

CHAPTER 5

CONCLUSION

Seventy five endophytic fungi were isolated from *Croton sublyratus* leaves. Plant samples were collected from four sources which were Institute of Biotechnology and Genetic Engineering, Chulalongkorn University, Bangkok, Panomsarakam district Chachengsao Province, Muang district Prachuap Khiri Khun Province and Patum Thani Province.

The antimicrobial activities of all isolates were tested by dual agar diffusion technique. Twenty nine isolates inhibited at least one microorganism.

Fungal isolate CsPr03 was chosen for study of the bioactive compounds because it gave the best activity. Fermentation broth of this fungal active against *B. subtilis* ATCC 6633, *S. aureus* ATCC 25923, *E. coli* ATCC 25922, and *S. cerevisiae* TISTR 5169. Fungal isolate CsPr03 was identified as *Bipolaris spicifer* based on morphological features and nucleotide sequencing of ITS region, respectively.

From isolation and purification of crude culture broth and crude mycelium by chromatography technique. Two pure compounds were elucidated by using their physical properties and spectroscopic techniques. Compound 1 was a curvulin and compound 2 was emodin.

Antimicrobial activities and cytotoxicity of the pure compounds were tested. It was found that curvulin was active against *B. subtilis* ATCC 6633, *S. cerevisiae* TISTR 5169 at the concentration of 15.62 and 500 $\mu\text{g/ml}$., respectively, and showed no activity on cytotoxicity against 5 tumor cell lines. Emodin was active against *C. albicans* at the concentration of 500 $\mu\text{g/ml}$. And compound 3 was active against *S. aureus* ATCC 25923 at the concentration of 125 $\mu\text{g/ml}$.