

CHAPTER 4

CONCLUSION

In summary, The chemical constituent of stems of *Cudrania cochinchinensis* was isolated from hexane and dichloromethane crude extracts to yield seven compounds. The chemical structures were characterized by means of spectroscopic studies, physical properties and biological activities were examined. The isolated compounds are summarized as follows.

1. Biochanin A
2. 7,3'-Dihydroxy-2',4'-dimethoxyisoflavanone or violanone
3. Pinnocembrin
4. 7-Hydroxy-2',4'-dimethoxyisoflavanone or sativanone
5. 8,2',3'-Trihydroxy-7,6'-dimethoxyisoflavan-4-ol (**new compound**)
6. 7-Hydroxy-4'-methoxyflavone
7. Cycloartenone

The chemicals investigation of the stems of *C. cochinchinensis* as described in this study was firstly reported, and the isolated compounds were early reported in the plant. Only compound 5 was a new compound.

In terms of biological activities, Compounds 2 and 5 showed significant free radical scavenging activity on DPPH (IC_{50} 138.8, and 61.2 μ M, respectively), while compounds 1, 3, and 4 showed high in-vitro cytotoxicity against KB cell lines.

Compound 5 (new compound) also showed highest %NBT reduction inhibition (29.60) and closed to allopurinol (34.65), an oral drug to treat gout. Compounds 2 and 6 showed moderate %NBT reduction inhibition (12.69, 11.46).

The isolated compounds from this plant exhibited free radicals scavenging on DPPH, in-vitro cytotoxicity against KB cell lines, and % NBT reduction inhibition on xanthine-xanthine oxidase system. From these activities, this plant has a potential to be chemopreventive from oxidation and some of them can be developed as a treatment for gout.

Proposal for the Future Work

In previous papers reported¹⁴⁻¹⁹ the roots of *C. cochinchinensis* produce a variety of flavonoids and xanthenes. Our investigation of the stems of this plant has led to isolation and characterization of mostly flavonoids. The naturally occurring flavonoids always play an important role because of their biological activity as antimicrobials, antiallergenic, antiviral, anti-inflammatory, including antioxidants. More substantially, 7,3'-dihydroxy-2',4'-dimethoxy isoflavanone or violanone, 8,2',3'-trihydroxy-7,6'-dimethoxyisoflavan-4-ol (**new compound**), flavonoids, isolated from the stems of *C. cochinchinensis* showed high free radical scavenging activity on DPPH, while Biochanin A, Pinnocembrin, 7-hydroxy-2',4'-dimethoxyisoflavanone or sativanone showed high in-vitro cytotoxicity against KB cell lines and 8,2',3'-trihydroxy-7,6'-dimethoxyisoflavan-4-ol also showed highest %NBT reduction inhibition. All of isolated compounds might be worthwhile to test further for other cell lines or specific bioassay. From above results, the isolated compounds might be proposed as bioactive compounds from this medicinal plant.

Another aspect that would provide more fulfillment to this research is a chemotaxonomic study on chemical constituents from the stems of this plant on more polar parts, for example, in ethyl acetate and methanol crude extracts.