

Antioxidant and heme oxygenase-1 (HO-1)-induced effects of selected Taiwanese plants

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摘要

Abstract

Recent studies have shown biological effects of heme oxygenase-1 (HO-1) induction and antioxidation in cardiovascular disorders. The ethanol extracts of leaves of 12 selected indigenous Taiwanese plants were investigated for their antioxidant activities, evaluated using assays of 1,1-diphenyl-2-picrylhydrazyl (DPPH), hydroxyl, and superoxide radicals scavenging and reducing power activities as well as the induction of heme oxygenase-1 (HO-1). *Acer albopurpurascens*, *Cinnamomum kanehirai*, *Diospyros discolor*, *Excoecaria kawakamii*, *Koelreuteria henryi*, and *Syzygium formosanum* showed better DPPH-scavenging activities than the other plants. IC(50) values ranged from 1.7 to 8.7 microg/mL. Excepting *Millettia pulchra* var. *microphylla* and *Pittosporum moluccanum*, the extracts displayed hydroxyl-scavenging activities (IC(50) of 0.16-0.67 microg/mL). *A. albopurpurascens*, *D. discolor*, *K. henryi*, and *S. formosanum* also showed good superoxide anion radical scavenging activities and IC(50) values ranged from 12.9 to 28.5 microg/mL. *D. discolor*, *K. henryi*, and *S. formosanum* showed potent reducing power and *M. pulchra* var. *microphylla* and *S. formosanum* exhibited potent HO-1 induced activity. These active plant extracts also contained abundant phenolic constituents. The present results provide candidates to isolate the active constituents and develop natural antioxidants.