

Antinociceptive and Antiinflammatory Effects of the Crude Saponins Obtained from the Leaves and Stem Barks of *Kalopanax pictus* in the rat

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The leaves (KPL) of *Kalopanax pictus* (KP) is used as a vegetable or a functional food in the Korean society. The stem bark (*Kalopanax* Cortex, KPS) has been traditionally used to treat neurotic pain, rheumatoid arthritis and diabetic disease and it is known that the saponin is the active principle of *Kalopanax* Cortex for the disease. This research was undertaken to demonstrate that the leaf saponin of KP has also the antinociceptive and antiinflammatory effects like the saponin from *Kalopanax* Cortex and to compare the effects of several saponins obtained from KP. Antinociceptive and antiinflammatory effects were measured against the saponins shown in the follows: KPL-1 (the saponin obtained from the leaf shoot of KP collected on May), KPL-2 (the saponin from KP collected on June), KPL-3 (the saponin from KP with no thorns), KPS-1 (the saponin from KPS of a Korean habitat), KPS-2 (the saponin from KPS of a Chinese habitat). The antinociceptive test was undertaken by acetic acid-induced writhing-, hot plate-, and tail flicks methods using mice. The antiinflammatory test was also undertaken by measuring the edema in the carrageenan-induced and Freund's complete adjuvant reagent (FCA)-induced rats. The order of activity potency in the antinociceptive and antiinflammatory assays was commonly shown as follows: KPL-3>KPS-1>KPS-2>KPL-1>KPL-2. This order was also observed in the acetic acid-induced vascular permeability test. The antiinflammatory activity in carrageenan-induced assay was also observed as the following order: KLP>KPS-1>KPS-2>KPL-1>KPL-2. In addition, FCA-induced rats as the chronic inflammatory model was used to assess the oxidative stress. Treatment of the rat with the saponins reduced serum thiobarbituric acid-reactive substances (TBARS), hydroxy radical and superoxide dismutase activity caused by FCA together with hepatic TBARS and lipofuscin content. The above finding suggest that the leaf saponin also has the antinociceptive and antiinflammatory activity. It is also suggested that KPL-3 with more potent activity than other tested substances could be developed for a new available saponin material.