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Research Article

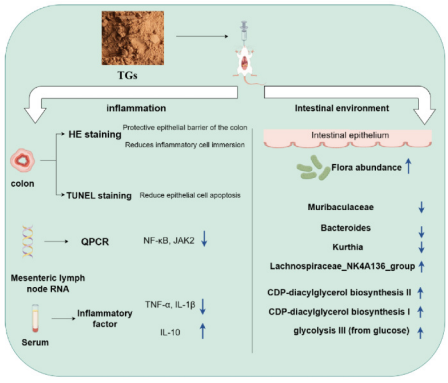
Total Glycosides of *Cistanche deserticola* attenuates DSS-induced inflammatory bowel disease by regulating intestinal environmental homeostasis

Shao-shi Zhang, Duo Feng, Jian-zhang An, Jian Zhao, Jiang-yan Zhao, Yu Guo, Yong-jun Jiang, and Wen-jie Yan*

Food & Medicine Homology, **2025**, *2*, 9420048
https://doi.org/10.26599/FMH.2025.9420048

Highlights

(1) TGs inhibits intestinal inflammation by down-regulating the expression of NF-κB and JAK2.
(2) TGs can effectively alleviate intestinal damage caused by IBD disease.
(3) TGs can restore intestinal homeostasis in diseased mice.



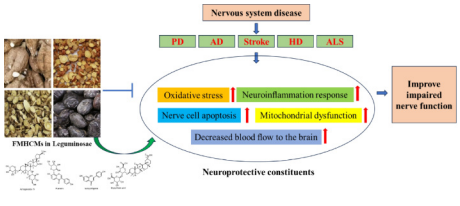
This study focused on total cistanche glycosides (TGs), the main active ingredient extracted from desert cistanche, to explore its potential application in the treatment of inflammatory bowel disease (IBD). In a DSS induced inflammatory bowel disease (IBD) mouse model, TGs demonstrated effective inhibition of NF-κB and JAK2, key molecules in the inflammatory signaling pathway, thereby regulating the expression pattern of inflammatory factors and significantly improving the abnormal apoptosis of intestinal epithelial cells. At the same time, TGs also effectively improved the imbalance of intestinal flora in IBD mice and restored the intestinal environmental balance. These findings suggest that TGs has the synergistic potential to improve IBD by reducing inflammatory responses and restoring environmental balance in the gut. This study reveals the unique advantages and broad prospects of TGs as a natural food and drug homologous resource with low toxicity and multi-pathway regulation ability in the intervention of IBD.

Review Article

The food and medicine homologous Chinese Medicine from Leguminosae species: A comprehensive review on bioactive constituents with neuroprotective effects on nervous system

Xian-Sheng Ye, Wen-Jing Tian, Guang-Hui Wang, Kuan Lin, Shu-Xiu Zhu, Yi-Yuan Xia, Bin-Lian Sun, Xi-Ji Shu, Wei Liu*, and Hai-Feng Chen*

Food & Medicine Homology, **2025**, *2*, 9420033
https://doi.org/10.26599/FMH.2025.9420033



There are 9 kinds of food and medicine homologous traditional Chinese medicines (FMHCMs) from Leguminosae. The neuroprotective constituents of FMHCMs from Leguminosae were summarized, and as a result, 25 bioactive constituents are found to have neuroprotective effects on nerve system diseases, such as Parkinson's disease, Huntington's disease, Alzheimer's disease, ischemia-reperfusion injury, autoimmune encephalomyelitis, subarachnoid hemorrhage, spinal cord injury, sepsis-associated encephalopathy, and

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Highlights

(1) This review summarized the constituents with neuroprotective effects from food and medicine homologous Chinese Medicine in Leguminosae for the first time.
(2) 25 bioactive constituents with neuroprotective effects on nerve system diseases were summarized by searching the PubMed, Science Direct, Web of Science, ACS, Google Scholar, Scopus, and CNKI database.
(3) The neuroprotective effects of constituents exerted through reducing oxidative stress and neuroinflammation responses, protecting nerve cell from apoptosis, and improving mitochondrial function and blood flow to the brain.

diabetic peripheral neuropath. The neuroprotective effects of constituents from Leguminosae were exerted through reducing oxidative stress and neuroinflammation responses, protecting nerve cell from apoptosis, and improving mitochondrial function and blood flow to the brain.

