CHAPTER V

CONCLUSION

Investigation of chemical constituents from the aerial parts (leaves and stems) of *Ellipeiopsis cherrevensis* (family Annonaceae) led to the isolation of seven compounds including three cyclohexene derivatives, three flavonoids and an alkaloid. A new cyclohexene derivative trivially named ellipeiopsol D and two other cyclohexenes, namely, ferrudiol and zeylenol, together with a rare C-benzylated chalcone, 2′,4′-dihydroxy-3′-(2,6-dihydroxybenzyl)-6′-methoxychalcone, isolated from nature for the first time, were obtained from the $CHCl_3$ extract of its leaves. Two flavonoid glycosides, tiliroside and kaempferol-3-*O*-rutinoside, were isolated from the more polar MeOH extract of the same plant part. An oxoaporphine alkaloid, lanuginosine, was obtained from both $CHCl_3$ and MeOH extracts of *E. cherrevensis* stems, whereas the latter extract yielded an additional amount of tiliroside.

Phytochemical study on the leaves and stems of another annonaceous plant, *Stelechocarpus cauliflorus*, afforded eleven known compounds including four lignans, four alkaloids, two flavonoids and a sesquiterpenoid. Hexane extract of its leaves yielded spathulenol, which is a sesquiterpene alcohol, and three lignans: galgravin, and the neolignans licarin A and acuminatin. Hexane extract of its stems also yielded acuminatin, as well as a 2:1 mixture of veraguensin and galgravin, both of which are stereoisomers. The more polar ethyl acetate extract of *S. cauliflorus* leaves gave, upon purification, two dihydroflavonol rhamnosides: engeletin and astilbin. In addition, four aporphine alkaloids, namely, piperolactams A and D, aristolactam AII and noraristolodione, were isolated from the ethyl acetate extract of its stems.

Chemical constituents from both plants were evaluated for a number of biological activities e.g. antituberculosis, antimalarial, anti-herpes simplex virus type 1, stimulation of lymphocyte proliferation and cytotoxicity to cancer cell lines. Both the C-benzylated flavonoid 2′,4′-dihydroxy-3′-(2,6-dihydroxybenzyl)-6′-methoxy-chalcone and the neolignan licarin A displayed cytotoxic effect against all three cancer cell lines tested (NCI-H187, KB and BC), with IC_{50} values in the range of 1.40-13.92 μg/ml, whereas acuminatin was weakly cytotoxic to only the KB cell line (IC_{50} = 16.32 μg/ml). The chalcone also exhibited antimalarial (EC_{50} = 7.1 μg/ml)

and antituberculosis activities (MIC = 25 μg/ml). In addition, acuminatin and the new cyclohexene derivative, ellipeiopsol D, showed antituberculosis activity with MIC values of 12.5 and 200 μg/ml, respectively.

Only the constituents of *E. cherrevensis* were assayed for their roles on lymphocytes and the cyclohexenes and flavonoids from this plant appeared to stimulate the lymphocyte proliferation, while lanuginosine produced the opposite effect.

Bioactivity-guided extraction of *S. cauliflorus* leaves revealed that the two dihydroflavonol glycosides isolated from this plant possessed potential to prevent complications in diabetic patients. Engeletin was better than astilbin in acting as an inhibitor of aldose reductase, while the latter compound was more active as an AGEs inhibitor.

None of the compounds from the two plants studied showed any significant anti HSV-1 activity.