INHIBITION OF ANGIOTENSIN CONVERTING ENZYME (ACE) BY *VIOLA MANDSHURICA* EXTRACTION

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ABSTRACT

Angiotensin-converting enzyme (ACE, EC 3.4.15.1) inhibitor plays a critical role in treating hypertension by causing blood vessels to constrict. The purpose of this study was to estimate ACE inhibition activity by *Viola mandshurica* using an in vitro assay. The assay method is based on the hydrolysis of the substrate HHL by ACE, and measuring the amount of HA using RP-HPLC. ACE inhibitor activity was evaluating by determining the degree of hydrolysis rate of substrate, hippurl-L-histidyl-L-leucine (HHL). At 240 nm, the absorbance of treatment groups was the highest in *V. mandshurica* and HHL. More exactly, the absorbance ratio of HHL and extracts from *V. mandshurica* at 228 nm was high than that at 240 nm. The standard control reagent, captopril was used as a positive control for ACE inhibition. The extraction of *V. mandshurica* leaves showed inhibition activity more than 39.1%. The extraction of *V. mandshurica* petioles showed inhibition activity more than 28.7%. The roots of V. mandshurica demonstrated ACE inhibitory activity at a concentration of 20%, showing an inhibition greater than 46%. The roots extraction for ACE inhibitor was more effective than leaf and petiole extractions. The results of this study suggest that the root extraction of *V. mandshurica* can be utilized in further studies as one of high ACE inhibitory effectors.

Keywords: Angiotensin-converting enzyme (ACE), ACE inhibitor, *Viola mandshurica*.