Review Article

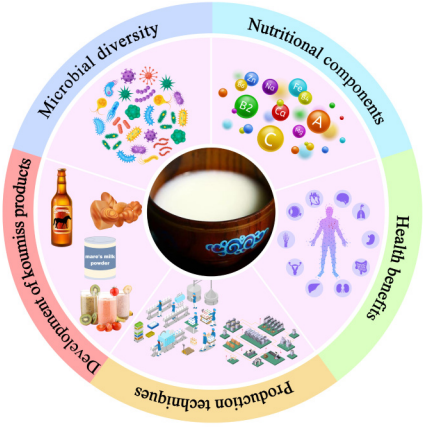
Research progress on chemical composition, microbial diversity and effects on human health of koumiss

Tuya XiLin, Xiao-Lei He, Ya-Qiong Bi, Yu Gao, Aruhan Chen, Myadahgbadam Urtnasan, Bateer Siqin*, and Min-Hui Li*

Food & Medicine Homology, **2025**, *2*, 9420027
https://doi.org/10.26599/FMH.2025.9420027

Highlights

(1) This paper, for the first time, uses bibliometric methods to sort out the institutions, countries, authors, and research hotspots that study koumiss.
(2) This paper sorts out the types of lactic acid bacteria and yeast in koumiss and discusses the reasons for the diversity of bacterial species koumiss.
(3) This paper discusses the health benefits of koumiss, such as lowering blood lipids, improving sleep, anti-oxidation, and enhancing immunity.
(4) This paper discusses the traditional fermentation process and industrial production methods of koumiss.
(5) This paper discusses the product development of koumiss.



Koumiss is a traditional dairy beverage made from fermented mare's milk. This study summarised the key areas and hotspots in koumiss research and focused on the research progress related to the microbial diversity, nutritional components, development of koumiss products, health benefits, and production process of koumiss. Koumiss contains abundant lactic acid bacteria and yeast, and screening high-quality strains is of great significance for the development of direct fermentation agents for koumiss. Koumiss is rich in nutrients, containing various unsaturated fatty acids, proteins, and vitamins, which are very important for maintaining good health. Regular consumption of koumiss can improve sleep quality, lower blood pressure, regulate blood lipids, and enhance immunity. The production process of koumiss is mainly divided into traditional processes and industrial production methods. The industrial production of koumiss has become a research focus, and this article also focuses on the industrial production process of koumiss. In addition, koumiss products are also under development. This study would serve as a useful reference for koumiss quality control and koumiss product stability improvement.

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Review Article

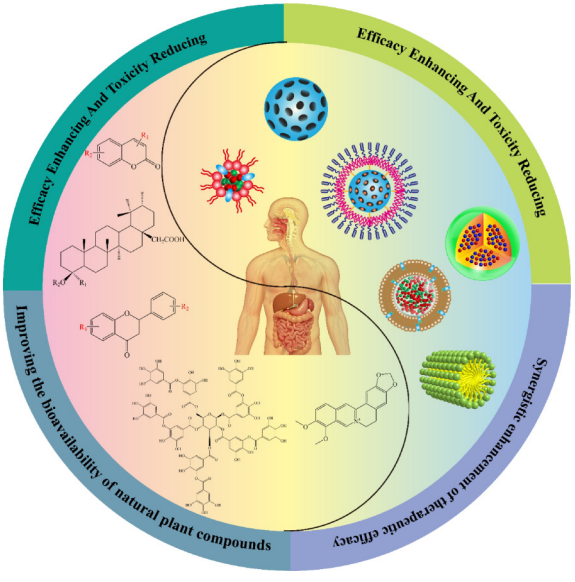
Co-assembly strategies of natural plant compounds for improving their bioavailability

Yu-Hang Miao, Xin Wang, Xiao-Min Zhao, Yan-Wei Hu, Xin Liu, and Da-Wei Deng*

Food & Medicine Homology, **2025**, *2*, 9420022
https://doi.org/10.26599/FMH.2025.9420022

Highlights

(1) Exploring the implications of traditional Chinese medicine decoction methods on the collaborative assembly strategy of natural plant compounds.
(2) Discussed the structural characteristics of flavonoids, triterpenes, polyphenols, phenylpropanoids, and alkaloid compounds, as well as typical collaborative assembly examples.
(3) Outlined the potential mechanisms of collaborative assembly of typical natural plant compounds.



