STUDIES ON THE STRUCTURE AND BIOLOGICAL ACTIVITY OF THE CHEMICAL CONSTITUENTS OF THE LEAVES OF *IPIL, HANDALAMAY* AND *LIPANG ASO*

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Abstract

Purification of the respective crude chloroform fractions of *Ipil*, *Handalamay* and *Lipang aso* through silica gravity column chromatography employing appropriate solvent systems have yielded a number of sub-fractions.

Brine shrimp lethality tests of selected sub-fractions revealed some of them to have very remarkable cytotoxicities against the brine shrimp *Artemia salina*. The highest cytotoxicity was exhibited by the *Ipil* sub-fraction **IBC4.4** which has acute LC_{50} range value of 59.43-61.93 ppm followed by the *Handalamay* sub-fraction **PAC4.3** (acute LC_{50} range=277.58-280.02 ppm) indicating that it only took six hours for these samples to kill 50% of the test animals. The next highest activities were showed by the *Ipil* sub-fraction **IBC4.2** (chronic LC_{50} range value=146.94-149.42 ppm) followed by the *Handalamay* sub-fractions **PAC 4.3**, **PAC4.4** and **PAC4.8** (chronic LC_{50} range values=277.58.42-280.02, 412.77-414.83 and 415.17-417.23 ppm, respectively) signifying that the samples took twenty-four hours to kill 50% of the test animals.

The HPLC purification of a *Lipang aso* sub-fraction has lead to the isolation of **24-ethylcholesterol** whose structure was determined from the NMR spectral data.

Almost all of the sub-fractions obtained exhibited radical-scavenging activity against the free-radical 2,2-diphenyl-1-picrylhydrazine (DPPH) indicating that the samples possess antioxidant potentials.

Infrared spectroscopic measurements revealed the presence of vinyl, carboxyl, hydroxyl, nitro and ether functionalities in the samples.

Phytochemical tests showed that saponins, flavonoids and alkaloids are found in all three medicinal plants. However, tannins are found only in *Ipil* and *Handalamay* while terpenoids are present only in *Ipil* and *Lipang aso*.