Anti-oxidative and Anti-tyrosinase Activities of Extracts of Purple Coneflower Seed

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ABSTRACT

The three caffeic acid derivatives contents, anti-oxidative and anti-tyrosinase activities of extracts with 100% pure water (WEs), and 10%, 40%, 70% ethanol (0.1EtEs, 0.4EtEs, 0.7EtEs, respectively), and 10%, 40% and 70% glycerol (0.1GlEs, 0.4GlEs, 0.7GlEs, respectively) of the powders (PCfSPs) of purple coneflower seeds produced in Taiwan were investigated in this study. The maximum caffeic acid derivatives contents (1.13% dried weight) was obtained from the freeze-dried 0.7EtEs of PCfSPs, while those (90.6±79.0 μM/mL 70% glycerol) was obtained from the 0.7GlEs of PCfSPs for glycerol extraction. Among the WEs and EtEs of PCfSPs, only the freeze-dried 0.7EtEs had the best DPPH-scavenging effect (IC50 activity: 97±0.7EtEs/mL), while the 0.7GlEs had the strongest effect (IC50: 1.89% 0.7GlEs) for glycerol extraction. In general, the freeze-dried WEs and EtEs had better anti-tyrosinase activities than those of the hot-dried extracts. The anti-tyrosinase activities increased as increasing the extraction concentrations of ethanol. Among the WEs and EtEs of PCfSPs, only the freeze-dried 0.7EtEs had the best anti-tyrosinase activity (IC50: 625±0.7EtEs/mL), while the 0.7GlEs had the strongest activity (IC50: 2.32% 0.7GlEs).

Keywords : purple coneflower seeds ; caffeic acid derivatives ; anti-oxidative activity ; anti-tyrosinase activity
Alkylamides of Echinacea purpurea stimulate alveolar macrophage function in normal rats. International Immunopharmacology 2:381-387


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