Study on Anti-oxidative and Anti-tyrosinase Activities of Polygonum Cuspidatum Extracts

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ABSTRACT

The resveratrol contents, anti-oxidative (DPPH-free-radical-scavenging effect) and anti-tyrosinase activities of Polygonum cuspidatum (one of Chinese traditional medicine) extracts with 100% pure water (Wes) and 10% and 70% ethanol solutions (0.1 EtEs and 0.7 EtEs, respectively) were investigated in this study. The maximum extract content (30% extraction yield) and resveratrol (1.57% dried weight) was obtained from the freeze-dried 0.7 EtEs of P. cuspidatum. Among the P. cuspidatum extracts, only the freeze-dried 0.7 EtEs had strong DPPH-scavenging effects or anti-oxidative activities, while the activities of the freeze-dried 0.7 EtEs first gradually decreased to a certain value as increasing their addition concentrations or resveratrol contents, and then increased as increasing the concentrations or contents. For the other P. cuspidatum extracts, the anti-oxidative activities first increased and then decreased to some certain values as increasing their addition concentrations or resveratrol contents. Except that the tyrosinase relative activities of the hot-dried WEs and 0.1 EtEs were kept at 80%~90%, the freeze-dried 0.7 EtEs also had stronger anti-tyrosinase activities than the others. However, the tyrosinase relative activities started decreasing from original 70% or the anti-tyrosinase activities became much significant and effective when the addition concentrations or resveratrol contents of the freeze-dried 0.7 EtEs were over 1000 ?g/mL or 15.7 ?g, respectively. In this study, only the freeze-dried 0.7 EtEs had the higher extract and resveratrol contents and stronger anti-oxidative anti-tyrosinase activities than the others.

Keywords : Polygonum cuspidatum, resveratrol, anti-oxidative activity, anti-tyrosinase

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