

In vivo Antiosteoporotic Effects of *Dioscorea spongiosa* and Its Constituent, Methyl protodioscin

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Osteoporosis, a major disease of our aging society, results in bone fracture and paralyzation in oldster, especially in post-menopausal women. After screening 30 categories of Chinese traditional herb, both for stimulatory activity on the proliferation of osteoblast cells UMR106 and for inhibitory activity on the formation of osteoclast-like cells, the water extract of rhizomes of *Dioscorea spongiosa* showed strong activities in both cell culture systems. Accordingly, 90% EtOH-H₂O fraction of the water extract showed the strongest activity in these *in vitro* experiments. Further separation of this fraction afforded 28 compounds, in which methyl protodioscin, a major constituent, possessed the strong inhibitory activity both on the formation of osteoclast and the bone resorption. The present study revealed that both 90% EtOH fraction and methyl protodioscin exhibited good effects in preventing bone loss in postmenopausal bone loss models of OVX rats and mice by using pQCT.