

Title Components and antioxidant activity of polysaccharide conjugate from green tea
Author Haixia Chen, Min Zhang and Bijun Xie
Citation Food Chemistry Volume 90, Issues 1-2, March-April 2005, Pages 17-21
Keyword Tea polysaccharide conjugate; Components; Antioxidant activity

Abstract

Tea polysaccharide conjugate (TPC) has been used to cure diabetes in China. In order to characterize the chemical properties and activities of TPC, the TPC was isolated and purified from lower grade green tea. The monosaccharide components and the average molecular weight of TPC were analyzed by gas chromatography (GC) and high performance liquid chromatography (HPLC) methods, respectively. The antioxidant activity of TPC was tested using a deoxyribose assay, a photoreduction of nitro blue tetrazolium (NBT) assay and lipid peroxidation inhibition assay. The antioxidant activity on alloxan-induced oxidative damage was also tested. TPC was a conjugate with the molecular weight (MW) of 120 kDa. TPC exerted significant inhibitory effects on hydroxyl and superoxide radicals and lipid peroxidation with IC_{50} values of 101, 145 and $238 \mu\text{g ml}^{-1}$, respectively. TPC could also improve the activity of superoxide dismutase (SOD) ($p < 0.05$). These results suggested that TPC was a potent antioxidant and there appeared to be a direct connection between antioxidant activity and hypoglycemic activity.