

Inhibition Effect Against Elastase, Collagenase, Hyaluronidase and Anti-oxidant Activity of Thinning Green Ball Apple

Yu-Jin Go, Ye-Eun Kim, Hyun-Nam Kim, Eun-Ho Lee,
Eun-Bi Cho, Alex and Young-Je Cho*

School of Food Science & Biotechnology, Kyungpook National University, Daegu 41566, Korea

The thinning Green ball apple was extracted using water and ethanol and a phenolic concentration of thinning Green ball apple was 50-200 $\mu\text{g/mL}$. The water and ethanol extracts of thinning Green ball apple showed 94.69% and 92.24% 1,1-diphenyl-2-picrylhydrazyl radical scavenging activity and 100.30% and 99.16% 2,2'-Azinobis-(3-ethylbenzothiazoline-6-sulfonic acid) radical scavenging activity at phenolic concentration of 200 $\mu\text{g/mL}$, respectively. The water and ethanol extracts of thinning Green ball apple showed antioxidant protection factor of 1.76 antioxidant protection factor and 1.76 antioxidant protection factor, respectively. The water and ethanol extracts showed 101.46% and 99.64% anti-oxidative effect on thiobarbituric acid reactive substances at phenolic concentration of 200 $\mu\text{g/mL}$. Hence, the water and ethanol extracts of thinning Green ball apple can be considered a potential anti-oxidant. The water and ethanol extracts showed 33.28% and 32.14% hyaluronidase inhibition, respectively, at phenolic concentration of 150 $\mu\text{g/mL}$. The water and ethanol extracts showed 47.33% and 40.92% elastase inhibition and 46.19% and 65.58% collagenase inhibition at phenolic concentration of 200 $\mu\text{g/mL}$, respectively. About these experiments, thinning Green ball apple was found to exhibit anti-oxidation activity as well as hyaluronidase, elastase and collagenase inhibitory activities. Therefore, thinning Green ball apple can be considered a potential source for functional food.

Key words: Anti-oxidant, Collagenase, Elastase, Hyaluronidase, Thinning green ball apple

*(Corresponding author) Tel: +82-53-950-7755