

Bioactive components from herbs used in Traditional Chinese Medicine as potential anticancer adjuvants

Strahil Todorov, Darinka Gjorgieva Ackova
Faculty of Medical Sciences, University Goce Delcev, Štip, R. Macedonia

Introduction

The most important disadvantages of conventional anticancer treatment today, namely non-predictive therapeutic effect, development of chemotherapeutic resistance of cancer cells, and high expenses per treatment, have attracted wide attention for searching of new treatment opportunities. Herbal products used in Traditional Chinese Medicine (TCM) shows special interest because they have been identified to possess multi-effect on cancer cells: cytotoxicity, immunomodulation, anti-angiogenesis and anti-metastatic effect.

Materials and methods

We analysed 12 scientific papers found in the base of National Centre for Biotechnology Information's library (NCBI) and made a classification of possible targets from Chinese Herbal Medicines (CHMs) in terms of their anticancer potential.

Results and Discussion

Curcumin, camptothecine, artemisinin, berberine, oridonin, emodin, wogonin and shikonin are the most commonly investigated bioactive components from CHMs that cause cytotoxic effect over cancer cells. Immunomodulation is effect detected in studies where use of herbal product based on *Curcumae radix*, *Astragali radix*, *Astragalus membranaceus* and *Panax ginseng* were performed. Artemisinin, wogonin, ursolic acid, silibinin, triptolide, and curcumin also have been identified to have blockage effect over angiogenesis, and all compounds previously listed with ginsenoside Rg3 additionally, shows antimetastatic effect over cancer cells. Curcumin is the only bioactive component involved in the reviewed CHMs that causes all four listed anticancer effects.

Conclusion

In the terms of search of effective bioactive compounds with anticancer effect, identification, characterization, pharmacological and toxicological evaluations, authenticity of the specific herbal components must be provided to assure traditional use of the herb and also reveal possibility of new drug development.

Key words

Traditional Chinese Medicine (TCM), Chinese Herbal Medicine (CHM), cancer, cytotoxicity, immunomodulation, anti-angiogenesis, antimetastasis