RESEARCH PROGRESS ON PHARMACOLOGICAL EFFECTS AND CLINICAL APPLICATIONS OF PERSIMMON LEAF FLAVONIODS

QU Huai-dong， YAN Xue-ying1*

1.College of Pharmacy， Heilongjiang University of Chinese Medicine， Harbin 150040， China

Abstract Persimmon Leaf Flavoniods（PLF）is the main active components of the fresh or dried Diospyros kaki Thunb.(Ebenaceae , Diospyros L.)leaves , which have several pharmacological effects such as the roles on cardiovascular system , antioxidant , hypolipidemic effect , hypoglycemic effect , hemostasis , antibacterial , antitumor , tyrosinase inhibition , and so on . At present , it is mainly used in the treatment of cardiovascular disease and hemorrhagic diseases . In this paper , the pharmacological effects and clinical applications are reviewd , which can provide theoretical bases for the further development and utilization of the plant .

Keywords: persimmon leaves; persimmon leaf flavonoids; pharmacological effects; clinical applications; cardiovascular system

Persimmon leaves are the fresh or dried leaves of Ebenaceae,Diospyros L.,Diospyros kaki Thunb.,which are bitter,cold and have the effect of reducing the gas,thirst,sheng jin,heat-clearing,detoxifying,antitussive hemostasis.The medicine has been recorded in the “Yunnan Materia Medica”since Ming Dynasty--”The leaves deposited carbuncle”[1]. The study of Ryu Ri [2]confirmed that PLF is the main active ingredient in persimmon leaves.Modern pharmacological studies have shown that PLF can protect the cardiovascular system, blood lipid, antioxidant, hypoglycemic, hemostatic, antibacterial, antitumor, pharmacological inhibition of tyrosinase activity, and low toxicity, less adverse reactions[3], which is rich in resources and easy industrialized production. In recent years, more and more attention has been paid to the medical profession. This “persimmon” persimmon flavone “persimmon leaf flavonoids” “pharmacological effects” and “Persimmon leaf flavoniods” Persimmon “leaf total flavoniods” and “Pharmacological effects” as key words, a combination of literature retrieval in PubMed, Elsevier, Springer, RSC, OSA, ACS, CNKI, VIP, Wan Fang, China superstar, Duxiu as in the database. Results a total of more than 40 English articles and more than 100 Chinese literatures were retrieved, of which there were more than 30 effective literatures. The pharmacological action and clinical application of PLF are reviewed in order to provide theoretical support for further development and utilization of PLF.

PLF is the main active ingredient in persimmon leaves[4]. Since the study found that PLF Huang Qigan, quercetin and kaempferol 3-O-beta-D-glucoside[5], kaempferol, quercetin, rutin, Hyperoside and[6]. Modern pharmacological studies have shown that it has a wide range of pharmacological effects[7].

Through the above studies, it can be fully demonstrated that PLF has a wide range of pharmacological effects, such as improving cardiovascular and cerebrovascular system, anti-oxidation, lowering blood fat, lowering blood sugar, hemostasis, antibacterial and antiviral, anticancer inhibition of tyrosinase and so on. But the study also found that although the pharmacological effects of PLF, low cost and low toxicity, but it is because of the PLF complex components, the mechanism is not clear and other reasons restrict its development and utilization in clinical. In view of the above problems, it is suggested that the following research should focus on the study of the action mechanism of the active ingredient and the development of PLF, in order to provide more reliable theoretical basis for the scientific and rational development and utilization of PLF

References:

[1] Ri R， Hye-Jin K， Byeongseok M， et al. Ethanol extract of persimmon tree leaves improves blood circulation and lipid metabolism in rats fed a high-fat diet [J]. Journalof Medicinal Food， 2015， 18（7）：715.

[2] Jung-Keun C， In-Hwa J， Ji-Min P， et al. Inhibitory effect of persimmon leaf extract on development of atopic dermatitis-like skin lesions [J]. Journal of the Korean Society for Applied Biological Chemistry， 2011， 54（4）：653.

[3] LiuL， LiuR， ZhangJ， et al. Study on the PEG-based microwave-assistedextraction of flavonoid compounds from persimmon leaves [J]. Journal of Separation Science， 2012， 35（23）：3412.

[4] Duan JY， Chen VL， Dong Q， et al. Chemical structure and immunoinhibitory activity of a pectic polysaccharidecontaining glucuronic acid from the leaves of diospyros kaki [J]. International Journal of Biological Macromolecules， 2010， 46（5）：465.

[5] XueYL， MiyakawaT， HayashiY， et al. Isolation and tyrosinase inhibitory effects ofpolyphenols from the leaves of persimmon diospyros kaki [J]. Journal of Agricultural and Food Chemistry， 2011， 59（11）：6011.

[6] Xie CY， Xie ZS， Xu XJ， et al. Persimmon(diospyros kaki L.) leaves:A review on traditional uses,phytochemistry and pharmacological properties [J]. Journal of Ethnopharmacology， 2015， 163（7）：229.

[7] Chen G， Lu HW， Wang CL， et al. Effect of five flavonoid compounds isolated from leaves of diospyros kaki on stimulus-induced superoxide generation andtyrosyl phosphorylation of proteins in human neutrophils [J]. Clinica Chimica Acta， 2002， 326（25）：169.

PHARMACOLOGICAL EFFECTS STUDY ON FERMENTED CORDYCEPS SINENSIS AND ITS CLINICAL OBSERVATION

Sheng Ziyang1 , Zhang Huijie2 Song Liqun2,

(1.Heilongjiang University of Chinese Medicine, Harbin, Heilongjiang, 150040, China, E-mail:407801324@qq.com; 2.Department of Nephrology, First Affiliated Hospital of Heilongjiang University of Chinese Medicine, Harbin, Heilongjiang, 150040, China)

Abstract: This paper summarizes the pharmacological studies and clinical application of fermented Cordyceps militaris in clinical practice, and provides literature support for the rational application of fermentation Cordyceps preparation. Artificial culture of fermented Cordyceps preparations in the pharmacological and efficacy of Cordyceps sinensis