Angiotensin Converting Enzyme Inhibitory Effect of Standardised Extracts from Various Varieties of Ficus Deltoidea

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Ficus deltoidea (Moraceae), Mas cotek, is a local medicinal plant which has been used for its health benefits including antioxidant, improving blood circulation and anti-hypertension effects. This study aims to determine the vitexin and isovitexin content in various varieties of F. deltoidea, and to study the extract’s inhibitory effect on angiotensin converting enzyme (ACE) activity as anti-hypertension marker. Five varieties were studied including F. deltoidea var deltoidea, F. deltoidea var. angustifolia, F. deltoidea var. tranguensis, F. deltoidea var. Telinga Beruk, and F. deltoidea var. Tapak Itik. Five extracts were prepared; water, methanolic, ethanolic, 50% methanolic and 50% ethanolic, and ACE inhibitory effect was studied in vitro. Vitexin and isovitexin concentration was in the range 0.001–0.35% and 0.001–7.025% (w/w), respectively. The highest ACE inhibition was obtained from F. deltoidea var. Tapak Itik (FD-TI) extracts where the 50% ethanolic and 50% methanolic extracts showed the most promising results. A bivariate correlation analysis may indicate existence of relation between vitexin in FD extracts and the ACE inhibition (r = 0.58), whereas the isovitexin results do not show any relationship (r= -0.06). The median inhibitory concentration (IC$_{50}$) of the 50% ethanolic extract of FD-TI was 22±3.8µg/ml, and that of vitexin and isovitexin was 3.1±0.5µg/ml, 18.6±1.3µg/ml, respectively. Our results showed the ACE inhibitory effect is partly due to existence of vitexin but not isovitexin, and the 50% ethanolic extract of the F. deltoidea var. Tapak Itik as a possible anti-hypertension candidate.

Keywords: Vitexin, Isovitexin, Ficus deltoidea, Anti-hypertension.