

Anti-Inflammatory and Anti-Hyperalgesic Activities of the Crude Ethanolic Extract of Aerial Part of *Alternanthera sessilis* in Egg Albumin-Induced Acute Inflammation Rats

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ABSTRACT

Acute inflammation is the self-protection of the body's attempt in response to the injury and infection, which leads to removal of offending factors and restoration of tissue structure and physiological function. Hyperalgesia is defined as an abnormally greater sensitivity to pain result from a noxious or non-noxious stimulus. *Alternanthera sessilis* (*A. sessilis*) also known as sessile joy weed, belongs to Amaranthaceae family. It is widely used as the traditional medicine in China, India and Taiwan. According to previous study, *A. sessilis* possesses anti-inflammatory activity as the chloroform, ethanolic and aqueous extracts showed significant effect against inflammation induced by carrageenan. All of the above studies showed a significant result with high doses at 200mg/kg to 400mg/kg. There is no study showed anti-hyperalgesic activity of this plant. In this study, anti-hyperalgesic and anti-inflammatory activity of crude ethanolic extract of *A. sessilis* are investigated on fresh egg albumin-induced inflammation at 100, 200 and 300mg/kg of doses. The rats were injected with fresh and undiluted egg albumin subcutaneously at right hind paw and the paw volume of each rat were measured by using plethysmometer. The paw itself was also evaluated for its anti-hyperalgesic effect by using plantar test. Both tests were carried out at every one hourly interval until period of five hours. The results obtained were compared to standard drug, diclofenac sodium (10mg/kg) and control group (0.9% normal saline). The results showed crude ethanolic extract of *A. sessilis* at 200mg/kg gave the highest effect for anti-inflammatory activity consistently. While 300mg/kg of extract showed the highest effect on anti-hyperalgesic activity. Administration of crude ethanolic extract of *A. sessilis* inhibited paw edema and pain showed a non-dose-dependent manner. A further work should be conducted to study the exact mechanism of action of this plant.