Co-assembly strategies effectively increase the bioavailability of natural plant compounds.

Research Article

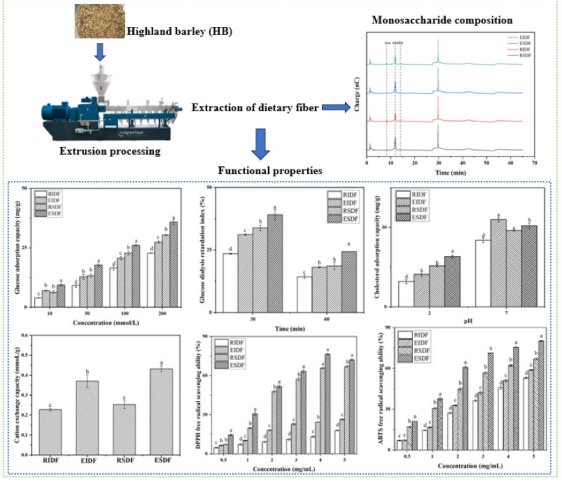
Effect of extrusion processing on physicochemical and functional properties of water-soluble dietary fiber and water-insoluble dietary fiber of whole grain highland barley

Jing-Wen Xu*, Tian-Tian Tian, and Yong Zhao*

Food & Medicine Homology, **2025**, *2*, 9420032
https://doi.org/10.26599/FMH.2025.9420032

Highlights

(1) Highland barley was processed with extrusion and dietary fiber was extracted.
(2) Specific surface area of SDF and IDF was significantly increased after extrusion.
(3) Extrusion processing improved the physicochemical properties of SDF and IDF.
(4) Functional properties of SDF and IDF were also enhanced by extrusion processing.
(5) Extrusion processing increased antixodaint activities of SDF and IDF.



Whole grain dietary fiber was treated with extrusion processing and soluble dietary fiber (SDF) and insoluble dietary fiber (IDF) were extracted. The physicochemical and functional properties of SDF and IDF were significantly improved after extrusion processing.

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Research Article

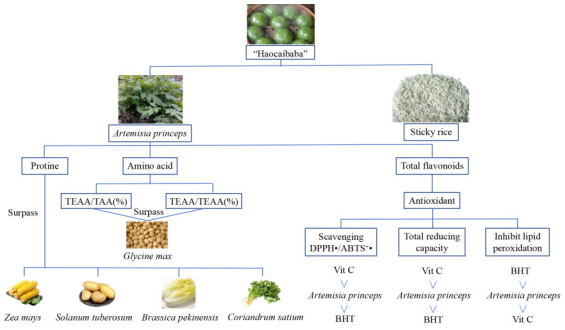
Nutritional value and antioxidant activity of *Artemisia princeps*, an edible plant frequently used in folk food in the Xiangxi region

Jia-Bei Chen, Gui Li, Xuan Chen, Li-Hui Liao, Yu-Qing He, Fan Ye*, and Gong-Xi Chen*

Food & Medicine Homology, **2025**, *2*, 9420043
https://doi.org/10.26599/FMH.2025.9420043

Highlights

(1) The basic nutrients of *Artemisia princeps* are similar to *Z. mays*, *O. sativa*, *S. tuberosum*, *B. pekinensis*, *S. oleracea*, and *C. sativum*.
(2) *Artemisia princeps* also has antioxidant activity, the scavenging effect of the total flavonoids of *Artemisia princeps* on DPPH•, ABTS+•.
(3) *Artemisia princeps* also has reducing capacity, the total flavonoids of *Artemisia princeps* can effectively delay the fading of carotene.
(4) The total flavonoids of *Artemisia princeps* have inhibitory effect on lipid peroxidation.



