CHAPTER V

CONCLUSION

The present work on the entire plant of *Usnea siamensis* Wainio has led to the isolation of three compounds. The identification of isolated compounds was based on the spectral data and comparison of hRf values on several TLC systems. Among the isolated compounds are identified as the known compounds of three groups; a dibenzofuran derivative : (+)-usnic acid, a lichen depside : atranorin, and a lichen depsidone : isomeric form of stictic acid.

The major constituent, (+)-usnic acid, shows antibacterial activity against gram-positive bacteria used in this work such as *Staphylococcus aureus*, methicillin sensitive and resistant strains, *Staphylococcus epidermidis, Staphylococcus citeus, Staphylococcus mirabilis*, coagulase negative *staphylococcus, Bacillus subtilis,* and *Bacillus pumitis* at the concentration of 0.1 mg/ml. These will lead to the study on the mechanisms of action of this compound.

The quantitative analysis of (+)-usnic acid using TLC-densitometric technique is successive and reproducibility. The sample of *Usnea siamensis* Wainio from Doi intanon, Chiangmai contains relatively high level of (+)-usnic acid at 4.31% of dry weight whereas the sample from Pu Luang, Loei contains lower level at 3.43% of dry weight.

This work is the first report on the chemical constituent from Thai lichen, *Usnea siamensis* Wainio about the phytochemical study, quantitative and antibacterial evaluation of the isolated compound. However, there are a great number of Thai lichens which have not been chemically studied. This study reveals the interesting views of lichen components which may lead to the discovery of medicinal important compound for pharmaceutical reserch and development