EFFICACY OF *AMOMUM TSAO-KO* CREVOST & LEMARIÉ ESSENTIAL OIL IN INTRAGASTRIC TREATMENT OF METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS* INFECTED MICE

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Abstract. Efficacy of *Amomum tsao-ko* Crevost & Lemarié (also known *Lanxangia tsaoko* (Crevost & Lemarié) MF Newman & Škorničk) as essential oil against methicillin-resistant *Staphylococcus aureus* (MRSA) was evaluated in an *in vivo* mouse model. Minimal lethal dose (MLD) of MRSA on Day 7 following intraperitoneal injection was 6.0×10^{10} CFU/kg body weight. Preventive efficacy was evaluated by intragastric application of *A. tsao-ko* essential oil for three days, then an administration of MRSA MLD to mice (n = 10), demonstrating a 50% effective dose (ED_{50}) on Day 7 post-last treatment of 0.42 g/kg body weight/day; while therapeutic efficacy was evaluated by administration of MRSA MLD then intragastric treatment with *A. tsao-ko* essential oil for three consecutive days before determining ED_{50} on Day 7 post-last treatment, with a value of 0.73 g/kg body weight/day. *A. tsao-ko* essential oil ameliorated inflammatory response caused by MRSA infection through regulating serum levels of inflammatory cytokines IL-1β (partially), IL-6, and TNF-α, and histopathological examination demonstrated protection against tissue damages to kidney, liver and lung (partially). These findings suggest *A. tsao-ko* essential oil as a potential treatment of MRSA infection in animals and possibly humans.

Keywords: *Amomum tsao-ko*, ED_{50}, essential oil, histopathological change, inflammation, methicillin-resistant *Staphylococcus aureus*

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