **2021**: 283–319. <https://doi.org/10.1016/B978-0-12-819218-4.00016-X>
- [283] Huang, H., Wu, D., Tian, W. X., et al. Antimicrobial effect by extracts of rhizome of *Alpinia officinarum* Hance may relate to its inhibition of beta-ketoacyl-ACP reductase. *Journal of Enzyme Inhibition and Medicinal Chemistry*, **2008**, 23: 362–368. <https://doi.org/10.1080/14756360701622099>
- [284] Yadav, R., Das, J., Lalhlenmawia, H., et al. Targeting cancer using phytoconstituents-based drug delivery. *Advanced Drug Delivery Systems in the Management of Cancer*, **2021**: 499–508. <https://doi.org/10.1016/B978-0-323-85503-7.00033-X>
- [285] Li, C., Wu, F., Yuan, W., et al. Systematic review of herbal tea (a traditional Chinese treatment method) in the therapy of chronic simple pharyngitis and preliminary exploration about its medication rules. *Evidence-based Complementary and Alternative Medicine*, **2019**, 2019: 9458676. <https://doi.org/10.1155/2019/9458676>
- [286] Diaz, P., Jeong, S. C., Lee, S., et al. Antioxidant and anti-inflammatory activities of selected medicinal plants and fungi containing phenolic and flavonoid compounds. *Chinese Medicine*, **2012**, 7: 26. <https://doi.org/10.1186/1749-8546-7-26>
- [287] Wang, L., Guo, H., Wang, J., et al. Effects of herba Lophatheri extract on the physicochemical properties and biological activities of the chitosan film. *International Journal of Biological Macromolecules*, **2019**, 133: 51–57. <https://doi.org/10.1016/j.ijbiomac.2019.04.067>
- [288] Kim, A., Im, M., Gu, M. J., et al. Ethanol extract of Lophatheri Herba exhibits anti-cancer activity in human cancer cells by suppression of metastatic and angiogenic potential. *Scientific Reports*, **2016**, 6: 36277. <https://doi.org/10.1038/srep36277>
- [289] Qin, Y. Common lophatherum herb extract natural food preservative and preparation method thereof, 2011. Retrieved from: <https://patents.google.com/patent/CN102273715B/en>. Accessed August 22, 2023.
- [290] Yang, Q., Tian, L., Li, S., et al. Semen Sojae Praeparatum improves anxiety in mice by inhibiting HPA axis hyperactivity and modulating gut microbiota. *Journal of Functional Foods*, **2022**, 98: 105282. <https://doi.org/10.1016/j.jff.2022.105282>
- [291] Xie, J., Wang, Y., Zhong, R., et al. Quality evaluation of *Sojae Semen Praeparatum* by HPLC combined with HS-GC-MS. *Heliyon*, **2023**, 9: e18767. <https://doi.org/10.1016/j.heliyon.2023.e18767>
- [292] Nishitani, Y., Yamamoto, K., Yoshida, M., et al. Intestinal anti-inflammatory activity of luteolin: role of the aglycone in NF- κ B inactivation in macrophages co-cultured with intestinal epithelial cells. *Biofactors*, **2013**, 39: 522–533. <https://doi.org/10.1002/biof.1091>
- [293] Jing, C. L., Huang, R. H., Su, Y., et al. Variation in chemical composition and biological activities of *Flos Chrysanthemi indic* essential oil under different extraction methods. *Biomolecules*, **2019**, 9: 518. <https://doi.org/10.3390/biom9100518>
- [294] Hodaie, M., Rahimmalek, M., Behbahani, M. Anticancer drug discovery from Iranian *Chrysanthemum cultivars* through system pharmacology exploration and experimental validation. *Scientific Reports*, **2021**, 11: 11767. <https://doi.org/10.1038/s41598-021-91010-y>
- [295] Zhu, Y., Chen, P., Liao, C., et al. Chrysanthemum flower formula granules, and preparation method and quality control method thereof, 2013. Retrieved from: <https://patents.google.com/patent/CN103405486A/en>. Accessed August 22, 2023.
- [296] Rizvi, W., Fayazuddin, M., Shariq, S., et al. Anti-inflammatory activity of roots of *Cichorium intybus* due to its inhibitory effect on various cytokines and antioxidant activity. *Ancient Science of Life*, **2014**, 34: 44–49. <https://doi.org/10.4103/0257-7941.150780>
- [297] Häkkinen, S. T., Soković, M., Nohynek, L., et al. Chicory extracts and sesquiterpene lactones show potent activity against bacterial and fungal pathogens. *Pharmaceuticals (Basel)*, **2021**, 14: 941. <https://doi.org/10.3390/ph14090941>
- [298] Pouille, C. L., Ouaza, S., Roels, E., et al. Chicory: understanding the effects and effectors of this functional food. *Nutrients*, **2022**, 14: 957. <https://doi.org/10.3390/nu14050957>
- [299] Raninen, K., Lappi, J., Mykkänen, H., et al. Dietary fiber type reflects physiological functionality: comparison of grain fiber, inulin, and polydextrose. *Nutrition Review*, **2011**, 69: 9–21. <https://doi.org/10.1111/j.1753-4887.2010.00358.x>
- [300] Yang, R., Zhou, Q., Wen, C., et al. Mustard seed (*Sinapis Alba* Linn) attenuates imiquimod-induced psoriasiform inflammation of BALB/c mice. *The Journal of Dermatology*, **2013**, 40: 543–52. <https://doi.org/10.1111/1346-8138.12119>
- [301] Son, H. J., Song, K. B. Antimicrobial activity of flaxseed meal extract against *Escherichia coli* O157:H7 and *Staphylococcus aureus* inoculated on red mustard. *Journal of Microbiology and Biotechnology*, **2017**, 27: 67–71. <https://doi.org/10.4014/jmb.1607.07036>
- [302] Ahmed, A. G., Hussein, U. K., Ahmed, A. E., et al. Mustard seed (*Brassica nigra*) extract exhibits antiproliferative effect against human lung cancer cells through differential regulation of apoptosis, cell cycle, migration, and invasion. *Molecules*, **2020**, 25: 2069. <https://doi.org/10.3390/molecules25092069>
- [303] Hari Ghotra. Mustard Seeds (Sarson), 2023. Retrieved from: <https://www.harighotra.co.uk/cooking-guides/indian-cooking-ingredients/mustard-seeds-sarson-facts>. Accessed August 22, 2023.
