

# CHAPTER 1

## INTRODUCTION

### 1.1 General introduction

*Senna alata* (L.) Roxb. (*Cassia alata* L.) is a plant belonging to the family Leguminosae. It has a number of common names, including Chum-Het-Thet (Thai), Candel bush, Acapulo, Ringworm bush and, Calabria bush (English). *S. alata* leaves have been selected and recommended for the primary health care system in Thailand for the treatment of dermatomycotic infections (Farnsworth and Bunyapraphatsara, 1992). Anthraquinone glycosides have been demonstrated as the active constituents for the laxative properties (Elujoba *et al.*, 1989), while the aglycones including aloe-emodin, rhein, emodin, and chrysophanol possess antifungal activity (Ibrahim and Osman, 1995). The leaf extract of *S. alata* has been reported to have antifungal activity against *Trichophyton mentagrophytes*, *Trichophyton rubrum* and *Microsporum gypseum* with MIC values of 125 mg/ml and against *Microsporum canis* with MIC value of 62.5 mg/ml (Ibrahim and Osman, 1995). Recently, an antifungal cream was developed from the leaf extract of *S. alata* (วันดี กฤษณพันธ์, 2544). However, poor quantity of *S. alata* leaves due to the content of anthraquinones being lower than the standard value in the monograph has been a major problem in the production of the herbal medicine from *S. alata* (Panichayupakaranant and Intaraksa, 2003). Therefore the potency of the antifungal activity of *S. alata* leaf extract should be improved to minimize the concentration of the extract used in the antifungal formulations. In addition, the interference compounds in the extract such as chlorophylls should be excluded from the extract to improve the physical appearance and stability of the antifungal cream.

As part of our interest in extraction and purification methods that can improve the anthraquinone content in *S. alata* leaf extract, the suitable solvent for extraction and the chromatographic method for purification were examined. Some physical properties and stability of the extract were also studied in order to get a useful information for a future studies on development of the herbal medicine from the extract.

## 1.2 Objectives

- 1.2.1 To develop the methods of extraction and purification of *S. alata* leaf extracts in order to obtain the anthraquinone high-yielding.
- 1.2.2 To study on some physical properties and stability of the extract in order to get a useful information for a future studies on development of the herbal medicine from the extract.
- 1.2.3 To establish a monograph of the anthraquinone high-yielding *S. alata* leaf extract for further standardization.