

DENDRITIC CELLS VACCINE :A NEW TREATMENT FOR CANCER

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Abstract Dendritic cells (DCs) are professional antigen (Ag)-presenting cells (APCs) that, upon activation, can initiate and direct Ag-specific immune responses. DCs have become a promising tool for cancer immunotherapy due to considerable advances related to their biology and their role in T-cell activation, which has clearly opened avenues for the development of vastly improved clinical protocols. Accordingly, clinical studies have begun in which DCs are generated ex vivo, charged with tumor antigens, exposed to maturation stimuli and reinfused to immunize patients.

Key words: dendritic cells , cancer , vaccine

Cancer is a major health problem worldwide and one of the most important causes of morbidity and mortality in children and adults. The lethality of malignant tumors is due to their uncontrolled growth within normal tissues, causing damage and functional impairment. This approach has the potential to control responses to cancer antigens in a specific and nontoxic manner, in both vaccination and therapeutic settings. DC-based vaccines should present a "mature" state in order to activate an Ag-specific immune response upon T-cell encounter.

Objective In order to improve the effect of cancer treatment, developed DC-based vaccine. DC-based vaccine can promote the proliferation of CD8+T cells, enhanced CTL effect and delay the growth of the tumor.

Materials and methods The ability of the DC vaccine to kill the tumor was verified by tumor-bearing mice. The tumor cells were inoculated into the back of the mice and the tumor volume was measured every two days. When the volume is greater than 3000 mm³, to determine the death of mice. To investigate whether DCs-based vaccine can prolong the survival time of mice and inhibit tumor growth.

Results and discussion The malignant phenotype of cancers reflects defects in regulation of cell proliferation, resistance of the tumor cells to apoptotic death, ability of the tumor cells to invade host tissues and metastasize to distant sites, and tumor evasion of host immune defense mechanisms. The possibility that cancers can be eradicated by specific immune responses has been the impetus for a large body of work in the field of tumor immunology. Therapeutic vaccination is currently designed as an adjuvant or neoadjuvant treatment for patients with a high risk of recurrence.

Adequate vaccine design and a better understanding of host-tumor interactions are needed to overcome systemic and local immune tolerance and generate an effective antitumor response. Cancer vaccination efforts are centered on the disruption of the tolerogenic state of the immune system and direction of an effector T-cell (Teff) response, ultimately leading to cancer regression. One of the first cancer vaccines to significantly advance in the clinic was GVAX, which involves irradiated tumor cells modified to express granulocyte-macrophage-CSF (GM-CSF), thereby recruiting and maturing DCs at the site of vaccination to promote antigen uptake and delivery. Tumor-associated cDCs are thought to endocytose dead neoplastic cells or cellular debris and transport cancer-associated antigens to the draining lymph node where T-cell priming and activation can occur. DCs-based vaccine can prolong the survival time of mice and inhibit tumor growth.

DC-based vaccine can improve immunity, control the tumor volume and prolong the survival time of mice. DC-based vaccine is a new way to treatment and prevention the tumor. Cancer vaccination efforts are centered on the disruption of the tolerogenic state of the immune system and direction of an effector T cell response, ultimately leading to cancer regression. DCs can promote T cell response, enhanced CTL effect. The vaccine can promote CD8+T cell secretory IFN- γ and Granzyme B. DCs are generated ex vivo charged with tumor antigens, exposed to maturation stimuli and reinfused to immunize patients.

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A ROLE OF SCHISANDRA CHINENSIS AND ITS CONSTITUENTS IN THE PROTECTION OF CENTRAL NERVOUS SYSTEM

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Abstract : Schisandra chinensis (Turcz.) Baill. has a medical history for thousands of years as a tonic and obtained obvious effect. In the recent years, the scholars all over the world have finished a lot of researches on Schisandra chinensis, using more advanced methods to discuss its active ingredients and pharmacological effects. The components of Schisandra chinensis were mainly composed of lignans, polysaccharides, volatile oil, organic acids and so on. This herbal medicine can be used in cardiovascular system, central nervous system,

respiratory system and many other tissues. This review discussed the neuroprotective effects of Schisandra chinensis and the treatment of brain disorders. Schisandra chinensis and its ingredients have potential advantages.

Keywords: Schisandra chinensis, lignans, Central Nervous System

1. Introduction Schisandra chinensis (Turcz.) Baill. mainly produced in Heilongjiang, Liaoning, Jilin and Hebei of China, and it also known as wuweizi in traditional Chinese medicine [1]. The extracts obtained from the Schisandra chinensis fruit, showed abundant biological activities, such as hepatoregenerative, anti-HIV, antioxidant, anti-cancer and enhance immunity properties [2]. In recent years, the researches mainly focused on the liver and antitumor activities of Schisandra lignans and less on its traditional analgesic effect [3]. In this paper, we reviewed the chemical components of Schisandra chinensis and its pharmacological effects in the central nervous system in order to provide the basis for the wide application of Schisandra chinensis in the central nervous system.

2. Component and Structure Recent results showed that Schisandra chinensis had a variety of chemical constituents, including lignans, triterpenes, sesquiterpenes, volatile oils, polysaccharides, flavonoids, organic acids and amino acids, among which the main chemical constituents were lignans [4]. Volatile oil extracted from Schisandra chinensis contains sesquiterpene, monoterpene and a small amount of acid, the main component is sesquiterpenoid [5]. In addition to the chemical compositions above, Schisandra chinensis also contains inorganic elements and flavonoids.

3. Effects on the Central Nervous System Schisandra chinensis has obvious sedative hypnosis, protect the brain and improve the cognitive effects. Schisandra chinensis and its constituents are known to have the beneficial effects on central nervous system(CNS) disorders including the cognitive performance, memory, and neurodegenerative diseases.

Many studies have identified the neuroprotective properties of S. Chinensis extraction and lignans especially dibenzocyclooctadiene-type lignans. Such as, Schisantherin A, 7,8-seco-lignans and tetrahydrofuran lignans all showed protective effects in SH-SY5Y, α -iso-cubebene increased the primary cortical neuron cell survival [6]. Local administration of Schisandra in brain-damaged rats showed a significant improvement in learning and memory [7]. Schisandrin C has been reported to improve short-term or working memory [8]. Recent studies suggested that Schisandra lignans produced sedative and hypnotic bioactivities. Schisandra lignans, in particular, its monomer Schisandrin A has an anticonvulsant effect.

4. Conclusions and Future Perspective Schisandra chinensis has been used for thousands of years as traditional medicine. The results reviewed above suggest that its constituents are effective to produce the beneficial effects on central nervous system, including neuroprotection, learning and memory, sedative-hypnotic and anxiolytic, antidepressant, anticonvulsant and analgesic. However, Schisandra chinensis lignans which influenced the central nervous system has not been fully elucidated. Schisandra chinensis also has significant of anti-anxiety, antidepressant, anti-convulsant, analgesic, improve cognitive function, protect nerve cells and other effects, it needs to be exploited in the future.

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STUDIES ON THE ANTIOXIDANT ACTIVITY OF EXTRACTS FROM SCHISANDRA CHINENSIS

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Abstract We have done a experiment about different extract parts of Schisandra chinensis restrain antioxidant properties were assessed by scavenging actiity of DPPH free radical and scavenging actiity of hydroxyl free radical. The results suggest that the ethyl acetate fraction of Schisandra chinensis is a significant source with potential antioxidant activity.