- [304] Xian, Y. F., Lin, Z. X., Xu, X. Y., et al. Effect of Rhizoma Polygonati on 12-O-tetradecanoylphorbol-acetate-induced ear edema in mice. *Journal of Ethnopharmacology*, **2012**, 142: 851–856. <https://doi.org/10.1016/j.jep.2012.06.013>
- [305] Chen, B., Zhou, S., Zhan, Y., et al. Dioscin inhibits the invasion and migration of hepatocellular carcinoma HepG2 cells by reversing TGF- β 1-induced epithelial-mesenchymal transition. *Molecules (Basel, Switzerland)*, **2019**, 24: 2222. <https://doi.org/10.3390/molecules24122222>
- [306] Song, X. L., Wang, Z., Liang, H. B., et al. Dioscin induces gallbladder cancer apoptosis by inhibiting ROS-Mediated PI3K/AKT signaling. *International Journal of Biological Sciences*, **2017**, 13: 782–793. <https://doi.org/10.7150/ijbs.18732>
- [307] Shi, Y., Liu, J., Si, D., et al. Huangjing—from medicine to healthy food and diet. *Food Frontiers*, **2023**. <https://doi.org/10.1002/fft.231>
- [308] Huang, B. P., Lin, C. H., Chen, Y. C., et al. Anti-Inflammatory effects of perilla frutescens leaf extract on lipopolysaccharide-stimulated RAW 264.7 cells. *Preventive Nutrition and Food Science*, **2012**, 17: 109–115. <https://doi.org/10.3746/pnf.2012.17.2.109>
- [309] Ahmed, H. M., Al-Zubaidy, A. M. A. Exploring natural essential oil components and antibacterial activity of solvent extracts from twelve *Perilla frutescens* L. Genotypes. *Arabian Journal of*

- Chemistry, **2020**, 13: 7390–7402. <https://doi.org/10.1016/j.arabjc.2020.08.016>
- [310] Kwak, Y., Ju, J. Inhibitory activities of *Perilla frutescens* Britton leaf extract against the growth, migration, and adhesion of human cancer cells. *Nutrition Research and Practice*, **2015**, 9: 11–16. <https://doi.org/10.4162/nrp.2015.9.1.11>
- [311] My Chinese Recipes. Purple Perilla Taste Reviews and Cooking Tips, 2023. Retrieved from: <https://www.mychineserecipes.com/purple-perilla-taste-reviews-and-cooking-tips/>. Accessed August 22, 2023.
- [312] Yim, Y. K., Lee, H., Hong, K. E., et al. Anti-inflammatory and immune-regulatory effects of subcutaneous *Perillae Fructus* extract injections on OVA-induced asthma in mice. *Evidence-based Complementary and Alternative Medicine*, **2010**, 7: 79–86. <https://doi.org/10.1093/ecam/nem118>
- [313] Yamamoto, H., Ogawa, T. Antimicrobial activity of perilla seed polyphenols against oral pathogenic bacteria. *Bioscience, Biotechnology, and Biochemistry*, **2002**, 66: 921–924. <https://doi.org/10.1271/bbb.66.921>
- [314] Kim, C. L., Shin, Y. S., Choi, S. H., et al. Extracts of *Perilla frutescens* var. *Acuta* (Odash.) Kudo leaves have antitumor effects on breast cancer cells by suppressing YAP activity. *Evidence-based Complementary and Alternative Medicine*, **2021**, 2021: 5619761. <https://doi.org/10.1155/2021/5619761>
- [315] Zhang, Z., Cui, Y., Ouyang, H., et al. Radix *Pueraria lobata* polysaccharide relieved DSS-induced ulcerative colitis through modulating PI3K signaling. *Journal of Functional Foods*, **2023**, 104: 105514. <https://doi.org/10.1016/j.jff.2023.105514>
- [316] Gao, L., Xia, X., Shuai, Y., et al. Gut microbiota, a hidden protagonist of traditional Chinese medicine for acute ischemic stroke. *Frontiers in Pharmacology*, **2023**, 14: 1164150. <https://doi.org/10.3389/fphar.2023.1164150>
- [317] Li, Y., Zhang, C., Ma, X., et al. Identification of the potential mechanism of *Radix pueraria* in colon cancer based on network pharmacology. *Science Reports*, **2022**, 12: 3765. <https://doi.org/10.1038/s41598-022-07815-y>
- [318] Chang, H. J., Kim, Y. H., Kang, Y. H., et al. Antioxidant and antibacterial effects of medicinal plants and their stick-type medicinal concentrated beverages. *Food Science and Biotechnology*, **2020**, 29: 1413–1423. <https://doi.org/10.1007/s10068-020-00793-9>
- [319] Ruckmani, A., Meti, V., Vijayashree, R., et al. Anti-rheumatoid activity of ethanolic extract of *Sesamum indicum* seed extract in Freund's complete adjuvant induced arthritis in Wistar albino rats. *Journal of Traditional and Complementary Medicine*, **2017**, 8: 377–386. <https://doi.org/10.1016/j.jtcme.2017.06.003>
- [320] Aditya, V., Babitha, G. A., Prakash, S., et al. Evaluation of antibacterial efficacy of sesame seed on periodontal pathogens: an *in vitro* study. *Journal of Interdisciplinary Dentistry*, **2019**, 11: 44–47. https://doi.org/10.4103/jid.jid_62_19
- [321] Wu, M. S., Aquino, L. B. B., Barbaza, M. Y. U., et al. Anti-Inflammatory and anticancer properties of bioactive compounds from *Sesamum indicum* L.-a review. *Molecules*, **2019**, 24: 4426. <https://doi.org/10.3390/molecules24244426>
- [322] Guo W. Red House Spice. Black Sesame Paste, 2022. Retrieved from: <https://redhousespice.com/black-sesame-paste/>. Accessed August 28, 2023.
