

CHAPTER IV

CONCLUSION

Fresh leaves of *Excoecaria cochinchinensis* Lour. var. *viridis* Merr. (Euphorbiaceae) were investigated for their chemical constituents. Eight substances were isolated and characterized by means of physical properties, chemical reactions and spectroscopic data. They could be summarized as shown in Table 4.1 .

It was previously found that four compounds isolated from this plant possessed biological activities. Methyl 10-epipheophorbide-a is useful in cancer diagnosis and therapy, especially in photodynamic therapy. There were reports which revealed biological activities of kaempferol such as anti-enzyme cyclic AMP-dependent protein kinase of mice's liver, anti-enzyme myosin light chain kinase of chicken, anti-mutagenic of AFB₁ in *Salmonella typhimurium* TA 100, cancer preventive, cholertic, diuretic, natriuretic and mutagenic. Gallic acid was used as astringent and styptic. *Chiro*-inositol was used for reducing elevated blood sugar levels in humans.

This research showed that this plant contains several compounds which has medicinal activities. Furthermore, these compounds had not been previously report in *Excoecaria* genus thus the chemotaxonomic data of plants in this genus is increased.

Table 4.1 All substances isolated from the leaves of *E. cochinchinensis* Lour.var. *viridis* Merr.

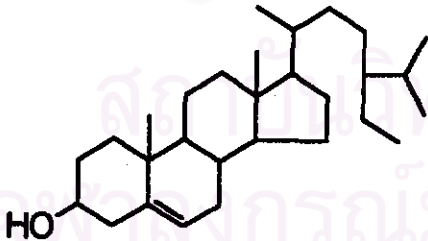
Substance	Weight (mg)	% wt. by wt. of fresh leaves ($\times 10^{-2}$)
<p>a mixture of long chain carboxylic acid (docosanoic acid , tricosanoic acid , tetracosanoic acid , pentacosanoic acid , hexacosanoic acid , heptacosanoic acid , octacosanoic acid)</p> <p>$\text{CH}_3-(\text{CH}_2)_n-\text{CH}_2-\text{COOH}$</p> <p>$n = 19 - 25$</p>	47	0.11
<p>β-sitosterol</p> 	563	13.09

Table 4.1 (continue)

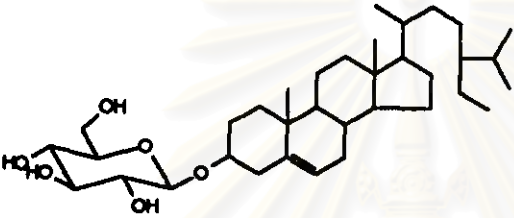
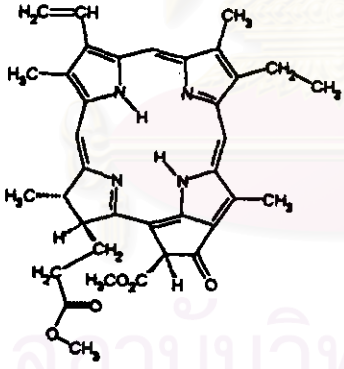
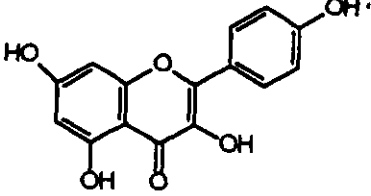
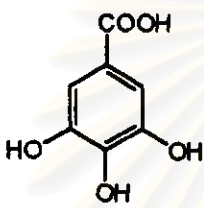
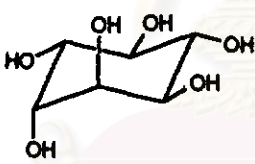
Substance	Weight (mg)	% wt. by wt. of fresh leaves ($\times 10^{-2}$)
<p>β-sitosteryl-3-O-β-D-glucopyranoside</p>  <p>The structure shows a beta-D-glucopyranoside ring attached to the 3-OH position of a sitosterol steroid nucleus. The steroid nucleus consists of four fused rings (A, B, C, D) with various methyl and ethyl substituents.</p>	370	0.86
<p>methyl 10-epipheophorbide-a</p>  <p>The structure is a complex porphyrin ring system with four nitrogen atoms. It features a vinyl group (H₂C=CH-), a methyl group (H₃C-), and an ethyl group (-CH₂-CH₃) on one of the pyrrole rings. Another pyrrole ring has a methyl group (CH₃) and a methyl ester group (-CO₂CH₃). The central magnesium atom is coordinated by four nitrogen atoms.</p>	8	0.02
<p>kaempferol</p>  <p>The structure is a flavone, consisting of a chromone core with a phenyl ring at the 2-position. The phenyl ring has a hydroxyl group (-OH) at the para position. The chromone core has hydroxyl groups (-OH) at the 5 and 7 positions and a carbonyl group (=O) at the 4-position.</p>	42	0.10

Table 4.1 (continue)

Substance	Weight (mg)	% wt. by wt. of fresh leaves ($\times 10^{-2}$)
gallic acid 	87	0.20
chiro-inositol 	20	0.05
KCl	12	0.03