

CHAPTER V

CONCLUSION

Extraction of the aerial part of Andrographis paniculata Nees with ethanol yields 22.21% crude extract. The ethanolic crude extract was fractionated by chloroform and water. Using chromatographic and recrystallisation techniques 5 compounds were isolated.

14 -deoxy -11,12 -didehydroandrographolide (4.53% yield), Andrographolide (3.52% yield), and Neoandrographolide (2.35% yield) were isolated from chloroform fraction. Andrographiside (0.26% yield) were isolated from aqueous fraction. 14-deoxyandrographolide - 19 β -D-glucoside (0.54% yield) was isolated from chloroform and aqueous fraction.

All of the isolated compounds were characterized by using physicochemical properties. The spectroscopic techniques revealed the characteristic of diterpenoid and diterpenoid glycoside compound.

14 - deoxy - 11,12 - didehydroandrographolide and andrographolide are labdane type diterpenoid lactone compounds.

Neoandrographolide, 14-deoxyandrographolide -19 β -D-glucoside and Andrographiside are labdane type diterpenoid lactone glycoside.

IR spectra of these diterpenoids confirmed hydroxy substituted and ester group in the lactone ring of the structure.

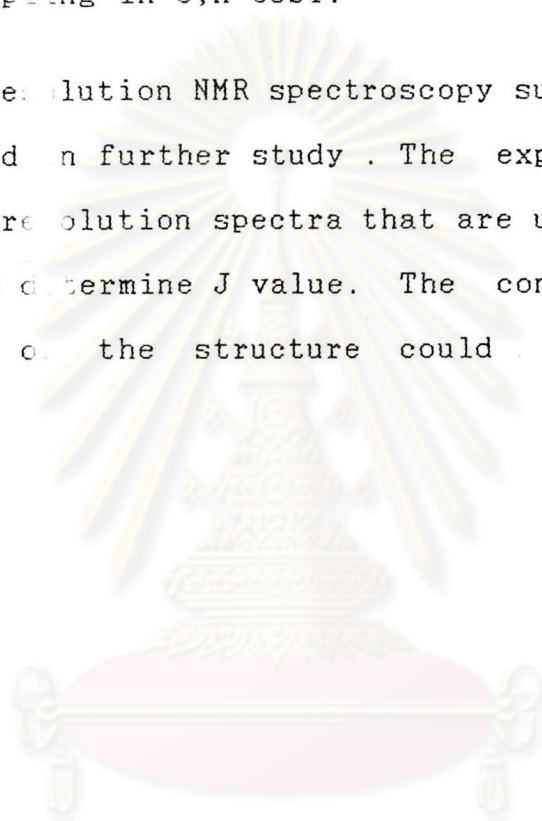
Proton NMR spectra of these diterpenoids confirmed vinyllic group at C-17. Neoandrographolide, 14-deoxyandrographolide -19 β -D-glucoside and Andrographiside which had glucose in molecule could be elucidated structure by comparing their structure with glucose spectra. Protons of glucose were shown at 3-5 ppm. in proton spectrum and 50-103 ppm. in the carbon-13 decoupling spectrum.

Aglycone part of Andrographiside had the same structure as Andrographolide, Both showed H-3 and H-14 in the heteroatom coupling region and H-12 in the double bond region.

14 - deoxy - 11,12 - didehydroandrographolide, Neoandrographolide and 14 - deoxyandrographolide -19 β -D-glucoside had no hydroxy group at C-14 but had double bond that showed proton signal in the double bond region at 5-7 ppm.

Protons in the ring of these diterpenoid lactone were assigned by considered of the neighbouring heteroatom that might effect the chemical shift. The coupling with geminal, vicinal or allylic proton coupling such as H-17(a,b) had allylic coupling with H-7 and H-9 that could be seen the coupling in C,H COSY.

High resolution NMR spectroscopy such as 500 MHz NMR may be used in further study. The experiment could provide higher resolution spectra that are unambiguous to interpret and determine J value. The conformation and configuration of the structure could be explained undoubtedly.



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