- [323] Yang, T., Sun, S., Wang, T., et al. Piperlonguminine is neuroprotective in experimental rat stroke. *International Immunopharmacology*, **2014**, 23: 447–451. <https://doi.org/10.1016/j.intimp.2014.09.016>
- [324] Abdallah, E. M., Abdalla, W. E. Black pepper fruit (*Piper nigrum* L.) as antibacterial agent: a mini-review. *Bacteriol Mycol Open Access*, **2018**, 6: 141–145. <https://doi.org/10.15406/jbmoa.2018.06.00192>
- [325] Majdalawieh, A. F., Massri, M., Nasrallah, G. K. A comprehensive review on the anti-cancer properties and mechanisms of action of sesamin, a lignan in sesame seeds (*Sesamum indicum*). *European Journal of Pharmacology*, **2017**, 815: 512–521. <https://doi.org/10.1016/j.ejphar.2017.10.020>
- [326] Meixner, M. Healthline. 11 Science-Backed Health Benefits of Black Pepper, 2019. Retrieved from: <https://www.healthline.com/nutrition/black-pepper-benefits>. Accessed August 28, 2023.
- [327] Kim, J. M., Lee, J. H., Lee, G. S., et al. Sophorae Flos extract inhibits RANKL-induced osteoclast differentiation by suppressing the NF- κ B/NFATc1 pathway in mouse bone marrow cells. *BMC Complementary Medicine and Therapies*, **2017**, 17: 164. <https://doi.org/10.1186/s12906-016-1550-x>
- [328] de Abreu Gonzaga, W., Weber, A. D., Giacomelli, S. R., et al. Composition and antibacterial activity of the essential oils from *Zanthoxylum rhoifolium*. *Planta Medica*, **2003**, 69: 773–775. <https://doi.org/10.1055/s-2003-42783>
- [329] Zhong, W., Yang, C., Zhang, Y., et al. The chemical profiling and anticancer potential of functional polysaccharides from Flos Sophorae Immaturus. *Molecules*, **2022**, 27: 5978. <https://doi.org/10.3390/molecules27185978>
- [330] Fan, L., Li, Y., Li, J. A beverage prepared from Flos Sophorae Immaturus and turbid juice, and its preparation method, **2018**. Retrieved from: <https://patents.google.com/patent/CN109430648B/en>. Accessed August 28, 2023.
- [331] Heo, J., Kim, M., Kim, J. H., et al. Effect of *Taraxaci Herba* on bone loss in an OVX-induced model through the regulation of osteoclast differentiation. *Nutrients*, **2022**, 14: 4354. <https://doi.org/10.3390/nu14204354>
- [332] Li, S., Chi, X., Bo, Y., et al. Study on the antibacterial activity of dandelion leaf tea. *IOP Conference Series: Earth Environmental Science*, **2021**, 705: 012010. <https://doi.org/10.1088/1755-1315/705/1/012010>
- [333] Ovadje, P., Ammar, S., Guerrero, J. A., et al. Dandelion root extract affects colorectal cancer proliferation and survival through the activation of multiple death signaling pathways. *Oncotarget*, **2016**, 7: 73080–73100. <https://doi.org/10.18632/oncotarget.11485>
- [334] Mount, Sinai. Dandelion, 2023. Retrieved from: <https://www.mountsinai.org/health-library/herb/dandelion>. Accessed August 28, 2023.
- [335] Borsato, D. M., Prudente, A. S., Döll-Boscardin, P. M., et al. Topical anti-inflammatory activity of a monofloral honey of *Mimosa scabrella* provided by *Melipona marginata* during winter in southern Brazil. *Journal of Medicinal Food*, **2014**, 17: 817–825. <https://doi.org/10.1089/jmf.2013.0024>
- [336] Chauhan, A., Pandey, V., Chacko, K. M., et al. Antibacterial activity of raw and processed honey. *Biotechnology Research International*, **2010**, 5: 58–66. <https://doi.org/10.4061/2011/917505>
- [337] Tomasin, R., Gomes-Marcondes, M. C. Oral administration of *Aloe vera* and honey reduces Walker tumour growth by decreasing cell proliferation and increasing apoptosis in tumour tissue. *Phytotherapy Research*, **2011**, 25: 619–623. <https://doi.org/10.1002/ptr.3293>
- [338] White, D. A. Food network's healthy eats, 2012. Cooking With Honey. Retrieved from: <https://www.foodnetwork.com/healthy-eats/recipes/2012/10/cooking-with-honey>. Accessed August 28, 2023.
- [339] Oh, J., Rho, H. S., Yang, Y., et al. Extracellular signal-regulated kinase is a direct target of the anti-inflammatory compound amentoflavone derived from *Torreya nucifera*. *Mediators of Inflammation*, **2013**, 2013: 761506. <https://doi.org/10.1155/2013/761506>
- [340] Jang, S. R., Kim, D. C. *In vitro* anti-bacterial and anti-inflammatory effects of six types of Herb Aqueous extracts. *The Journal of Korean Obstetrics and Gynecology*, **2014**, 27: 81–100. <https://doi.org/10.15204/jkobgy2014.27.1.081>
- [341] Duan, F., Jia, S., Yuan, K. Antitumor effects and mechanism of *n*-butanol fraction from aril of *Torreya grandis* in H22 mice. *Pharmacognosy Magazine*, **2017**, 13: 351–357. https://doi.org/10.4103/pm.pm_286_16
- [342] Chen, S., Chen, Y. A kind of production method of medicated tea, 1993. Retrieved from: <https://patents.google.com/patent/>

- CN1095952A/en. Accessed August 28, 2023.
- [343] Liu, H., Zhang, X., Liu, Y., et al. Semen Ziziphi Spinosae attenuates blood-brain barrier dysfunction induced by lipopolysaccharide by targeting the FAK-DOCK180-Rac1-WAVE2-Arp3 signaling pathway. *NPJ Science of Food*, **2022**, 6: 27. <https://doi.org/10.1038/s41538-022-00142-6>
- [344] Li, S., Zhang, F., Li, Y., et al. Prevention and cure effects of *Fructus mume* and *Semen ziziphi spinosae* extract against chicken colibacillosis. *Chinese Journal of Laboratory Animal Science*, **2010**, 6: 49–53.
