

Thesis Title	Cosmetics from Rambutan peels extracts
Author	Siriluk Pongpunyayuen
Degree	Master of Science (Cosmetic Science)
Advisor	Asst. Prof. Dr. Nattaya Lourith

ABSTRACT

Nephelium lappaceum Linn. peels were macerated in 70% EtOH (5.556 %w/w) and partitioned with *n*-hexane and EtOAc, respectively. Extractive yield was found highest in Aq. (5.556 %w/w) extract, followed by EtOAc (0.705 %w/w) and *n*-hexane extracts (0.071 %w/w), respectively. The extracts were evaluated on ABTS⁺⁺ scavenging and antityrosinase activities. Total phenolic content was determined by Folin Ciocalteu method. HPLC was used for quantification of phenolics in extracts. The EtOAc extract was the most potent antioxidant extract with an IC₅₀ of 2.915 ± 0.022 ppm, which was significantly better than ascorbic acid (IC₅₀ = 6.288 ± 0.098). In addition, the EtOAc extract posed the strongest tyrosinase inhibitory effect (89.010 ± 0.420 %). Therefore, it was evaluated on IC₅₀ (430.838 ± 0.568 ppm). However, it was less active than kojic acid (IC₅₀ = 38.984 ± 0.514 ppm). Total phenolic content was found highest in the EtOAc extract (45.500 ± 0.866 g GAE/ 100 g crude extract). Total phenolic content was related with antioxidant ($r = 0.955$) and antityrosinase activities ($r = 0.844$). The EtOAc extract was non-cytotoxic in Vero cells at 50 ppm. HPLC analysis found ferulic acid (3.235 ± 0.023 g/ kg), gallic acid (2.434 ± 0.044 g/ kg), rosmarinic acid (1.743 ± 0.151g/ kg), caffeic acid (1.267 ± 0.218 g/ kg), kojic acid (0.932 ± 0.023 g/ kg), chlorogenic acid (0.388 ± 0.032 g/ kg) and quercetin (0.885 ± 0.156 g/ kg) highest in the EtOAc extract. Therefore, the EtOAc extract was further

incorporated into a stable base emulsion (0.005% w/w). The formulation was physically and chemically stabled following accelerated tests and long term storage at different temperatures for 6 months.

Keywords: Rambutan/Antioxidant/Antityrosinase/Phenolic/Anti–wrinkle cosmetic

