CHAPTER I

INTRODUCTION

Legumes are plants of the pea or bean family that are rich in high quality protein [1], providing man with a highly nutritional food resource. Legumes are utilized for a variety of other purposes including timber, medicine, tannins and gums [2]. Leguminous plants have formed a popular subject of research owing to the abundance of proteins and polypeptides with important biological activities that they elaborate such as α-amylase inhibitor [3,4], chitinase activity [5], lectins [6,7], antifungal [8], antiviral [9], antitumor [10], anticancer [1] and anti-HIV [11] proteins.

Sesbania grandiflora (L.) Desv. [12] (Khae baan) is a leguminous plant in subfamily *Papilionoideae* . It is commonly seen growing on the dikes between rice paddies and in backyard vegetable gardens of Thailand. Various parts of *Sesbania grandiflora* have been used in folk medicine [13] for treating catarrh, headache and epilepsy and resorted to be aperient, diuretic, emetic, emmenagogue, febrifuge, laxative, and tonic. Because of this legume plant also rich in protein, research study of this plant mostly concentrates in the result of using *Sesbania grandiflora* as a fodder [14-19]. While there have been a few proteomic reports [20,21] when compare with other legume. One of this is the analysis of the plastid gene of maturase K protein in chloroplast of *Sesbania grandiflora* [20]. Therefore, it is interesting to study on *Sesbania grandiflora* protein which is likely as bioactive protein similar to protein found in other legume. The protein study of this *Sesbania grandiflora* should give knowledge, which is an important advantage for medicinal application and other utility.

The objective of this research is to characterize proteins from *Sesbania grandiflora* flowers. Flowers of *Sesbania grandiflora* will be extracted and separated by chromatography and electrophoresis technique. Afterwards, the protein will be identified by using mass spectrometer and then determined protein profile by database searching.