O4 ANTIOXIDANT AND HEPATOPROTECTIVE EFFECTS OF POLYGONUM ODORATUM.

Atika Jaruchotikamol[1], Patchareewan Pannangpetch[2],Veerapol Kukongviriyapan[2], Wiboonchai Yutanaviboonchai[3], Bunkerd Kongyingyoes[2], Sontaya Simasathiensopon[2]

[1]*Faculty of Pharmacy and Health Science, Mahasarakham University, Mahasarakham, Thailand 44150*
[2]*Departments of Pharmacology and* [3]*Pathology, Faculty of Medicine, Khon Kaen University, Khon Kaen, Thailand 40002. .*

ABSTRACT

Oxidative stress has been implicated in the pathology of a variety of human diseases, such as ischaemic-reperfusion injury, atherosclerosis, diabetes mellitus and hepatic injury. A potential therapeutic intervention may include natural antioxidants[1]. Therefore we examined the antioxidant activity and hepatoprotective effect of *Polygonum odoratum Lour.* An ethanolic extract of dried whole plant of *P. odoratum* was used in all investigations. The free radical scavenging activity of the extract of *P. odoratum* was determined by a method based on the reduction of the stable free radical DPPH (1,1-diphenyl-2-picrylhydrazyl). The extract (0.01-1000 μg/ml) was found to scavenge DPPH in the dose-dependent manner with the maximum scavenging activity of 90.9 ± 1.01% and IC_{50} of 14.5 μg/ml. The scavenging effect of *P. odoratum* on H_2O_2 production within the rat white blood cells was investigated by using 2-7-dichlorodihydro fluorescein diacetate. The production of H_2O_2 was stimulated by phorbol-12 myristate-13 acetate (0.65 μM). The extract (10 and 100 μg/ml) significantly inhibited the fluorescent signal of H_2O_2 (n=5, $p<0.05$). In order to examine the hepatoprotective effect, ICR mice were pretreated with the extract (0.5, 1 and 2 g/Kg/d) for 3 days before an induction of hepatic injury by an injection of paracetamol 200 mg/kg, intraperitoneally. The plasma levels of liver enzymes, ALT and LDH in the control group (no treatment but given paracetamol) were 14587 ± 1293 and 29187 ± 2469 U/L respectively (n=23). Only the group received 1 g/Kg/d of the extract had the level of ALT and LDH (7726 ± 1452 and 14285 ± 2565 U/L respectively, n=16) significantly lower than the control group. It was concluded that the ethanolic extract of *P. odoratum* has the free radical scavenging activity, the inhibitory effect on the production of peroxide in cells and the hepatoprotective effect.

Reference

1. Maxwell SRJ. Prospects for the use of antioxidant therapies. Drugs 1995; 49: 345-361.