

CHAPTER IV

CONCLUSION

Screening of free-radical scavenging, tyrosinase-inhibition and UV absorption activities in various cultivars, including Khao Taeng-gwa (KT), Khao Yai (KY), Khao Nam Pheung (KN) and Tong Dee (TD) methanolic crude extracts indicated that the KT cultivar possessed the strongest free-radical scavenging and tyrosinase-inhibition activities. KT crude extract also showed UV-A and UV-B absorption activity. Isolation of KT albedo crude extract through methanol extraction followed by liquid-liquid ($\text{CH}_2\text{Cl}_2/\text{H}_2\text{O}$) extraction coupled with crystallization gave naringin, a flavanone glycosides with various biological activities. With this simple process, peels of the popular Kao Tang Gwa cultivar gave ~2.4 % (w/w) yield of naringin in >> 97 % purity. Moreover, significant amount of naringin also found in albedo others pomelo cultivars. In this study it was identified that naringin possessed a little tyrosinase inhibition activity with the IC_{50} values of 4914.77 and 27.39 mg/L for naringin and kojic acid, respectively. The compounds also possessed UV absorption property. Its UV absorption spectrum showed maximum absorbance at 281 and 327 nm, with molar absorptivity (ϵ) of 13,570 and 2,837 $\text{cm}^{-1} \text{M}^{-1}$, respectively.

In short, we have successfully demonstrated that pomelo peel is a potential source of naringin. In addition, we have also derived a simple isolation process to obtain high purity naringin from this agricultural waste.