The active constituent of antioxidant from the herbs of *Polygonum chinensis*

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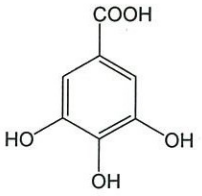
Dry herbs of *Polgonum chinensis* were extracted and partitioned with four different solvents and evaluated by two antioxidant activity tests. The EtOAc layer extract showed the strongest DPPH radical scavenging and Trolox equivalent antioxidant activity. It was subjected on a Dianion column chromatography and was further isolated and purified. Gallic acid **(1)** was then isolated as the active constituent which was elucidated by spectrum analysis.



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Polygonum chinensis L. (PC, Polygonaceae) has been used as a folk medicine in Taiwan to treat infection related symptoms such as the fever, tonsillitis and diarrhea.[1, 2] The aim of this study is to isolate the antioxidant constituents from PC according to the activity-guided isolation process. DPPH radical scavenging[3, 4] and Trolox equivalent antioxidant assays[5] were applied as screening platforms. The dry herbs of PC (680g) were collected in Taiwan. The PC was extracted with H_2O to obtain PCW extract (122.24g). PCW was then partitioned with CH_2Cl_2, EtOAc, n-BuOH and H_2O solvents, respectively, to obtain extracts. Emulsion layer and precipitation layer extracts were also collected. The six different partitioned extracts were evaluated by DPPH radical scavenging and Trolox equivalent antioxidant tests. The results indicated that EtOAc layer extract (PCWA) had the strongest DPPH radical scavenging activity and Trolox equivalent antioxidant activity. PCWA extract was eluted using a Dianion column chromatography with MeOH : H_2O (6 : 10) solvent of decreasing polarities. Six fractions were collected from the eluate which was verified by TLC. In addition, antioxidant activity assays of the six fractions were evaluated. The results all demonstrated that Fraction 2 exhibited the most effective antioxidant activity. Fraction 2 was elucidated to be gallic acid (190.7 mg) using spectroscopic analysis and comparing with authentic sample of gallic acid.

References

1. Xiao, P. G.; Lian W. Y. *The Illustrated Medicinal Plants of China* 1998, **vol 1**, 65.
2. Committee on Chinese Medicine Pharmacy, Department of Health, Taiwan, R.O.C. *The Illustration of Common Medical Plants in Taiwan* 2002, **vol 1**, 182.
3. Lillian, B.; Maria-Joao, F.; Bruno, Q.; Isabel, C. F. R. F.; Paula, B. *Food Chemistry* 2007, **103**, 413–419.
4. Huang, D.; Ou, B.; Ronald, L. Prior *J. Agric. Food Chem.* 2005, **53**, 1841–1856.
5. Yu, H. M.; Wang, B. S.; Huang, S. C.; Duh, P. D. *J. Agric. Food Chem.* 2006, **54**, 3132–3138.

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