

## CHAPTER 4

### CONCLUSION

Similar to several other marine organisms, the sponge *Corticium* sp. is among the prolific sources of unusual metabolites never found associated with terrestrial plants and animals. The stigmastane-type steroidal alkaloids, the major chemical constituents of the *Corticium* sponges, were reported active in wide range of biological systems, from cytotoxicity to antifungal and anti-HIV (De Marino *et al.*, 1999; Lee *et al.*, 2001). Here, the isolation and structure elucidation of 4-acetoxy-plakinamine B (**103**) were reported. The compound is a new member of plakinamine-type alkaloids, which are common among several species of *Corticium*. The AChE-inhibiting activity of **103** is also reported here for the first time.

As already discussed, the potency of **103** in AChE-inhibiting assay was in a comparable range to that of galantamine (approximately fivefold less active). The activity was also in a same range to, or better than, that of most AChE-inhibiting steroidal alkaloids (Zaheer-ul-Haq *et al.*, 2003b; Khalid *et al.*, 2004a). The compound **103** was virtually non-toxic against cancer cell lines, implying potential for further development. It is therefore interesting to explore further on other derivatives in the same family of compounds.

The difficulty encountered throughout this investigation laid primarily on the isolation of compounds with hydrophobic core structures, yet highly polar due to hydrophilic and basic nitrogenated functionalities. The loss of minor components due to the basic entrapment onto acidic SiO<sub>2</sub> may be overcome by uses of rather neutral or basic chromatographic packing materials, such as alumina, or by that of bonded-phase chromatography specific for basic functional groups.

Overall, this work has demonstrated that Thai marine organisms are among the potential sources for biologically active compounds. The observation made earlier in Chapter 1 regarding the majority of marine natural products as cytotoxicity has been extended to other branch here, i.e., the enzyme-inhibiting activity. Extensive studies on the exploitation of such magnificent bioresources will lead to a better management policy on the marine bioresource utilization towards the prosperity and sustainability.



