CHAPTER V

CONCLUSION

The objective of this research were isolation the metabolites from *Emericella variecolor* Berk and Br., the endophytic fungus obtained from Chachoengsao Province, culture into Malt extract broth (MEB), Malt Czapek-Dox broth (MCzB) and Czapek-Dox broth (CzB), analysis of C:N ratio of three culture media for compared the isolated metabolites, isolation of metabolites of mycelia and broth from *Emericella variecolor culture* into three media and determined the metabolites by spectroscopic techniques. The isolated compounds were tested for their cytotocicity against cancer cell lines including HEP G2 (hepatoma), SW 20 (colon), CHAGO (lung), KATO-3 (gastric) and BT474 (braest) cancers. Inaddition, the metabolites were tested for their microbial activity against 5 microorganisms were *Bacillus subtilis* ATCC 6633, *Staphylococcus aureus* ATCC 25923, *Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* 27853 and *Candida albicans* ATCC 10231. In addition, the metabolites were tested for free radical scavenging of antioxidant.

Crude EtOAc mycelium extracted culture in MEB obtained stellatic acid, ergosterol and a novel sesterterpene, emervaridione and crude EtOAc broth extracted culture in MEB obtained varioxiranediol and varitetraol A and dihydroterrein. Crude EtOAc mycelium extracted culture in MCzB obtained stellatic acid, ergosterol, two known xanthones,14-methoxy tajixanthone 25-acetate and tajixanthone hydrate, two known anthraquinone, 1-hydroxy-6,8-dimethoxy-3-methylanthraquinone and 4,6-dihydroxy-5,7-dimethoxy-2-methylanthraquinone, and two novel compounds, evanthraquinone A and evanthraquinone B, while EtOAc crude extracted from fermentation broth in MCzB obtained 4,6-dihydroxy-5,7-dimethoxy-2-methyl anthraquinone and 1,2,8-Trihydroxy,-3-methoxy-6-methylanthraquinone (Dermoglaucin), two novel compounds, emervaridionin and varitetraol B. Crude EtOAc mycelium extracted culture in CzB obtained stellatic acid and ergosterol and crude EtOAc broth extracted culture in CzB obtained varitetraol and varitetraol C.

The bioassay of cytotoxic activity against five human cancer cell lines in *vitro*, which were including HEP G2 (hepatoma), SW 20 (colon), CHAGO (lung), KATO-3 (gastric) and BT474 (braest) cancers found that 14-methoxy-tajixanthone-25-acetate exhibited moderately cytotoxic activity against KATO-3 (gastric), BT474 (braest), SW 620 and HEP G2 (hepatoma) cell lines in concentration 11.5, 14.1, 14.4 and 17.6 μM, respectively. Tajixanthone hydrate exhibited moderately cytotoxic activity against KATO-3 (gastric), CHAGO (lung), BT474 (braest), SW 20 (colon) and HEP G2 (hepatoma) in concentration 10.9, 11.6, 12.3, 13.6 and 16.4 μM, respectively. The five metabolites, 1-hydroxy-6,8-dimethoxy-3-methylanthraquinone,4,6-dihydroxy-5,7-dimethoxy-2-methyl anthraquinone,1,2,8-Trihydroxy-3-methoxy-6-methylanthraquinone (Dermoglaucin), evathrasterol A and B were inactive for antimicrobial and antioxidant activity.