

Study on quality control of *Lentinus edodes* and *Panax notoginseng* based on bioactive components

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Abstract

Herbs and mushrooms have been used as medicine for over five thousand years, and they were the few materials for medicinal purpose in most of human history. Nowadays it has been well known that many medicines and foods are derived from the same source, and applied for individuals with different health status. Different with chemical drugs, some herbs and medicinal mushrooms were also consumed in traditional food dishes for purpose of health preserving, or prevention and treatment of diseases, although they are mainly considered as medicinal materials, which could be considered as medicinal and food dual purpose used material (MFDPM). Hitherto increasing popularity of MFDPM in international market introduces challenges to the traditional border between food and medicine, and the vague position of MFDPM in regulatory system. However the quality standards and related analytical methods for San-qi (roots of *Panax notoginseng*) and LE (fruiting body of *Lentinus edodes*) used as MFDPM are insufficient.

In the present research three chromatographic methods for analysis of specific bioactive components were developed for quality control of representative MFDPM San-qi and LE, including a sensitive and accurate HPAEC-DAD method for determination of α - and β -ODAP in raw and steamed San-qi; a rapid and simple HPLC-DAD fingerprint method combined with HPLC-HRMS-MS/MS method for comprehensive profiling and characterization of small bioactive components in LE; and a HPSEC-RID-MALSD method combined with specific endo-glycosidase hydrolysis and chain conformation degradation for determination of macromolecular characteristics which are correlated to the immunomodulatory effect of lentinan including molecular weight (MW), its distribution (MWD), glycosidic linkage and triple helical conformation. Also, a simple and economic IEX method for isolation

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