HPLC Determination of Mangostin and Its Application to Storage Stability Study

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

[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: chadarat@pharmacy.cmu.ac.th*

ABSTRACT

A reverse phase high performance liquid chromatography (RP-HPLC) was developed and validated for the determination of mangostin in mangosteen rind crude extract and throat spray preparation. The column was a C-18 analytical column, the mobile phase consisted of methanol-water (95:5% v/v), flow rate 1.5 ml/min and UV detector was set at 319 nm. The resulting chromatograms showed good resolution with a short retention time without interfering peak. Standard curves were constructed in the concentration range of 25-125 µg/ml (R^2>0.998). The percentage recoveries at 3 levels of mangostin addition (30, 50 and 70 µg/ml) were 94.73 to 98.39% for the crude extract and 94.14 to 99.87% for the throat spray with RSDs below 2% (n=5) in all analyzed concentrations. Stability of mangostin in the throat spray containing mangosteen rind extract was also investigated by keeping the products at 4°C, 30°C, 40°C and room temperature for 180 days. The throat spray samples were found to be quite stable up to 180 days at all tested conditions. The validated HPLC method for determination of mangostin in crude mangosteen rind extract and throat spray was simple, rapid, selective and should be suitable for the quality control of mangosteen rind hydroalcoholic crude extract and antibacterial throat sprays.

Key words: Mangostin, HPLC, Mangosteen rind, Throat spray, Validate, Stability

INTRODUCTION

Garcinia mangostana L. of the family Clusiaceae (Guttiferae) is a tree found in Thailand and other Southeast Asian countries. Its delicious and unique flavor has made this fruit highly popular. Utilization of this plant as herbal medicine has been dated back many years. In Thai traditional medicine, pericarp has been used to treat diarrhea, dysentery, skin infections and as an anti-inflammatory agent (Farnsworth and Bunyapraphatsara, 1992). Xanthones, terpenoids and