

## **In vivo antinociceptive and anti-inflammatory activities of dried- and fermented-processed virgin coconut oil.**

### **Abstract**

**Objective:** The present study was carried out to investigate the antinociceptive and anti-inflammatory activities of virgin coconut oil (VCO) produced by the Malaysian Agriculture Research and Development Institute (MARDI) using various *in vivo* models. **Materials and Methods:** Two types of VCOs, produced via standard drying (VCOA) and fermentation (VCOB) processes were used in this study. Both VCOA and VCOB were serially diluted using 1% Tween 80 to concentrations (v/v) of 10, 50 and 100%. Antinociceptive and anti-inflammatory activities of both VCOs were examined using various *in vivo* model systems. The antinociceptive activity of the VCOs were compared to those of 1% Tween 80 (used as a negative control), morphine (5 mg/kg) and/or acetylsalicylic acid (100 mg/kg). **Results:** Both VCOA and VCOB exhibited significant ( $p < 0.05$ ) dose-dependent antinociceptive activity in the acetic acid-induced writhing test. Both VCOs also exerted significant ( $p < 0.05$ ) antinociceptive activity in both phases of the formalin and hot-plate tests. Interestingly, the VCOs exhibited anti-inflammatory activity in an acute (carrageenan-induced paw edema test), but not in a chronic (cotton-pellet-induced granuloma test) model of inflammation. **Conclusion:** The MARDI-produced VCOs possessed antinociceptive and anti-inflammatory activities. Further studies are needed to confirm these observations.

**Keyword:** Virgin coconut oil; Antinociceptive; Anti-inflammatory; *In vivo*.