P-29

PEROXYNITRITE SCAVENGING ACTIVITY OF HERB EXTRACTS

Ae Ra Kim[1], Ya Ni Zou[1], Tae Hyun Park[1], Jae Sue Choi[2], and Hae Young Chung[1]

[1]College of Pharmacy, Pusan National University, Pusan 609-735 and [2]Faculty of Food Science and Biotechnology, Pukyong National University, Pusan 608-737, Korea
E-mail: kar1119@hanmail.net

Peroxynitrite ($ONOO^-$) is one of cytotoxic species produced by the reaction between superoxide($\cdot O_2^-$) and nitric oxide (NO). The aim of this study was to characterize $ONOO^-$ scavenging constituents from herbs. Methanolic extract derived from one hundred fifty nine herbs were screened out for their $ONOO^-$ scavenging activities. It was investigated that about 33 herbs was excellent scavengers of $ONOO^-$. The extracts exhibited dose-dependent $ONOO^-$ scavenging activities. One of the most effective herbs, *Artemisia iwayomogi* was fractioned with several solvents. The $ONOO^-$ scavenging activity of fractions was in order of ethyl acetate > n-butanol > dichloromethane > water fraction. The ethyl acetate and n-BuOH soluble fractions exhibiting strong $ONOO^-$ scavenging activities were further purified by repeating silicagel and Sephadex LH-20 column chromatographies to yield apigenin 7-methylether (genkwanin), scopoletin, apigenin 7,4`-di-*O* methylether (jaceosidin), apigenin 7,4`-di-*O*-methylether from the EtOAc fraction and chlorogenic acid, 2,4-dihydroxy 6-methoxy acetophenone 4-*O*-β-D-glucoside, quebrachitol, and scopolin from the n-BuOH fraction. Among them, chlorogenic acid, genkwanin, and scopoletin scavenged authentic $ONOO^-$ more efficiently, compared to a well-known $ONOO^-$ scavenger, penicillamine ($1.76 \pm 0.18\ \mu M$). It is suggested that chlorogenic acid might be developed as an effective ONOO- scavenger for prevention of $ONOO^-$ involved diseases.