



Research Title (TH SarabunPSK 18)

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Abstract

Introduction: This study aimed to investigate the effect of the ethanolic extracts of *Eclipta prostrata* L.(EP), *Zingiber officinale* L.(ZO), *Lawsonia inermis* L.(LI), *Rhinacanthus nasutus* L.(RN) on melanin synthesis. **Materials and methods:** These extracts were determined for total phenolic content, antioxidant activity by Radical Scavenging Assay (DPPH) and Ferric Reducing Ability of Plasma (FRAP), mushroom tyrosinase activity, cell viability by MTT assay and melanin synthesis by melanin content assay in B16F10 cells. **Results:** The results showed that plant extracts had total phenolic content at 68.86±5.61 - 170.21±14.69 mg (mg tannic acid equivalent/g), Antioxidant by DPPH plant extracts had IC₅₀ at 9.93±2.38 - 96.31±6.51 µg/ml, Antioxidant by FRAP plant extracts had FRAP value at 72.45±9.4 - 733.13±154.62 mg/g, tyrosinase activity of ZO and EP extracts at a concentration of 150 µg/ml significantly increased mushroom tyrosinase activity to 144.65±2.68 % and 129.21±5.36 %, respectively (p-value < 0.05). LI and RN at concentration at 0.5-150 µg/ml had no increased mushroom tyrosinase activity. All plant extracts at concentrations of 31.25-250 µg/ml had no cytotoxicity to B16F10 cells at 48 hr incubations. Effect on melanin synthesis showed EP, ZO, LI and RN had maximum effect on melanin synthesis to 125.62±1.26%, 117.05±10.47%, 129.41±8.17% and 288.97±14.67%, respectively. **Conclusion:** These four plants increased melanin synthesis in melanocytes and may be used as hair treatment and decrease gray-hair.

Keywords: Keyword1, Keyword2, Keyword3, Keyword4, Keyword5