Abstract

This research study aimed to analyze total phenolics content and test the biological activities relevant used for cosmeceutical products of rice panicle extracts from two rice cultivars which are Khao Dawk Mali 105 (ML) and Ko Kho 6 (KD). It was found that bound phenolics extracted by the modified method in this study were archived. In particular of ML that extracted with 50% ethanol, hydrolyzed and partitioned with ethyl acetate labeled as ML_50%EtOH_EtOAc (Ins) was found highest, followed by directly hydrolyzed and partitioned with ethyl acetate named ML_EtOAc_Direct (Ins) and extracted in ethyl acetate, hydrolyzed and re-extracted by ethyl acetate gave ML_EtOAc (Ins). Total phenolics content of these extracts were statistically similar. The ML_EtOAc_Direct (Ins) extract was found significantly potent antioxidant activities assessed by ABTS, DPPH and FRAP assays (515.2 ± 22.06 μg $FeSO_4$ /1 mg extract) than other bound phenolics ($p < 0.05$). Furthermore, this extract showed efficient inhibitory effect towards tyrosinase enzyme (62.40 ± 2.32%), elastase enzyme (48.74 ± 4.67%), collagenase enzyme (79.27 ± 5.24%) and non cytotoxic in human dermal fibroblast at concentration of the extract 25-200 mg/ml. Therefore, the ML_EtOAc_Direct (Ins) extract is highlighted as the candidate natural raw material appraisal for further cosmeceutical product development.

Keywords: rice panicle/ antioxidant activitities/ anti-tyrosinase activity/ anti-collagenase activity/ anti-elastase activity/ cytotoxicity/cosmeceutical