"Haocaibaba" as Xiangxi traditional food (The main raw materials are *Artemisia princeps* and sticky rice). We found that the nutritional value and antioxidant activity of *Artemisia princeps*. The content of protein in *Artemisia princeps* was higher than that of *Zea mays*, *Solanum tuberosum*, *Brassica pekinensis* and *Coriandrum sativum*. *Artemisia princeps* was rich in aspartic acid and glutamic acid and contained at least 18 amino acids. *Artemisia princeps* had the ability to clear DPPH• and 2,2′-amino-di ABTS+•, *Artemisia princeps* also has reducing capacity, the total flavonoids of *Artemisia princeps* can effectively delay the fading of carotene. The total flavonoids of *Artemisia princeps* have inhibitory effect on lipid peroxidation.

Review Article

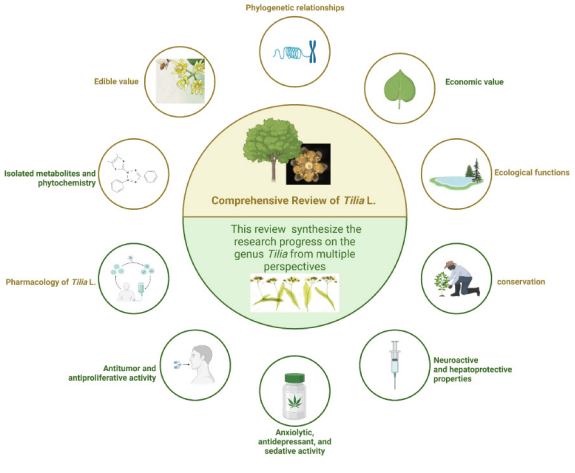
Comprehensive review of *Tilia* L.: phytochemical profiles, edible value, therapeutic potentials, and ecological significance

Ya-Jing Zhou, Qiang Ren, and Yong-Bao Shen*

Food & Medicine Homology, **2025**, *2*, 9420035
https://doi.org/10.26599/FMH.2025.9420035

Highlights

(1) The phytochemical components of *Tilia* L. were described in detail, including flavonoids, phenolic acids, essential oils, etc., which have significant biological activities.
(2) Different parts of *Tilia* L. (such as flowers, leaves, bark) have



The middle part of the graphic abstract is *Tilia* L. tree and Tilia flower. This paper mainly focuses on *Tilia* L. to make a

edible value, especially its flowers are often used to make herbal tea to relieve anxiety and promote sleep.
(3) The application of *Tilia* L. in traditional medicine was reviewed in this paper, emphasizing its antioxidant, anti-inflammatory, antibacterial, anticancer and other pharmacological effects, and demonstrating its potential in modern drug development.
(4) *Tilia* L. plays an important role in the ecosystem, especially in urban greening and biodiversity protection, has strong adaptability to the environment, can improve air quality and provide habitat.

comprehensive review, and discusses in detail the current research progress of *Tilia* L. at home and abroad from various aspects. Ten aspects are summarized from the article, including genetic and phylogenetic Insights, edible value, economic value, isolated metabolites and phytochemistry, pharmacological effects of *Tilia* L., and the following: Ecological functions, conservation, and listed three important effects from the numerous pharmacological effects of *Tilia* L., Antitumor and antiproliferative activity, Neuroactive and hepatoprotective properties, Anxiolytic, antidepressant, and sedative activity. These ten aspects cover the main part of the article, effectively summarizes the central content of this article.

Research Article

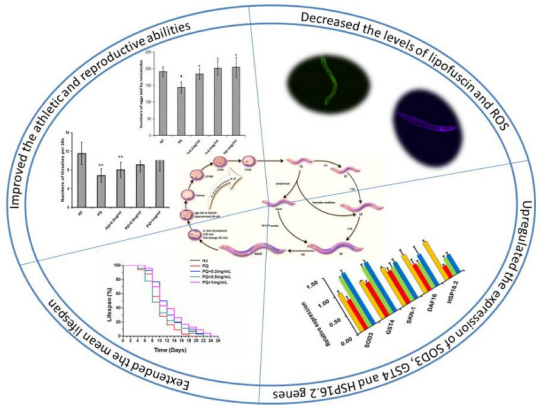
The anti-aging effect of a nutritional supplement based on Lycopene and grape extract

Yao Xie, Zi-Jia Lu, Li-Bo Du, Qian-Yi Huang, and A-Xin Liang*

Food & Medicine Homology, **2025**, *2*, 9420037
https://doi.org/10.26599/FMH.2025.9420037

Highlights

(1) Exploring the anti-aging effects of a nutritional supplement (lycopene/grape extract = 1.5:1).
(2) Examined the mean lifespan, athletic and reproductive abilities, the levels of lipofuscin and reactive oxygen species (ROS) in *Caenorhabditis elegans* (*C. elegans*).
(3) Discussed the potential mechanism of the nutritional supplement (lycopene/grape extract = 1:1) on anti-aging.