- [345] Wang, Q. L., Yuan, B. X., Gao, Q. M., et al. Effects of jujube kernel oil on survival and body weight of mice with Ehrlich's ascites carcinoma. *Journal of Xi'an Jiaotong University (Medical Sciences)*, **1995**, 3: 295–297.
- [346] Zhang, H., Xiao, F., Li, J., et al. Immunomodulatory activity of semen Ziziphi Spinosae protein: a potential plant protein functional food raw material. *NPJ Science of Food*, **2023**, 7: 32. <https://doi.org/10.1038/s41538-023-00204-3>
- [347] Zou, W., Dong, Y., Yang, S., et al. Imperatae rhizoma-*Hedyotis diffusa* Willd. herbal pair alleviates nephrotic syndrome by integrating anti-inflammatory and hypolipidaemic effects. *Phytomedicine*, **2021**, 90: 153644. <https://doi.org/10.1016/j.phymed.2021.153644>
- [348] Koh, K. H., Tham, F. Y. Screening of traditional Chinese medicinal plants for quorum-sensing inhibitors activity. *Journal of Microbiology, Immunology and Infection*, **2011**, 44: 144–148. <https://doi.org/10.1016/j.jmii.2009.10.001>
- [349] Bao, Y. R., Wang, S., Meng, X. S., et al. Effect of flavonoids of Lalang Grass Rhizome water extract on cell cycle and apoptosis induction of human hepatoma cell line SMMC-7721. *Lishizhen Medicine and Materia Medica Research*, **2013**, 7: 1584–1586.
- [350] Jung, Y. K., Shin, D. *Imperata cylindrica*: a review of phytochemistry, pharmacology, and industrial applications. *Molecules*, **2021**, 26: 1454. <https://doi.org/10.3390/molecules26051454>
- [351] Park, S. J., Kim, Y. W., Park, M. K. Anti-inflammatory steroid from Phragmitis Rhizoma modulates LPS mediated signaling through inhibition of NF- κ B pathway. *Inflammation*, **2016**, 39: 727–734. <https://doi.org/10.1007/s10753-015-0299-6>
- [352] Qian, Z. G., Jiang, L. F. Preparation and antibacterial activity of the oligosaccharides derived from *Rhizoma phragmites*. *Carbohydrate Polymers*, **2014**, 111: 356–358. <https://doi.org/10.1016/j.carbpol.2014.04.043>
- [353] Deng, X. J., Ao, S. H. Inhibition of *Rhizoma phragmitis* polysaccharide on the proliferation of non-small cell lung cancer cells A549 by inducing autophagy and apoptosis. *Herald of Medicine (Chinese)*, **2020**, 39: 1041–1046. <https://doi.org/10.3870/j.issn.1004-0781.2020.08.002>
- [354] Silliman, B. R., Mozdzier, T., Angelini, C., et al. Livestock as a potential biological control agent for an invasive wetland plant. *PeerJ*, **2014**, 2: e567. <https://doi.org/10.7717/peerj.567>
- [355] Wang, Q. H., Li, W., Jiang, Y. X., et al. The extract from *Agkistrodon halys* venom protects against lipopolysaccharide (LPS)-induced myocardial injury. *BMC Complementary Medicine and Therapies*, **2019**, 19: 176. <https://doi.org/10.1186/s12906-019-2595-4>
- [356] Samy, R. P., Gopalakrishnakone, P., Chow, V. T., et al. Viper metalloproteinase (*Agkistrodon halys pallas*) with antimicrobial activity against multi-drug resistant human pathogens. *Journal of Cellular Physiology*, **2008**, 216: 54–68. <https://doi.org/10.1002/jcp.21373>
- [357] Ge, Y., Lu, L., Tian, S., et al. Agkistrodon halys venom antitumor component-I inhibits vasculogenic mimicry in triple-negative breast cancer cells *in vitro* by down-regulating MMP2. *Nan Fang Yi Ke Da Xue Xue Bao*, **2022**, 42: 438–442.
- [358] Ji, Z. Health care food using snail, ant and Pullas pit viper and raw material, 1995. Retrieved from: <https://patents.google.com/patent/CN1133174A/en>. Accessed August 28, 2023.
- [359] Ho, S. C., Kuo, C. T. Hesperidin, nobiletin, and tangeretin are collectively responsible for the anti-neuroinflammatory capacity of tangerine peel (*Citri reticulatae pericarpium*). *Food and Chemical Toxicology*, **2014**, 71: 176–182. <https://doi.org/10.1016/j.fct.2014.06.014>
- [360] Shetty, S. B., Mahin-Syed-Ismael, P., Varghese, S., et al. Antimicrobial effects of *Citrus sinensis* peel extracts against dental caries bacteria: an *in vitro* study. *Journal of Clinical and Experimental Dentistry*, **2016**, 8: e71–77. <https://doi.org/10.4317/jced.52493>
- [361] Hospital Pharmacy Europe. Hope for tangerine peel in cancer fight, 2007. Retrieved from: <https://hospitalpharmacyeurope.com/news/editors-pick/hope-for-tangerine-peel-in-cancer-fight/>. Accessed August 28, 2023.
- [362] Michelin, Guide. Ingredient: Dried Tangerine Peel, 2020. Retrieved from: <https://guide.michelin.com/mo/en/article/dining-in/ingredient-tangerine-peel>. Accessed August 28, 2023.
- [363] Hejna, M., Kovanda, L., Rossi, L., et al. Mint oils: *in vitro* ability to perform anti-inflammatory, antioxidant, and antimicrobial activities and to enhance intestinal barrier integrity. *Antioxidants (Basel)*, **2021**, 10: 1004. <https://doi.org/10.3390/antiox10071004>
- [364] McKay, D. L., Blumberg, J. B. A review of the bioactivity and potential health benefits of peppermint tea (*Mentha piperita* L.). *Phytotherapy Research: PTR*, **2006**, 20: 619–633. <https://doi.org/10.1002/ptr.1936>
- [365] Patti, F., Palmioli, A., Vitalini, S., et al. Anticancer effects of wild mountain *Mentha longifolia* extract in adrenocortical tumor cell models. *Frontiers in Pharmacology*, **2020**, 10: 1647. <https://doi.org/10.3389/fphar.2019.01647>
- [366] Food and Wine. 21 Recipes for Mint Lovers, 2022. Retrieved from: <https://www.foodandwine.com/seasonings/herbs/mint/mint>. Accessed August 28, 2023.
