The effect of bioactive polyphenols from anacardium occidentale linn. Leaves on α-amylase and dipeptidyl peptidase iv activities

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Abstract

Anacardium occidentale Linn. (A. occidentale L.) leaves possess bioactive polyphenols which are associated with antidiabetic potency for the management of type 2 diabetes mellitus (T2DM). In this study, free, soluble ester, and insoluble-bound phenolic fractions from young and mature leaves of A. occidentale L. were extracted. Subsequently, all fractions were investigated for their inhibitory effect on α-amylase and dipeptidyl peptidase IV (DPPIV) activities. Both free (72.45 ± 3.6%) and soluble ester (83.40 ± 4.7%) phenolic fractions in the mature leaves extracts had significantly demonstrated greater α-amylase inhibitors than the young leaves. Likewise, soluble ester (4.09 ± 0.34 μg/mL) and

insoluble-bound (4.87 ± 0.32 µg/mL) phenolic fractions in the mature leaves extracts were significantly more effective in inhibiting DPPIV than the young leaves. As for fractions comparison, insoluble-bound derived from the young leaves extract was a more potent α-amylase inhibitor than free and soluble ester phenolic fractions ($p < 0.0001$). Besides, soluble ester and insoluble-bound phenolic fractions showed a stronger inhibitor of DPPIV than the free phenolic ($p < 0.001$), irrespective of the maturity of the leaves. In conclusion, this study showed that A. occidentale L. extracts possessed antidiabetic properties, which may potentially be used as an alternative treatment for T2DM management.

Author keywords

Anarcadium occidentale Linn; Dipeptidyl peptidase IV; Inhibitor; α-amylase

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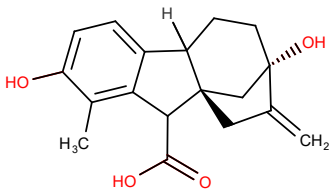

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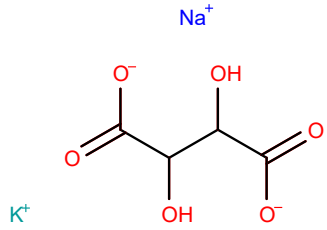

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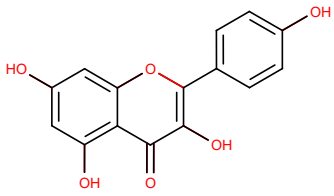

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