

2nd International Conference and Exhibition on Pharmacognosy, Phytochemistry & Natural Products

August 25-27, 2014 DoubleTree by Hilton Beijing, China

Assessment of antioxidant capacity, anti-collagenase and anti-elastase assays of Malaysian unfermented cocoa bean for cosmetic application

Norliza Abdul Wahab^{1,2}, Fariza Izni Abu Bakar², Russly Abdul Rahman¹, Amin Ismail¹, Shuhaimi Mustafa¹ and Puziah Hashim¹ ¹Universiti Putra Malaysia, Malaysia ²Cocoa Innovation & Technology Centre, Malaysia

R ecent trends in anti-aging research projected the use of antioxidant compound derived from botanical products. Phenolic acids, flavonoids and high molecular weight polyphenols are some of antioxidants which are able to protect human skin against the harmful effects of UV irradiation, i.e., photoaging and skin cancer development. Various studies have demonstrated cocoa beans to contain polyphenols and possess health promoting effects mainly on antiradical property. In this study, the HPLC/DAD quantification of (-)-epicatechin from PBC123 and PBC140 Malaysian unfermented cocoa bean extracts (CBEs) were 121.01 and 118.09 mg/g DW, whereas concentration of (+)-catechin were 6.65 and 6.53 mg/g DW, respectively with no significant differences (p<0.05). In term of antioxidant capacity, Ferric reducing/antioxidant power (FRAP) of the respective clones were assayed at 822.10 and 795.99 mM FeSO₄/g DW. Inhibition of proteinases expression induces by reactive oxygen species (ROS) were exhibited in the *in-vitro* anti-collagenase and anti-elastase assays. The anti-collagenase activity of PBC123 and PBC140 were 62.99% and 59.96% whereas anti-elastase has been measured at 36.60% and 15.75%, respectively. Positive and high correlation were observed within (-)-epicatechin content (1), FRAP (2) and anti-collagenase (3) with significant relationships for both PBC123 and PBC140 (r_{12} =0.901, r_{13} =0.768 and r_{23} =0.908). A statistical One-Way ANOVA showed that there was no significant difference obtained between PBC123 and PBC140 in terms of (-)-epicatechin, FRAP and anti-collagenase assays, however, significant difference was observed from anti-elastase assessment (p<0.05). These results indicate unfermented PBC123 cloneas a potential source of natural ingredient in a cosmetic industry.

Biography

Norliza Abdul Wahab is pursuing her PhD at the Halal Products Research Institute, University Putra Malaysia Serdang in a Halal Products Development programme. She has been working as a research officer at the Malaysian Cocoa Board, a government organization for nearly 12 years mainly in cocoa-based cosmetic products development. Her current research is about bioactive component from unfermented cocoa bean for anti ageing property due to its high antioxidant capacity. Based on this research, she has received several awards including a gold and a bronze medal at the SIIF2008 (Korea) and MTE2014 being held at Malaysia, respectively.