- [367] Zhou, Q., Liu, J., Xin, L., et al. Exploration of the oxidative-inflammatory potential targets of Coicis Semen in osteoarthritis: data mining and systematic pharmacology. *Biocell*, **2023**, 47: 1623–1643. <https://doi.org/10.32604/biocell.2023.028331>
- [368] Guo, M., Ding, S., Zhao, C., et al. Red ginseng and Semen Coicis can improve the structure of gut microbiota and relieve the symptoms of ulcerative colitis. *Journal of Ethnopharmacology*, **2015**, 162: 7–13. <https://doi.org/10.1016/j.jep.2014.12.029>
- [369] Chang, C. C., Huang, L. H., Chiang, W., et al. Hexane fraction of adlay (*Coix lachryma-jobi* L.) testa ethanolic extract inhibits human uterine sarcoma cancer cells growth and chemosensitizes human uterine sarcoma cells to doxorubicin. *Phytomedicine*, **2018**, 47: 69–80. <https://doi.org/10.1016/j.phymed.2018.03.056>
- [370] Zhou, Y., Wu, M. H., Luo, S. M., et al. Historical evolution of Coicis Semen processing methods. *Zhongguo Zhong Yao Za Zhi*, **2020**, 45: 2694–2701.
- [371] El-Hashim, A. Z., Khajah, M. A., Orabi, K. Y., et al. Onion bulb extract downregulates EGFR/ERK1/2/AKT signaling pathway and synergizes with steroids to inhibit allergic inflammation. *Frontiers in Pharmacology*, **2020**, 11: 551683. <https://doi.org/10.3389/fphar.2020.551683>
- [372] Zhang, C. J., Liu, C., Jiang, X. K. Antibacterial effect of ethanol extract from *Allium macrostemon* Bunge bulbs. *Food Science*, **2011**, 32: 119–122.
- [373] Baba, M., Ohmura, M., Kishi, N., et al. Saponins isolated from *Allium chinense* G. Don and antitumor-promoting activities of isoliquiritigenin and laxogenin from the same drug. *Biological & Pharmaceutical Bulletin*, **2000**, 23: 660–662. <https://doi.org/10.1248/bpb.23.660>
- [374] Bamba, B. S. B., Komenan, A. C. A., Kouassi, K. K. P., et al. Effects of onion bulb processing conditions on drying characteristics, physicochemical and functional properties profile of onion (*Allium cepa* L.) powder. *Journal of Food Science*, **2020**, 85: 3345–3354. <https://doi.org/10.1111/1750-3841.15415>
- [375] Liu, Z., Mi, Z., Han, N., et al. Diterpenoid glucosides with anti-inflammatory activity from Rubi Fructus. *Fitoterapia*, **2023**, 164:

105325. <https://doi.org/10.1016/j.fitote.2022.105325>
- [376] Loo, W. T., Jin, L., Cheung, M. N., et al. Evaluation of ellagic acid on the activities of oral bacteria with the use of adenosine triphosphate (ATP) bioluminescence assay. *African Journal of Biotechnology*, **2010**, 9: 3938–3945.
- [377] Chen, C., Liu, Y., Shen, Y., et al. Rosmarinic acid, the active component of Rubi Fructus, induces apoptosis of SGC-7901 and HepG2 cells through mitochondrial pathway and exerts anti-tumor effect. *Naunyn-Schmiedeberg's Archives of Pharmacology*, **2023**, 396: 3743–3755. <https://doi.org/10.1007/s00210-023-02552-z>
- [378] Jeong, S. J., Kim, O. S., Yoo, S. R., et al. Anti-inflammatory and antioxidant activity of the traditional herbal formula Gwakhyangjeonggi-san via enhancement of heme oxygenase-1 expression in RAW264. 7 macrophages. *Molecular Medicine Reports*, **2016**, 13: 4365–4371. <https://doi.org/10.3892/mmr.2016.5084>
- [379] Gong, Y., He, L., Li, S., et al. Antimicrobial, antibiofilm and antitumor activities of essential oil of *Agastache rugosa* from Xinjiang, China. *Saudi Journal of Biological Sciences*, **2016**, 23: 524–530. <https://doi.org/10.1016/j.sjbs.2016.02.020>
- [380] Lashkari, A., Najafi, F., Kavosi, G., et al. Evaluating the *in vitro* anti-cancer potential of estragole from the essential oil of *Agastache foeniculum* [Pursh.] Kuntze. *Biocatalysis and Agricultural Biotechnology*, **2020**, 27: 101727. <https://doi.org/10.1016/j.bcab.2020.101727>
- [381] Gardenia. *Agastache rugosa* (Korean Mint), 2023. Retrieved from: <https://www.gardenia.net/plant/agastache-rugosa>. Accessed August 28, 2023.
- [382] Hu, H., Hang, B., Wang, P. Anti-inflammatory effect of radix *Angelicae sinensis*. *Zhongguo Zhong Yao Za Zhi*, **1991**, 16: 684–686.
- [383] Wang, Z. X., Shen, Y. Q., Chen, Y. J., et al. Study on the active components of *Angelicae pubescentis* Maxim. *Journal of Shenyang College of Pharmacy*, **1988**, 5: 183–188.
- [384] Liao, K. F., Chiu, T. L., Huang, S. Y., et al. Anti-Cancer effects of Radix *Angelica Sinensis* (Danggui) and *n*-butyridenephthalide on gastric cancer: implications for REDD1 activation and mTOR inhibition. *Cellular Physiology and Biochemistry*, **2018**, 48: 2231–2246. <https://doi.org/10.1159/000492641>
- [385] Zhan, J. Y., Zhang, W. L., Zheng, K. Y., et al. Chemical changes of *Angelicae Sinensis* Radix and Chuanxiong Rhizoma by wine treatment: chemical profiling and marker selection by gas chromatography coupled with triple quadrupole mass spectrometry. *Chinese Medicine*, **2013**, 8: 12. <https://doi.org/10.1186/1749-8546-8-12>
- [386] Zhou, Y. J., Wang, H., Li, L., et al. Inhibitory effect of kaempferol on inflammatory response of lipopolysaccharide-stimulated human mast cells. *Yao Xue Xue Bao*, **2015**, 50: 702–7.
