

Inhibitory Activity of *Podospermum canum* and Its Active Components on Collagenase, Elastase and Hyaluronidase Enzymes

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Abstract : Present study is aimed to investigate in vitro inhibitory effects of the extracts prepared from the aerial parts of *Podospermum canum* (Asteraceae) on hyaluronidase, collagenase, and elastase enzymes using a bioassay-guided fractionation. Inhibitory effects of the extract, sub-extracts, fractions obtained by column chromatography, and isolated compounds on collagenase, elastase, and hyaluronidase were performed by using in vitro enzyme inhibitory assays based on spectrophotometric evaluation. The ethyl acetate and remaining water extracts prepared from the plant displayed significant inhibitory activities on collagenase and elastase, while petroleum ether and chloroform extracts did not show any inhibitory activity. Eleven known compounds: arbutin, 6'-O-caffeoylarbutin, cichoriin, 3,5-dicaffeoylquinic acid methyl ester, apigenin-7-O- β -glucoside, luteolin-7-O- β -glucoside, apigenin-7-O- β -rutinoside, isoorientin, orientin, vitexin, procatechuic acid, and compound 4-hydroxy-benzoic acid 4-(6-O- α -rhamnopyranosyl- β -glucopyranosyl) benzyl ester have been obtained from ethyl acetate sub-extract of the plant through bioassay-guided fractionation and isolation. Results of the present study have revealed that among the isolated compounds, apigenin-7-O- β -glucoside, luteolin-7-O- β -glucoside, apigenin-7-O- β -rutinoside and isoorientin showed potent enzyme inhibitory activities. However, methanolic extract of *P. canum* displayed a greater inhibitory activity than fractions and isolated compounds both on collagenase and elastase.

Keywords : Asteraceae, collagenase, elastase, hyaluronidase, *Podospermum canum*

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