

**Dipeptidyl peptidase IV (DPP IV) inhibitory activity screening of *Momordica charantia*,
Taraxacum officinale and *Trigonella foenum-graecum* extracts *in vitro***

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Abstract

Diabetes, a globally popular disease which attracted the attention of many researches worldwide to discover a non-toxic and side effect free remedy for this disease. Inhibition of DPP IV enzymes has been adopted as one of the strategies in recent years in controlling diabetes. DPP IV inhibitor inhibits the dipeptidyl peptidase enzyme which degrades several incretin hormones that are vital in the production of insulin and managing the blood glucose level. Thus, the present study was designed to investigate the DPP IV inhibitory effects of plants having antidiabetic property. *In vitro* DPP IV inhibition was evaluated by the specific inhibitory activity of *Momordica charantia* (whole fruit), *Taraxacum officinale* (whole plant) and *Trigonella foenum-graecum* (seed) extracts prepared with heat treatment using petroleum ether, acetone, ethanol and water as solvents. Among the tested plants *T. officinale* and *M. charantia* acetone extracts exhibited strong DPP IV activity inhibition, with 78.88% and 54.13% respectively. The present study is the first report on screening of DPP IV inhibitory activity of *T. officinale*, *M. charantia* and *T. foenum-graecum* extracts. This could provide a new insight into DPP IV inhibitors from plants that could be useful for treatment of type 2 diabetes.

Keywords: Diabetes, DPP IV inhibitor, *Momordica charantia*, *Taraxacum officinale*, *Trigonella foenum-graecum*.

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