- [387] Kabir, S. R., Reza, M. A. Antibacterial activity of *Kaempferia rotunda* Rhizome lectin and its induction of apoptosis in Ehrlich ascites carcinoma cells. *Applied Biochemistry and Biotechnology*, **2014**, 172: 2866–2876. <https://doi.org/10.1007/s12010-013-0720-2>
- [388] Xiao, Y., Wei, P. K., Li, J., et al. Effects of *Rhizoma kaempferiae* volatile oil on tumor growth and cell cycle of MKN-45 human gastric cancer cells orthotopically transplanted in nude mice. *Zhong Xi Yi Jie He Xue Bao*, **2006**, 4: 384–387.
- [389] Flora & Fauna Web. *Kaempferia galanga*, 2023. Retrieved from: <https://www.nparks.gov.sg/florafaunaweb/flora/2/1/2164>. Accessed August 28, 2023.
- [390] Makaritsis, K. P., Kotidis, C., Papacharalampous, K., et al. Mechanistic insights on the effect of crocin, an active ingredient of saffron, on atherosclerosis in apolipoprotein E knockout mice. *Coronary Artery Disease*, **2022**, 33: 394–402. <https://doi.org/10.1097/MCA.0000000000001142>
- [391] Naim, N., Bouymajane, A., Oulad El Majdoub, Y., et al. Flavonoid composition and antibacterial properties of *Crocus sativus* L. petal extracts. *Molecules*, **2022**, 28: 186. <https://doi.org/10.3390/molecules28010186>
- [392] Shi, X. F., Yu, Q., Wang, K. B., et al. Active ingredients isorhamnetin of Croci Srigma inhibit stomach adenocarcinomas progression by MAPK/mTOR signaling pathway. *Scientific Reports*, **2023**, 13: 12607. <https://doi.org/10.1038/s41598-023-39627-z>
- [393] Hosseinzadeh, H., Younesi, H. M. Antinociceptive and anti-inflammatory effects of *Crocus sativus* L. stigma and petal extracts in mice. *BMC Pharmacology*, **2002**, 2: 7. <https://doi.org/10.1186/1471-2210-2-7>
- [394] Li, B., Choi, H. J., Lee, D. S. *Amomum tsao-ko* suppresses lipopolysaccharide-induced inflammatory responses in RAW 264.7 macrophages via Nrf2-dependent heme oxygenase-1 expression. *The American Journal of Chinese Medicine*, **2014**, 42: 1229–1244.
- [395] Rahman, M. R. T., Lou, Z., Yu, F. Anti-quorum sensing and antibiofilm activity of *Amomum tsaoko* (*Amomum tsao-ko* Crevost et Lemaire) on foodborne pathogens. *Saudi Journal of Biological Sciences*, **2017**, 24: 324–330. <https://doi.org/10.1016/j.sjbs.2015.09.034>
- [396] Lee, S., Lee, J. C., Subedi, L., et al. Bioactive compounds from the seeds of *Amomum tsaoko* Crevost et Lemaire, a Chinese spice as inhibitors of sphingosine kinases, SPHK1/2. *RSC Advances*, **2019**, 9: 33957–33968. <https://doi.org/10.1039/C9RA07988B>
- [397] Yang, S., Xue, Y., Chen, D., et al. *Amomum tsao-ko* Crevost & Lemarié: a comprehensive review on traditional uses, botany, phytochemistry, and pharmacology. *Phytochemical Society of Europe*, **2022**, 21: 1487–1521. <https://doi.org/10.1007/s11101-021-09793-x>
- [398] Tanikawa, T., Kitamura, M., Hayashi, Y., et al. Curcuma Longae Rhizoma and Saussureae Radix inhibit nitric oxide production and cannabinoid receptor 2 down-regulation. *In Vivo*, **2022**, 36: 227–232. <https://doi.org/10.21873/invivo.12695>
- [399] Huang, H. F., Zhen, C. J., Chen, G. Y., et al. Comparison of chemical composition and antibacterial activity between zedoary turmeric oil and dregs. *Chinese Journal of Experimental Traditional Medicine Formulae*, **2015**, 21: 67–71.
- [400] Zhong, Z. F., Tan, W., Qiang, W. W., et al. Furanodiene alters mitochondrial function in doxorubicin-resistant MCF-7 human breast cancer cells in an AMPK-dependent manner. *Molecular bioSystems*, **2016**, 12: 1626–1237. <https://doi.org/10.1039/c6mb00003g>
- [401] Ibáñez, M. D., Blázquez, M. A. *Curcuma longa* L. Rhizome essential oil from extraction to its agri-food applications. a review. *Plants (Basel)*, **2020**, 10: 44. <https://doi.org/10.3390/plants10010044>
- [402] Marui, N., Offermann, M. K., Swerlick, R., et al. Vascular cell adhesion molecule-1 (VCAM-1) gene transcription and expression are regulated through an antioxidant-sensitive mechanism in human vascular endothelial cells. *The Journal of Clinical Investigation*, **1993**, 92: 1866–1874. <https://doi.org/10.1172/JCI116778>
- [403] Reddy, P. S., Jamil, K., Madhusudhan, P., et al. Antibacterial activity of isolates from *Piper longum* and *Taxus baccata*. *Pharmaceutical Biology*, **2001**, 39: 236–238. <https://doi.org/10.1076/phbi.39.3.236.5926>
- [404] Yeon, H. S., Chae, J. K. Composition for treatment of pancreatic cancer and functional food comprising extract of *Piperis longi* fructus, **2012**. Retrieved from: <https://patents.google.com/patent/KR20130023176A/en>. Accessed August 28, 2023.
