

nine contents increased significantly in total saponins groups.

Guanosine, creatinine and uric acid were important biological markers in the occurrence and development of gouty arthritis. Total saponin of RDN have potential effects on the treatment of gouty arthritis by regulating the content change of these biomarkers.

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RESEARCH PROGRESS ON IMMUNE EFFECTS OF CYCLOARTANE TRITERPENOIDS FROM ASTRAGALI RADIX

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Abstract With retrieval literature review data on modern pharmacological study of Astragalus saponins in recent 10 years, the article summarized the pharmacological effects and mechanism on immune activity of cycloartane triterpenoids from Astragali Radix, in order to provide references for the further research on the mechanism of immune activity of Astragalus cycloartane triterpenoids.

Key words Immune effect; Cycloartane triterpenoids; Astragali Radix; Research progress

Recent studies have shown that astragalus saponins also have definite immune activity. Especially the cycloartane triterpenoids, such as astragaloside I, astragaloside II, astragaloside III, and astragaloside IV, but the mechanism is still unclear.

Large number of studies showed that astragaloside had clear immune enhancement effect. cycloartane triterpenoids can enhance the immune function of mouse peritoneal macrophages. Ding found astragaloside IV can adjust the cell proliferation and cytokine secretion with a two-way adjustment function on the immune function. Research also found astragaloside II enhanced the activation of T cells by regulating the activity of PTPase CD45. Liu found the high levels accumulation of astragaloside III in the thymus and spleen. The distribution suggested that it is the main target of the immune response.

To sum up, the pharmacological study of astragalus saponins mainly concentrated in total astragaloside and astragaloside IV, little in astragalus saponin I, II and III, while the research on other cycloartane triterpenoids severally is blank, it needs to further research. The author also found that dose-effect relationship of Astragalus saponins on the immune regulation activity is not clear. Astragalus saponins had bidirectional regulation effect on the immune response, so it is worth further study in order to know well the dose-effect relationship and ensure the clinical medicine effectiveness and safety of astragalus saponins on treatment of immune diseases.

THE RESEARCH OF NANOMETER TRADITIONAL CHINESE MEDICINE ON HEPATOCELLULAR CARCINOMA

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Abstract: Hepatocellular carcinoma (HCC) with high morbidity and mortality is one of the most common diseases of digestive diseases and rising. At present, surgery, radiotherapy and chemotherapy is used for the treatment of HCC in clinic, but drug is also essential treatment tools. However, poor selectivity and absorption rate of the drugs and multidrug resistance lead to a therapeutic effect for HCC patients not ideal. Traditional Chinese medicine (TCM) has unique advantages in the treatment of HCC. And nanotechnology can make drugs to transport directly to the target organ and militate. Nanometer TCM (NTCM) combines the advantages of TCM and nanotechnology, which solve the above problem effectively. In this paper, we introduce the effects of NTCM on HCC and research progress.

Key words: hepatocellular carcinoma, nanometer traditional Chinese medicine, target point

Introduction Hepatocellular carcinoma (HCC) is one of the most common diseases in clinic with the high death rate. At present, the morbidity of HCC is rising in China, and surgical treatment and adjuvant therapy have their own limitations[1]. So it is necessary to find a rapid and available method to cure HCC. Compared with the traditional tumor adjuvant therapy, NTCM is more effective and selective to kill a large number of liver cancer cells with smaller damage of body, which is new trend of development and research in the field

of cancer treatment. With the development of medical technology, key genes, signal pathways and biomarkers are gradually clear, NTCM are used for HCC widely[2]. In this paper, we introduce the effects of NTCM on HCC.

The advantage of NTCM NTCM refers to the active compounds, effective part and the parent drug of TCM with less than 100 nanometers particle size made by nanotechnology. Compared with other preparations, NTCM can promote the dissolution of drugs and improve the drug bioavailability because of the large specific surface area and distribution in the body. NTCM can be captured and phagocytosis easily by liver cells due to the characteristic of particle size and shape so that drugs gather in the liver and gradually degrade release to the blood circulation. It means that it can enhance the efficacy and reduce adverse reactions. In summary, NTCM have many new features and characteristic that accelerates the TCM modernization[3].

The mechanism of NTCM on HCC The pathogenesis and progress of HCC is complex involving the changes of carcinogenic suppressor genes and the involvement of many small molecule substances in the formation of signaling pathways[4]. Therefore, there are many therapeutics targets in the progress of tumor proliferation, differentiation, angiogenesis, invasion and metastasis, which can significantly inhibit or kill tumor cells via these targeted intervention[5]. The main receptors in the liver are the sialo glycoprotein, the folate receptor. Glycyrrhizic acid and glycyrrhetic acid has a good liver targeting effect. The binding sites of glycyrrhizic acid and glycyrrhetic acid are present on the hepatocyte membrane, and the carrier material modified with glycyrrhizic acid or glycyrrhetic acid has hepatic targeting tendency, so glycyrrhizic acid and glycyrrhetic acid are important modification materials for liver[6]. So the nanometer preparation with the adaptive vector can be actively gathered in the tumor area, which makes the tumor tissues in a relatively constant high concentration of drug environment and inhibit tumor growth[7].

Result and discussion In this paper, we introduce the preponderance and mechanism of NTCM on HCC. NTCM can not only greatly improve the drug activity and bioavailability, and may even produce new effects, reduce side effects, have strong targets and cure some difficult illness cases. NTCM produced under the method of improving efficacy and grain refinement, but its essence is still TCM. So compared with western drugs, its research direction must maintain its characteristic, and the study should proceed under the safe and effective guidelines, which not only pays attention to the “magic” of NTCM but also the clinical test results.

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PREPARATION OF SILYMARIN SOLID DISPERSION AND DETERMINATION OF DISSOLUTION RATE

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Object: To prepare silicist solid dispersion with water-soluble material as carrier, and to increase the dissolution rate of silymarin. Methods: A solid dispersion of silymarin was prepared by using polyethylene glycol 6000 (PEG6000), povidone K30 (PVPK30) and povidone K30 plus Tween-80 as the carrier, and the in vitro dissolution test was carried out. Results: The solid dispersion prepared by PEG6000 and PVPK30 could increase the dissolution rate of silymarin and the dissolution rate of the solid dispersion prepared with PVPK30 plus Tween-80 was better than that of PEG6000 and PVPK30 alone dissolution rate of silymarin solid dispersion.

Key words: silymarin; solid dispersion; solubility; dissolution rate

Silymarin is a flavonoid lignan compound extracted from the artemisia of the genus Compositae, consisting mainly of silybin, isosilybin, isosilybin, water fly thistle and silymarin. Which is the highest content of silybin, the activity is also the strongest, with the role of liver protection, clinical mainly for the treatment of chronic hepatitis. Silymarin in water, oil, the solubility is small, the dissolution rate is slow, affecting its bioavailability. In order to improve the solubility of the drug in water, the solid dispersion technology was used to make silymarin into solid dispersion, and the solubility and dissolution of silymarin were measured by UV spectrophotometer.