



## CHAPTER V

### CONCLUSION

From the experimental data obtained showed that the four diterpene lactones in the leaves of *Andrographis paniculata* could be determined by the high performance liquid chromatographic method, by using a C-18 column as stationary phase and methanol : water (42 : 58) as mobile phase. The retention time of andrographolide, deoxyandrographolide-19 $\beta$ -D-glucoside, dehydroandrographolide and neoandrographolide are at 5.67, 11.34, 18.85, 25.25 minutes, respectively. Sample preparation could be done by soxhlet extraction with methanol and the methanolic solution can be directly injected to the HPLC system. This chromatographic procedure were simple, convenient and showed high accuracy and good reproducibility. This method analysis can potentially be used to determine the diterpenoid contents in any forms of commercially available preparation of *Andrographis paniculata* as the quality control process.

The determination of four diterpenes lactone in the leaves of *Andrographis paniculata*, collected monthly revealed that the plant as contain dehydroandrographolide with highest quantity (7.30% w/w) in April and lowest quantity (0.61% w/w) in December, andrographolide with

highest quantity (6.02% w/w) in November and lowest quantity (0.82% w/w) in February, neoandrographolide with highest quantity (2.02% w/w) in December and lowest quantity (0.61% w/w) in April, and deoxyandrographolide-19 $\beta$ -D-glucoside with highest quantity (3.81% w/w) in March and the lowest content which was too low to be detected was in October to November. Thus, appropriate time to collect the leaves of *Andrographis paniculata* is now recorded.

This research provided fundamental data needed for further standardization for this medicinal plant in the future applications.



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