

Comparison of the antioxidative activity between Korean Ginseng and wild-simulated ginseng

Department of Agrofood Resources, National Academy of Agricultural Science, RDA
Yu-Jin Hwang, Inhye Kim, Hye-Im Woo, Sung-Jun Hwang, Dong-Sik Park, Jaehyun Kim, and Kyung-A Hwang*

한국산 인삼과 산양삼 용매 분획물의 항산화 활성 평가

국립농업과학원 농식품자원부 : 황유진, 김인혜, 우혜임, 황성준, 박동식, 김재현, 황경아*

Objectives

Ginseng is one of the most widely used medicinal plants, particularly in traditional oriental medicine for the treatment of various diseases. It has a wide range of pharmacological and physiological actions. It is called wild-simulated ginseng that seeds or young plants of ginseng is autogenous in the deep mountains. It has been thought that wild-simulated ginseng have more pharmacological properties than Korean ginseng. Little studies of wild-simulated ginseng were performed, whereas it has been studied in detail about components of Korean ginseng. Thus, The purpose of this study was to evaluate the antioxidant activity of Korean wild-simulated ginseng and ginseng extracted by using various solvents.

Materials and Methods

Korean ginseng and wild-simulated ginseng were washed with distilled water and cut into pieces. Then, extracts were obtained through three times of the ethanol reflux extraction, suspended in distilled water and then were disjunct with solvent of hexane, chloroform and butanol. DPPH scavenging activity and Superoxide dismutase activity were determined for measurement of samples' antioxidative activity.

Results

The DPPH scavenging effect of both plant fractions decreased in the order of hexane fraction > chloroform fraction > butanol fraction > total ethanol fraction > water fraction. Among them, a hexane fraction of wild-simulated ginseng showed the highest DPPH scavenging activity of 71.4% at 600µg/mL. SOD activity of the H₂O extract was the highest at 400 µg/mL in all fractions. Besides, the H₂O extract of wild-simulated ginseng showed higher activity than that of Korean ginseng. The extract by butanol showed dose-dependent manner, but extracts by other solvents showed higher SOD activity at low concentrations. The activities of those extracts, independent on concentration, had a tendency to decrease. This result was due to the presence of the components that acted like the oxidative accelerator at high concentrations.

.....
Corresponding author: Kyung-A Hwang E-mail: kah366@korea.kr Tel : 031-299-0527

* 시험성적



Fig. 1. A difference in appearance between Korean ginseng and wild-simulated ginseng.

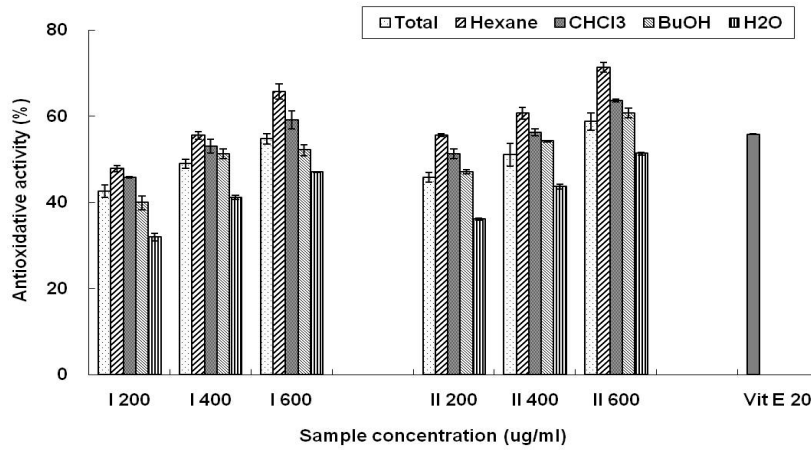


Fig. 2. Electron donating ability of extracts with various solvents. I : Korean ginseng extract II: wild-simulated ginseng extract

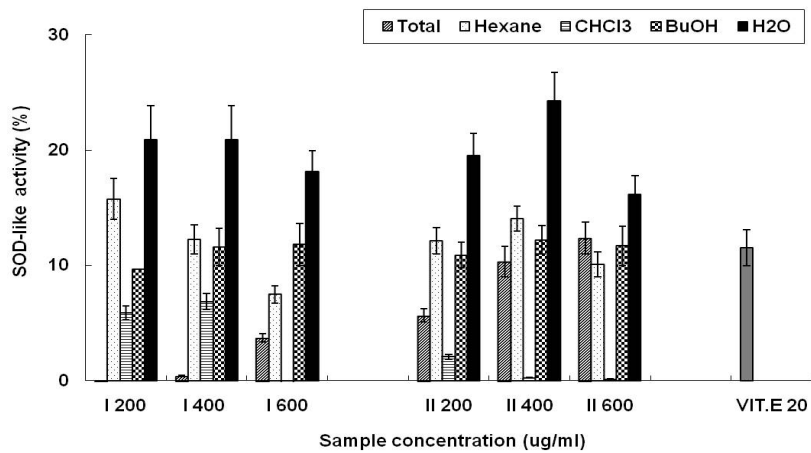


Fig. 3. SOD-like activity of extracts with various solvents. I : Korean ginseng extract II: wild-simulated ginseng extract