- [405] Bai, R. B., Zhang, Y. J., Fan, J. M., et al. Immune-enhancement effects of oligosaccharides from *Codonopsis pilosula* on cyclophosphamide induced immunosuppression in mice. *Food and Function*, **2020**, 11: 3306–3315. <https://doi.org/10.1039/C9FO02969A>
- [406] Bai, Z., Wang, H., Long, Y. Study on antibacterial activity of extracts of *Codonopsis pilosula*. *Liaoning Journal of Traditional Chinese Medicine*, **2015**, 42: 1290–1291.
- [407] Bai, R., Li, W., Li, Y., et al. Cytotoxicity of two water-soluble polysaccharides from *Codonopsis pilosula* Nannf. var. *modesta* (Nannf.) L.T. Shen against human hepatocellular carcinoma HepG2

- cells and its mechanism. *International Journal of Biological Macromolecules*, **2018**, 120: 1544–1550. <https://doi.org/10.1016/j.ijbiomac.2018.09.123>
- [408] Wang, S., Lin, Z., Zhang, B., et al. Data fusion of electronic noses and electronic tongues aids in botanical origin identification on imbalanced Codonopsis Radix samples. *Scientific Reports*, **2022**, 12: 19120. <https://doi.org/10.1038/s41598-022-23857-8>
- [409] Wang, H., Li, Y., Bian, Y., et al. Potential hepatoprotective effects of *Cistanche deserticola* Y.C. Ma: integrated phytochemical analysis using UPLC-Q-TOF-MS/MS, target network analysis, and experimental assessment. *Frontiers in Pharmacology*, **2022**, 13: 1018572. <https://doi.org/10.3389/fphar.2022.1018572>
- [410] Musa, A., El-Massry, K. F., El-Ghorab, A. H., et al. Volatile constituents of *Cistanche tubulosa* and their antioxidant and antimicrobial potentials. *Record of Natural Product*, **2021**, 15: 301–311. <https://doi.org/10.25135/rnp.220.20.11.1859>
- [411] Zhang, S. L., Liu, J. L., Gong, F. K., et al. Mechanism of Cistanches Herba in treatment of cancer-related fatigue based on network pharmacology and experimental verification. *Zhongguo Zhong Yao Za Zhi*, **2023**, 48: 1330–1342.
- [412] MagiHerb. Desertliving Cistanche Herb Extract, 2022. Retrieved from: <https://www.magiherb.com/new/detail/304>. Accessed August 28, 2023.
- [413] Lin, X., Shaw, P. C., Sze, S. W., et al. Dendrobium officinale polysaccharides ameliorate the abnormality of aquaporin 5, pro-inflammatory cytokines and inhibit apoptosis in the experimental Sjögren's syndrome mice. *International Immunopharmacology*, **2011**, 11: 2025–2032. <https://doi.org/10.1016/j.intimp.2011.08.014>
- [414] Zhang, W., Krohn, K., Egold, H., et al. Diversity of antimicrobial pyrenophorol derivatives from an endophytic fungus, *Phoma* sp. *European Journal of Organic Chemistry*, **2008**, 25: 4320–4328. <https://doi.org/10.1002/ejoc.200800404>
- [415] Wei, Y., Wang, L., Wang, D. Characterization and anti-tumor activity of a polysaccharide isolated from *Dendrobium officinale* grown in the Huoshan County. *Chinese Medicine*, **2018**, 13: 2018. <https://doi.org/10.1186/s13020-018-0205-x>
- [416] Tang, H., Zhao, T., Sheng, Y., et al. *Dendrobium officinale* Kimura et migo: a review on its ethnopharmacology, phytochemistry, pharmacology, and industrialization. *Evidence-based Complementary and Alternative Medicine*, **2017**, 2017: 7436259. <https://doi.org/10.1155/2017/7436259>
- [417] Xie, J. J., Chen, J., Guo, S. K., et al. Panax quinquefolium saponin inhibits endoplasmic reticulum stress-induced apoptosis and the associated inflammatory response in chondrocytes and attenuates the progression of osteoarthritis in rat. *Biomedicine & Pharmacotherapy*, **2018**, 97: 886–894. <https://doi.org/10.1016/j.biopha.2017.10.068>
- [418] Ahn, J. Y., Song, J. Y., Yun, Y. S., et al. Protection of *Staphylococcus aureus*-infected septic mice by suppression of early acute inflammation and enhanced antimicrobial activity by ginsan. *FEMS Immunology & Medical Microbiology*, **2006**, 46: 187–197. <https://doi.org/10.1111/j.1574-695X.2005.00021.x>
- [419] He, B. C., Gao, J. L., Luo, X., et al. Ginsenoside Rg3 inhibits colorectal tumor growth through the down-regulation of Wnt/ β -catenin signaling. *International Journal of Oncology*, **2011**, 38: 437–445. <https://doi.org/10.3892/ijo.2010.858>
- [420] Nunn, M. What Is American Ginseng? 2023. Retrieved from: <https://www.verywellhealth.com/american-ginseng-health-benefits-89218>. Accessed August 28, 2023.
- [421] Ryu, M., Kim, E. H., Chun, M., et al. Astragali Radix elicits anti-inflammation via activation of MKP-1, concomitant with attenuation of p38 and Erk. *Journal of Ethnopharmacology*, **2008**, 115: 184–193. <https://doi.org/10.1016/j.jep.2007.09.027>
- [422] Samuel, A. O., Huang, B. T., Chen, Y., et al. Antioxidant and antibacterial insights into the leaves, leaf tea and medicinal roots from *Astragalus membranaceus* (Fisch.) Bge. *Scientific Reports*, **2021**, 11: 19625. <https://doi.org/10.1038/s41598-021-97109-6>
- [423] Tasdemir, E., Maiuri, M. C., Galluzzi, L., et al. Regulation of autophagy by cytoplasmic p53. *Nature Cell Biology*, **2008**, 10: 676–687. <https://doi.org/10.1038/ncb1730>
- [424] Guo, J., Chen, Y., Hao, X. The industry development prospect of *Astragalus membranaceus* in north Xinjiang. *Xinjiang Agriculture Science and Technology*, **2018**, 240: 27–28.
