

## ANTIOXIDATIVE EFFECT OF *PUERARIA MIRIFICA*

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### ABSTRACT

*Pueraria mirifica* (White Kwao Keur) is a Thai rejuvenating folk medicine which contains many phytoestrogens including miroestrol, deoxymiroestrol and isoflavonoid group (kwakhurin, daidzein, genistein, etc.) which possess estrogenic activity. This study aimed to investigate the antioxidative effect of *Pueraria mirifica* in several models both *in vitro* and *ex vivo*. Free radical scavenging assay using ESR method, the EC<sub>50</sub> of superoxide- and hydroxyl scavenging activity was 49.4 ng/ml and 103 µg/ml, respectively. The scavenging ability to hydroxyl radical was 4.8 times weaker than vitamin C. By the method of DPPH assay, the EC<sub>50</sub> of the quenching DPPH was 19.6 mg/ml. Antioxidant activity of ethanol extract (1mg/ml) was equivalent to 50 µM vitamin C evaluated by ferric reducing antioxidant power (FRAP) assay. The measurement of the resistance of low density lipoprotein (LDL) to oxidation promoted by copper ion *ex vivo*, LDL prepared from hypercholesterolemic rabbits supplemented with orally 100 mg/kg/day *Pueraria mirifica* (*P.mirifica*-group) for 12 weeks showed a significantly decreased susceptibility to Cu<sup>2+</sup>-mediated oxidation *ex vivo*, compared with hypercholesterolemic rabbits with no supplementation (Chol-group). The lag time was prolonged from 115.6 ± 9.7 min in Chol-group to 160.4 ± 6.6 min in *P.mirifica*-group. These data demonstrate that although, *Pueraria mirifica* had mild antioxidative activity in the *in vitro* experiment. However, it could increase the resistance to oxidation of LDL *ex vivo*. Our results may provide the beneficial effect of *Pueraria mirifica* for the cardiovascular system which required further experimental and clinical studies.

**Keywords:** *Pueraria mirifica*, antioxidants, superoxide radicals, hydroxyl radicals, oxidized low-density lipoproteins