

CHAPTER V

CONCLUSION AND RECOMMENDATION

The present work led to the isolation of three brominated C-18 polyacetylenic acids in terms of their methyl esters from a Thai marine sponge, *Petrosia* sp. **H1-A** and **H-2** are known as methyl 18-bromo-(13*E*, 17*E*)-octadeca-13,17-diene-5,7,15-triynoate and methyl 18-bromo-(17*E*)-octadeca-17-ene-5,7,15-triynoate, respectively. **H-1B** exhibited the new structure as the inseparable isomer of H-1A. **H-1B** is identified to be methyl 18-bromo-(5*Z*, 17*E*)-octadeca-5,17-diene-7,13,15-triynoate. All compounds showed potent activity against brine shrimp lethality assay.

There are other bromopolyacetylenic compounds whose structures have not been elucidated (H-3) because the mixture showed the complex ¹H-NMR spectrum. Furthermore, the compound H-3 was easily degraded. It required immediately spectroscopic data after isolation. It also showed activity against brine shrimp lethality assay at LD₅₀ 2.8 µg/ml. While the 90% v/v methanol extract showed significant activity in brine shrimp assay, the butanol extract showed good antimicrobial activity against *Bacillus subtilis* : inhibition diameter 4 mm at 100 µg/disc (Tables 5, 6). Therefore, the further works will be carried on these bioactive fractions.

The brominated polyacetylenic acids are quite rare in natural products and they have never been reported from the terrestrial plants. There are a few compounds isolated from the marine sponge only from the genus of *Xestospongia* and *Petrosia* (Table 3) which were classified in Family Nepheliospongiidae (Bergquist and Wells, 1983). The biosynthesis pathway of these compounds has not yet been studied. These brominated polyacetylenic acids showed a variety of biological activities, e.g., antimicrobial, antifungal, Na⁺/K⁺ ATPase inhibitory, and HIV-1 protease inhibitory (Table 4). Thus, further investigation will be interesting to carry on.