This study examined the anti-aging effects of a nutritional supplement (lycopene/grape extract=1.5:1). The mean lifespan, athletic ability, reproductive ability, the levels of lipofuscin, reactive oxygen species (ROS), and several critical genes related to lifespan regulation in *Caenorhabditis elegans* (*C. elegans*) were examined and determined. According to the results, the nutritional supplement effectively extended the mean lifespan and improved the abilities of athletic and reproductive of *C. elegans* dose-dependently. Meanwhile, the levels of lipofuscin and ROS decreased significantly in the three dosage groups ($P < 0.05$). Furthermore, the nutritional supplement upregulated the mRNA expression of *SOD3*, *GST4* ($P < 0.01$), and *HSP16.2* ($P < 0.05$) genes. Our findings showed the nutritional supplement could prolong the lifespan of *C. elegans* through reducing the levels of lipofuscin and ROS, and enhance the resistance against oxidative stress.

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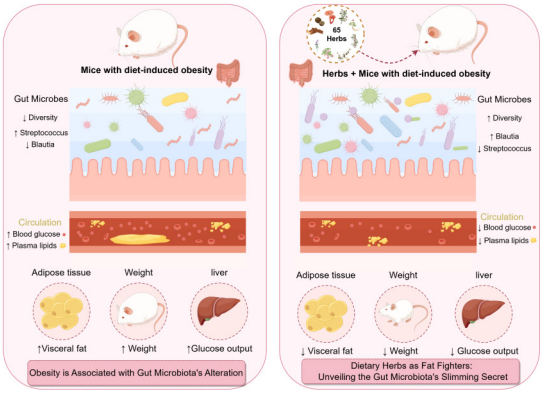
Research Article

Beneficial effects of dietary herbs on high-fat diet-induced obesity linking with modulation of gut microbiota

Yan-Min Liu, Chuan Liu, Yu-Sheng Deng, Yang Chen, Qin-Wei Qiu, Xiao-Xiao Shang, Cheng-Rui Wang, Li-Juan Han, Li Huang, Zhi-Min Yang, Liang Xiao*, Xiao-Dong Fang*, and Xiao-Ping Li*

Food & Medicine Homology, **2025**, *2*, 9420034
https://doi.org/10.26599/FMH.2025.9420034



A high-fat diet-induced obesity mouse model was employed to assess the efficacy of various herbs in weight reduction and investigate their interactions with the gut microbiota.

Highlights

(1) Identification and characterization of herbs with anti-obesity effects and investigate their interactions with the gut microbiota.
(2) *Inulin*, *Mori follum*, *Corn silk*, *Maydis seigma*, *Crataegus*, *Taraxacum*, *Portulacae herba*, *Rhizoma gastrodiae*, *Rose rugosae flos*, and *Thallus laminariae* significantly reduce body weight and restore gut microbiota dysbiosis in high-fat diet-induced obesity.
(3) Specific bacteria enriched by anti-obesity herbs, such as *Blautia*, are inversely related to triglyceride levels, while *Desulfovibrio*, reduced by the herbs, is positively associated with weight gain.
(4) Arachidonic acid, shared by three anti-obesity herbs, is linked to beneficial bacteria like *Blautia*.
(5) These findings advance our understanding of the regulatory network between herbs and the gut microbiota, offering potential targets for future interventions.

