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Biological Activity of extracts from newly bred Summer prince apple peel

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The biological resources has been using natural sources from nature. Among these, fruits, leaves and flowers which have a remedial role of neuralgia, arthritis, woman disease are safe plant materials so they have been used in conventional functional science for a long time. Apples a fruit enriched in flavonoids, which is widely distributed throughout the plant kingdom. In particular, quercetin flavanol is an active ingredient of many plant-origin pharmaceutical products. The regular intake of vegetables and fruits is associated with the prevention of cancer, cardiovascular diseases, and inflammation. Inflammatory response is a normal defense mechanism against external stimuli to regenerate and repair damaged tissues.

The objective of this study was to determine antioxidant activity(anti-aging), α -amylase and α -glucosidase inhibitory activity(anti-diabetes), as functional food activities and elastase and collagenase inhibitory activity (anti-wrinkle) as functional cosmetic activities of phenolic compounds from newly bred Summer prince apple peel extracts.

The peel of newly bred Summer Prince apple was extracted using water and ethanol for extracting solvent. Each water and ethanol extract showed relatively high phenolic compound of 6.83 mg/g and 11.11 mg/g. Each water and ethanol extract of Summer Prince apple showed antioxidant protection factor of 1.39 PF and 1.51 PF and TBARS showed anti-oxidation effect of 44.53% and 64.27% all at 100 μ g/mL phenolics concentration. Therefore extract of Summer Prince apple can be considered as anti-oxidant for anti-aging. The anti-inflammatory effect (hyaluronidase inhibition) of extract of Summer Prince apple was 16.53% with ethanol extract both at 200 μ g/mL phenolics concentration. Both water and ethanol extract showed low α -amylase inhibition effect but each showed 6.11% and 100% of α -glucosidase inhibition effect at 200 μ g/mL phenolics concentration. In anti-wrinkle effect, water extract showed each 14.39% and 48.27% in elastase inhibition and collagenase inhibition and ethanol extract showed 61.08% and 85.63% each.

These result show high potential for functional food and cosmetic source. Summer prince apple was identified to have various functions of anti-oxidation, anti-inflammation, anti-wrinkle effect, and anti-diabetic effect. Therefore, Summer prince apple is qualified as a source for new functional cosmetics and functional foods.

Biography

Young-Je Cho Ph.D is a Professor at Kyungpook National University (KNU). He did his postdoctoral research at Yeungnam University. He has published more than 250 research articles, book chapters and edited 3 books in functional food and functional cosmetic field.