

**INVESTIGATION OF THE ORGANIC
CHEMICAL CONSTITUENTS OF
ARISTOLOCHIA INDICA L. (EIK-THARA-MULI)
AND *MARSILEA QUADRIFOLIA* L. (HMO-NA-DO) AND
THEIR ANTITUMOR ACTIVITY**

PhD (DISSERTATION)

MYINT MYINT SOE

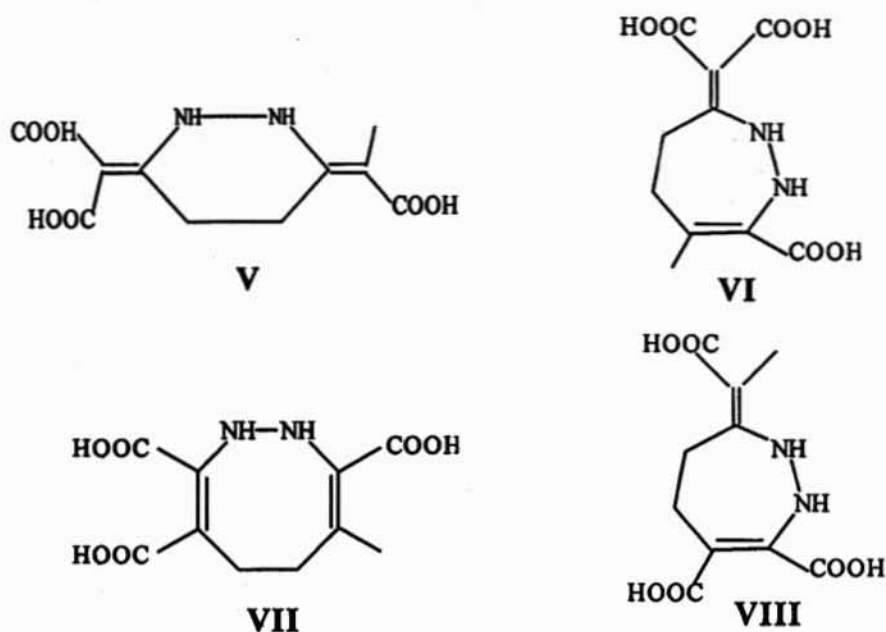
**DEPARTMENT OF CHEMISTRY
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- Title** : Investigation of the Organic Chemical Constituents of *Aristolochia indica* L. (Eik-thara-muli) and *Marsilea quadrifolia* L. (Hmo-na-do) and Their Antitumor Activity in Plants.
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- Abstract** : The antitumor activity of the plants and isolated compounds were assessed PCG test prescreen for 3PS (*in vivo* mouse leukemia) antitumor activity. An innovative step has been taken in the present work by employing a self-isolated *Agrabacterium tumefaciens* from infected leaves of Thitto (*Sandoricum koetjape* Merr.). The two selected plants, 70 % EtOH extract of Eik-thara-muli (*Aristolochia indica* L.) and Hmo-no-do (*Marsilea quadrifolia* L.) and all the three compounds isolated from them exhibited antitumor activity. Compound A (Aristolochic acid) (0.134% yield) was isolated from *A. indica* roots and rhizomes by two successive use of CC (silica gel, CHCl₃: MeOH (95:5) and (9:1)). It was identified by UV, FT-IR, ¹HNMR and ESI mass spectroscopic methods, referring also to reported data in literature. Compound B (0.002% yield) was isolated from *M. quadrifolia*, by two succes-

sive separations of CC (silica gel, PE: EtOAc (1:1-1:3)) and PTLC (silica gel, PE: EtOAc (1:3)). B has as yet no literature reference; four possible β - aminoacids, monoterpeneoidal in nature ($C_{10}H_{12}N_2O_6$): V, VI, VII, VIII, have been deduced for B, using UV, FT-IR, 1H and ^{13}C NMR and TLC behaviors.



: Compound C (0.016% yield) was isolated from *M. quadrifolia*, by CC (silica gel, PE:EtOAc : MeOH (2:98:2)). It was identified as the rhamnoglucosidal isoflavonoid, pseudobaptisin by UV, FT-IR and from its chemical and TLC behaviours.

Keywords : *Aristolochia indica* L., *Marsilea quadrifolia* L.,
Agrobacterium tumefaciens, PCG test