Acute and Repeated Dose 28-Day Oral Toxicity Study of *Garcinia mangostana* Linn. Rind Extract

Pathom Jujun[1*], Krisana Pootakham[1], Yanee Pongpaibul[1] Chadarat Duangrat[1] and Prasit Tharavichitkul[2]

[1]*Department of Pharmaceutical Sciences, Faculty of Pharmacy, Chiang Mai University, Chiang Mai 50200, Thailand*

[2]*Department of Microbiology, Faculty of Medicine, Chiang Mai University, Chiang Mai 50200, Thailand*

**Corresponding author. E-mail: pathomjujun@gmail.com*

ABSTRACT

The ethanolic rind extract of Garcinia mangostana L. (Guttiferae) is composed of mangostin which can be used as an antibacterial agent for the treatment of sorethroat. This study examined acute oral toxicity (OECD 420) and repeated dose 28-day oral toxicity study in rats (OECD 407) for safety in human use. In acute toxicity test, oral administration of 2, 3 and 5 g/kg BW of crude extract showed no toxic signs, no mortalities and no effect on growth rate in both control and experiment groups. In addition, none of them showed gross pathological changes at necropsy. In subacute toxicity test, Sprag-Dawley rats, (13 of each sex in each group) were gavaged with suspension of G. mangostana L. rind extract at the dose of 0, 50, 500 and 1,000 mg/kg BW/day for 28 consecutive days. Rats in the satellite group were given the test material at the dose of 1000 mg/kg/BW for 28 days and observed thereafter for 14 days in order to study the reversibility of adverse effects. Results of the study showed that there were no significant effects on average body weight, relative organ weight, histopathology of organs, clinical biochemistry and hematological parameters of treated rats. In conclusion, the ethanol extract from the rind of G. mangostana at tested dose and time duration did not cause acute or subacute oral toxicity in rats.

Key words: Acute toxicity, Subacute toxicity, OECD 420, OECD 407, Mangosteen rind extract

INTRODUCTION

Mangosteen, *Garcinia mangostana* Linn. (Guttiferae), the rinds of which have been used as a traditional medicine in Thailand for the treatment of trauma, diarrhea and skin infections (Nakatani et al., 2002). The xanthones, α and β mangostins, are major bioactive compounds found in the fruit hulls of the mangosteen (Jinsart et al., 1992;Chairungsrilerd et al., 1996a,b,c). The biological activities of α mangostin have been confirmed to consist of a competitive antagonism of the histamine H1 receptor (Chairungsrilerd et al., 1996a; Iikubo et al., 2002), antibacterial activity