Review Article

Protective benefits and mechanisms of *Phyllanthus emblica* Linn. on aging induced by oxidative stress: a system review

Na Wu, Yao Pan*, Qi Liu, Fereidoon Shahidi, Hong-Yan Li, Fang Chen, Ze-Yuan Deng, and Zhi-Hong Zhang*

Food & Medicine Homology, **2025**, *2*, 9420029
https://doi.org/10.26599/FMH.2025.9420029

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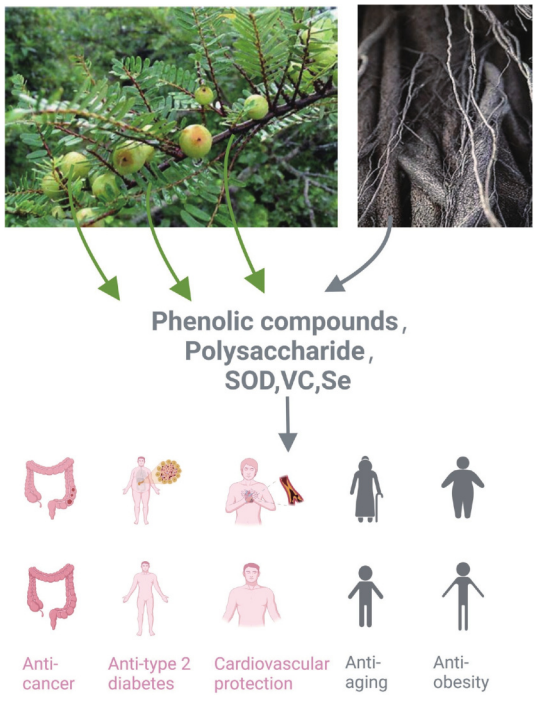
Highlights

(1) We summarize the nutrients and active constituents in *Phyllanthus emblica* Linn.
(2) The active components with anti-aging effects in *Phyllanthus emblica* Linn. are polyphenols, polysaccharides, Vitamin C, SOD and Se.
(3) We point out the shortcomings of the current research, and provide a theoretical basis for the application of *Phyllanthus emblica* Linn. in drugs and functional foods.



By clarifying the nutritional value of *Phyllanthus emblica* Linn. (PE), it was found that the roots, stems, leaves and fruits of PE were rich in a variety of active substances, such as polyphenols, polysaccharides, SOD, etc. The latest researches of PE have demonstrated that these active substances have many pharmacological effects.

Review Article

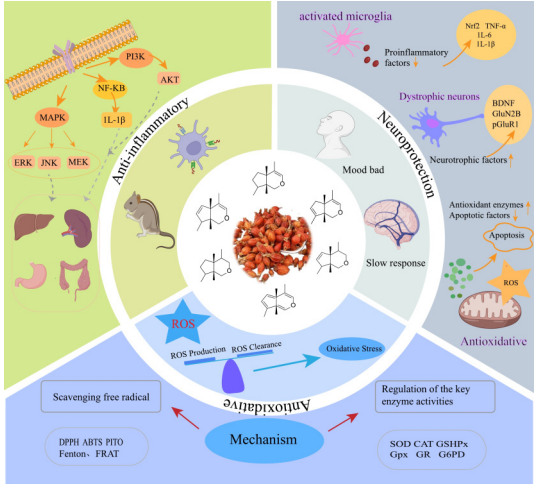
Critical Review for active iridoids in *Gardenia jasminoides* J.Ellis as a plant of food and medicine homology

Ya-Dan Zhang, Meng-Han Wang, Miao Guan, Fathy Mohamed Saber Ali Mehaya, Xiao-Yu Chen*, and Xu-Qiang Liu*

Food & Medicine Homology, **2025**, *2*, 9420030
https://doi.org/10.26599/FMH.2025.9420030

Highlights

(1) Iridoids from *Gardenia jasminoides* contain six categories according to the structure of iridoids.
(2) Iridoids from *Gardenia jasminoides* possess anti-inflammatory, antioxidant, anti-tumor, and neuroprotection biological activities.
(3) The potential mechanisms of anti-inflammatory, antioxidant,



There are 94 iridoids isolated from *G. jasminoides*, and their structures are diversified. The iridoids in *G. jasminoides* are divided into six categories according to the structure. Main biological activities of iridoids from *Gardenia jasminoides*

anti-tumor and neuroprotective effects of iridoids from *Gardenia jasminoides* were summarized.

(include anti-inflammatory, neuroprotection, and anti-oxidative) and their potential mechanism.