- [425] Xu, J., Xiao, C., Xu, H., et al. Anti-inflammatory effects of *Ganoderma lucidum* sterols via attenuation of the p38 MAPK and NF- κ B pathways in LPS-induced RAW 264.7 macrophages. *Food and Chemical Toxicology*, **2021**, 150: 112073. <https://doi.org/10.1016/j.fct.2021.112073>
- [426] Yoon, S. Y., Eo, S. K., Kim, Y. S., et al. Antimicrobial activity of *Ganoderma lucidum* extract alone and in combination with some antibiotics. *Archives of Pharmacal Research*, **1994**, 17: 438–442. <https://doi.org/10.1007/BF02979122>
- [427] Sohretoglu, D., Huang, S. *Ganoderma lucidum* polysaccharides as an anti-cancer agent. *Anti-cancer Agents in Medicinal Chemistry*, **2018**, 18: 667–674. <https://doi.org/10.2174/187152061766617113121246>
- [428] Tang, J., Tang, L., Tang, X., et al. Preparation method of lucid ganoderma tea, **2014**. Retrieved from: <https://patents.google.com/patent/CN104381549A/en>. Accessed August 28, 2023.
- [429] Li, H. B., Feng, Q. M., Zhang, L. X., et al. Four new gallate derivatives from wine-processed Corni Fructus and their anti-inflammatory activities. *Molecules*, **2021**, 26: 1851. <https://doi.org/10.3390/molecules26071851>
- [430] Mau, J., Chen, C., Hsieh, P. Antimicrobial effect of extracts from Chinese chive, cinnamon, and Corni Fructus. *Journal of Agricultural and Food Chemistry*, **2001**, 49: 183–188. <https://doi.org/10.1021/jf000263c>
- [431] Choi, W. H., Chu, J. P., Jiang, M. H., et al. Effects of fraction obtained from Korean Corni Fructus extracts causing anti-proliferation and p53-dependent apoptosis in A549 lung cancer cells. *Nutrition and Cancer*, **2011**, 63: 121–129. <https://doi.org/10.1080/01635581.2010.516475>
- [432] Park, E., Lee, C. G., Jeong, H., et al. Antiadipogenic effects of mixtures of *Cornus officinalis* and *Ribes fasciculatum* extracts on 3T3-L1 preadipocytes and high-fat diet-induced mice. *Molecules*, **2020**, 25: 2350. <https://doi.org/10.3390/molecules25102350>
- [433] Chen, P. J., Sheen, L. Y. Gastrodiae Rhizoma (tiān má): a review of biological activity and antidepressant mechanisms. *Journal of Traditional and Complementary Medicine*, **2011**, 1: 31–40. [https://doi.org/10.1016/s2225-4110\(16\)30054-2](https://doi.org/10.1016/s2225-4110(16)30054-2)
- [434] Kong, F., Cai, X., Zhai, S., et al. Possible mechanisms of the antimicrobial effects of polypeptide-enriched *Gastrodia elata* Blume extracts. *Molecular Medicine Reports*, **2019**, 20: 4723–4730. <https://doi.org/10.3892/mmr.2019.10706>
- [435] Heo, J., Woo, S., Son, M., et al. Anti-tumor activity of *Gastrodia elata* Blume is closely associated with a GTP-Ras-dependent pathway. *Oncology Reports*, **2007**, 18: 849–853.
- [436] Hu, M., Yan, H., Fu, Y., et al. Optimal extraction study of gastrodin-type components from *Gastrodia Elata* tubers by response surface design with integrated phytochemical and bioactivity evaluation. *Molecules*, **2019**, 24: 547. <https://doi.org/10.3390/molecules24030547>
- [437] Kim, B. H., Park, K. S., Chang, I. M. Elucidation of anti-inflammatory potencies of *Eucommia ulmoides* bark and *Plantago asiatica* seeds. *Journal of Medicinal Food*, **2009**, 12: 764–769. <https://doi.org/10.1089/jmf.2008.1239>
- [438] Yeh, Y. C., Doan, L. H., Huang, Z. Y., et al. Honeysuckle (*Lonicera japonica*) and Huangqi (*Astragalus membranaceus*) Suppress SARS-CoV-2 Entry and COVID-19 Related Cytokine Storm in Vitro. *Front Pharmacol*, **2022**, 12: 765553. <https://doi.org/10.3389/fphar.2021.765553>
- [439] Yan, Z. Q., Ding, S. Y., Chen, P., et al. A water-soluble polysaccharide from *Eucommia folium*: the structural characterization and anti-tumor activity in vivo. *Glycoconjugate Journal*, **2022**, 39: 759–772. <https://doi.org/10.1007/s10719-022-10086-4>

- [440] Ji, J., Zhu, J., Ma, X. Method for prepn. of eucommia bark black tea and green tablet of eucommia bark, 1996. Retrieved from: <https://patents.google.com/patent/CN1056039C/en>. Accessed August 28, 2023.
- [441] Essa, M. M., Bishir, M., Bhat, A., et al. Functional foods and their impact on health. *Journal of Food Science and Technology*, **2023**, 60: 820–834. <https://doi.org/10.1007/s13197-021-05193-3>
- [442] Hasler, C. M. Functional foods: benefits, concerns and challenges-a position paper from the American council on science and health. *The Journal of Nutrition*, **2002**, 132: 3772–3781. <https://doi.org/10.1093/jn/132.12.3772>
- [443] Wu, R., Tang, X., Kang, X., et al. Effect of a Chinese medical nutrition therapy diet on gut microbiota and short chain fatty acids in the simulator of the human intestinal microbial ecosystem (SHIME). *Journal of Functional Foods*, **2019**, 62: 103555. <https://doi.org/10.1016/j.jff.2019.103555>
- [444] Bell, L., Whyte, A., Duysburgh, C., et al. A randomized, placebo-controlled trial investigating the acute and chronic benefits of American Ginseng (Cereboost®) on mood and cognition in healthy young adults, including in vitro investigation of gut microbiota changes as a possible mechanism of action. *European Journal of Nutrition*, **2022**, 61: 413–428. <https://doi.org/10.1007/s00394-021-02654-5>