OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference on
Medicinal Chemistry & Computer Aided Drug Designing

October 15-17, 2013 Hampton Inn Tropicana, Las Vegas, NV, USA

Angiotensin converting enzyme inhibitory effect of *Ficus deltoidea* jack standardised leaf extracts

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Ficus deltoidea jack (Moraceae) is a traditional medicinal plant which has been used for centuries for its health benefits such as antioxidant activity, improving the blood circulation and anti- hypertension effect. Angiotensin converting enzyme (ACE) inhibitors are considered as safe and effective antihypertension agents. Thus, research on finding new ACE inhibitors can provide safe and powerful anti-hypertension drugs.

Methanolic (FD-M) and water (FD-W) extracts of *F. deltoidea* were screened for *in vitro* antihypertensive effect using an enzymatic-based ACE assay and by quantifying ACE concentration in umbilical vascular endothelial cells (HUVEC) lysates. The extracts were standardized by developing a reverse phase high performance liquid chromatography (RP-HPLC) for determination of the L-citrulline and L-arginine content. The extracts were also standardized for their primary and secondary metabolites including the total flavonoids, polyphenols, tannins, polysaccharides and glycosaponins.

The effective RP-HPLC method with UV detection that involved precolumn derivatisation with O-phthaladehyde has been successfully developed and validated. Both extracts showed significant ACE inhibitory effect ($P<0.05$). In the enzymatic assay, FD-M showed the highest inhibition with IC_{50} value 19.15 µg/mL. Likewise, FD-M and FD-W extracts of plant inhibited ACE expression in HUVECs by >60%.FD-Mextractwas found to contain relatively high L-citrulline, polyphenols, flavonoids, tannins and saponins content, while FD-W extract showedrelatively high L-arginine and polysaccharides content.

The ACE inhibitory activity observed in *F. deltoidea* extracts support their traditional use asantihypertension treatment. This activity may be attributed to their high content of primary and secondary metabolites.

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