Research Article

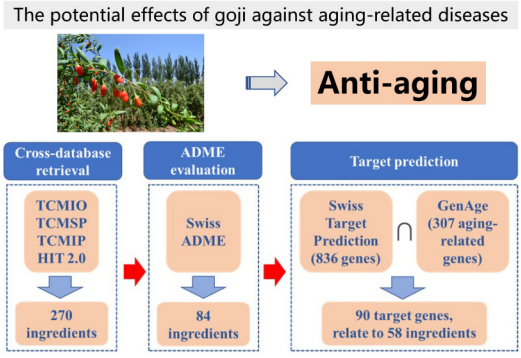
An *in-silico* assessment suggests the potential effects of goji (fruit of *Lycium barbarum* L.) against aging-related diseases

Ruyu Yao*

Food & Medicine Homology, **2025**, *2*, 9420036
https://doi.org/10.26599/FMH.2025.9420036

Highlights

(1) 58 compounds in goji were found to be linked to 90 aging-related human genes using a network pharmacology methodology.
(2) This study highlights the potential effects of goji against aging-related diseases.



Goji is a traditional food-medicincal plant which has been used for the prevention of aging-related diseases. Using a network pharmacology methodology, the metabolites of goji were databased, the results showed that 58 compounds in goji were linked to 90 aging-related human genes, suggesting the potential anti-aging effects of goji.

Aims and Scope

Aims

Food & Medicine Homology is a peer-reviewed, cross-disciplinary, open access journal dedicated to cutting-edge research integrating findings in food science and medicine. The journal publishes papers dealing with plants, animals and microorganisms, reporting the food resources and base materials with nutritional and medicinal values and health-promoting effects that are discovered and confirmed using modern scientific theories and technologies, and providing insights into their health-promoting functions, underlying molecular mechanisms of action and regulatory modes.

Food & Medicine Homology focuses on the scientific evidence and practical application guidance of the composition-efficacy-mechanism relationship in food resources with medicinal and therapeutic values, and provides theoretical basis for the development of products with nutritional, health-promoting, therapeutical and medicinal functions. The content reported in the articles must be scientifically innovative, impactful and excellent.

Scope

- **Research on functional components:**
  Including isolation, structural characterization and activity evaluation of polysaccharides, proteins and secondary metabolites.

- **Efficacy studies:**
  In vivo and *in vitro* efficacy studies of extracts, effective fractions/parts and secondary metabolites.

- **Health effects:**
  In vitro and *in vivo* research on the mechanisms of action of functional ingredients, including clinical studies such as human oral administration trials.

- **Interdisciplinary research:**
  Including but not limited to:

- Screening and discovering new food resources based on traditional Chinese medicine framework and folk medicine practices, include toxicity evaluation;
- Research on the applications of new functions of clinical formulas/preparations based on the homology of medicine and food exploration of new food raw materials and ingredients;
- Food nutrition and safety evaluation systems for the digestive tract;
- New analytical technologies for the identification and activity screening of functional components. Bioavailability, targeted delivery, and microecological regulation of functional components.

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《药食同源（英文）》 致力于报道食品科学与医学前沿交叉融合研究的最新成果

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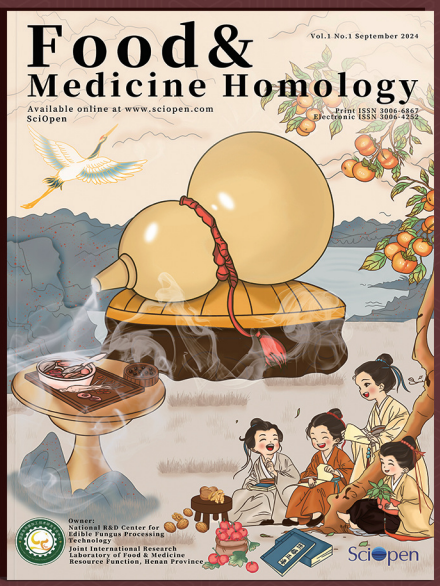

- 聚焦具有药用和康养价值的食物资源中成分-功效-机理之间关系的科学证据，为开发兼具营养、保健、康养、医疗功能的健康产品提供理论基础
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