

CHAPTER IV

CONCLUSION



In this research, the leaves of "Makaa" were investigated for their chemical constituents because of their utilizations as tribal medicine. Moreover, the branches of *B. ovata* had been studied previously(27). Therefore, chemical constituents in the leaves of Makaa would contributed more information of *B. ovata*.

From the branches of *B. ovata*, eleven chemical constituents were obtained from chloroform and hexane extracts which were separated by using column chromatography, they are: " a mixture of seven long chain aliphatic hydrocarbons (heptacosane, octacosane, nonacosane, triacontane, hentriacontane, dotriacontane and tritriacontane), a mixture of long chain aliphatic esters(from three long chain aliphatic alcohol and eleven long chain aliphatic carboxylic acids), a mixture of three steroid esters (β -sitosteryl hexadecanoate, stigmasteryl hexadecanoate and campesteryl hexadecanoate), friedelin, friedelan-3 β -ol, a mixture of three long chain aliphatic alcohols (triacontanol, hentriacontanol and dotriacontanol), a mixture of long chain thirteen aliphatic carboxylic acid (tricosanoic acid, tetracosanoic acid, hexacosanoic acid, heptacosanoic acid, octacosanoic acid, nonacosanoic acid, triacontanoic acid, hentriacontanoic acid, dotriacontanoic acid, tritriacontanoic acid, tetratriacontanoic acid, pentatriacontanoic acid and hexatriacontanoic acid), *trans*-triacontyl-4-hydroxy-3-methoxy cinnamate, a mixture of three steroids(β -sitosterol, stigmasterol and campesterol), a mixture of three steroid glycosides(β -sitosteryl-3-O- β -D-glucopyranoside, stigmasteryl-3-O- β -D-glucopyranoside and campesteryl-3-O- β -D-glucopyranoside), a mixture of triterpenoid which has ketone structure.

In this research, eight chemical constituents of the leaves of *B. ovata* was obtained from hexane, dichloromethane and methanol extracts which were separated by column chromatography they are:

BOV1 the bright white plate (equivalent to 0.26% wt.by wt. of Fraction I, 0.20% wt.by wt. of Fraction II) as a mixture of eight long chain aliphatic hydrocarbons (hexacosane, heptacosane, octacosane, nonacosane, triacontane, hentriacontane, dotriacontane and tritriacontane) m.p. 61-63 °C, $R_f = 0.62$

BOV2 the white amorphous solid (equivalent to 0.56% wt.by wt. of Fraction I, 1.18% wt.by wt. of Fraction II) as a mixture of long chain aliphatic esters, m.p. 77-78 °C

BOV3 the white amorphous solid (equivalent to 0.23% wt.by wt. of Fraction I, 0.17% wt.by wt. of Fraction II) as a mixture of eight long chain aliphatic alcohols (hexacosanol, nonacosanol, triacontanol, hentriacontanol, dotriacontanol, tritriacontanol, tetratriacontanol and pentatriacontanol) m.p. 82-86 °C, $R_f = 0.60$

BOV4 the white needle (equivalent to 28% wt.by wt. of Mixture II) as friedelin (friedelan-3-one) ($C_{30}H_{50}O$) m.p. 257-260 °C, $R_f = 0.82$

BOV5 the bright white plate (equivalent to 34.67% wt.by wt. of Mixture II) as friedelan-3 β -ol ($C_{30}H_{52}O$) m.p. 279-280 °C, $R_f = 0.68$

BOV6 the white needle (equivalent to 0.56% wt.by wt. of Fraction I, 0.40% wt.by wt. of Fraction III, 0.64% wt.by wt. of Fraction IV) as stigmasterol ($C_{29}H_{48}O$) m.p. 160-162 °C, $R_f = 0.46$

BOV7 the bright violet amorphous (equivalent to 0.01% wt.by wt. of Fraction III); m.p. 205-207 °C, $R_f = 0.88$ (this substance cannot be identified)

BOV8 black amorphous solid (equivalent to 0.02% wt.by wt. of Fraction III); m.p. 194-196 °C, $R_f = 0.88$ (this substance cannot be identified)

When these substances from the leave part compared with those derived from the branch part, they were similar to have friedelin and friedelan-3 β -ol. Other substances such as the mixture long chain aliphatic hydrocarbon, ester and alcohol were similar to find in the branch but they were different in number of carbon in these mixtures. Steroid in the leave part was stigmasterol but the branch part had a mixture of 3 steroids (β -sitosterol, stigmasterol and campesterol). In the leave part was found BOV7 and BOV8 whose chemical constituent were different from those in the branch part.



ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย