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KEY WORD : *MOMORDICA CHARANTIA* L./ PHYTOSTEROLS AND  
PHYTOSTERYL GLYCOSIDES / PROTEINS

NATSAJEE SUWANNAROJ : CHEMICAL INVESTIGATION OF  
*MOMORDICA CHARANTIA* L. FRUIT. THESIS ADVISORS: WEENA  
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*Momordica charantia* L. unripe fruit, had been traditionally used as an antidiabetic, but the ripen fruit was toxic and used as purgative and abortifacient. The proteins from the ripen fruit were reported to possess anti-HIV property. In this study, the chemical composition of the fruit was investigated. The unripe fruits were composed of potassium salt (0.0087%), two phytosterols (compound F and G) and a mixture of phytosteryl glucosides, charantin (compound C-I and C-II). The structures were elucidated using modern NMR spectroscopy and mass spectrometry. The compounds F, G, C-I, and C-II were identified as follows: compound F ( $C_{29}H_{48}O$ ) corresponded to  $24\beta$ -ethyl-cholesta-5,25(27)-diene- $3\beta$ -ol, compound G ( $C_{29}H_{50}O$ )  $24\alpha$ -ethyl-cholesta-5-ene- $3\beta$ -ol, compound C-I ( $C_{35}H_{60}O_6$ )  $3\beta$ -O-D-glucopyranosyl- $24\xi$ -ethyl-cholesta-5-ene, and compound C-II ( $C_{35}H_{58}O_6$ )  $3\beta$ -O-D-glucopyranosyl- $24\beta$ -ethyl-cholesta-5,25(27)-diene, respectively. The complete spectroscopic data of charantin was firstly reported. The protein with molecular weight around 30 kDa was isolated from the seeds of the ripen fruits by cation-exchange chromatography and gel filtration chromatography. The protein was sent for the amino acid sequence analysis. The sequence was Asp-Val-Ser-Phe-Arg-Leu-Ser-Gly-Ala-Asp-Pro-Arg-Ser-Tyr-Gly-Met-Phe-Ile-Lys-Asp, which could be identified as either momordin a or  $\alpha$ -momorcharin, both of which were ribosome-inactivating proteins. However, the biological activities of the isolated substances were planned for further investigation.