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In vitro α -glucosidase inhibitory assay

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Abstract

The *in vitro* α -glucosidase inhibitory assay was performed according to Dineshkumar et al. [8]. The α -glucosidase enzyme (2 U/mL) was premixed with 20 μ L of plant aqueous extract at a concentration of 1,000 μ g/mL and incubated for 5 min at 37 °C. Then 1 mM p-nitrophenyl gluco-pyranoside (pNPG) (20 μ L) in 50 mM of phosphate buffer (pH 6.8) was added to initiate the reaction. The mixture was incubated at 37 °C for 20 min. The reaction was terminated by the addition of 50 μ L of 1 mM sodium carbonate. The α -glucosidase activity was determined at 405 nm. The α -glucosidase inhibitory activity was calculated using the formula $(Ac^+ - (Ac^- - (As - Ab)/(Ac^+ - (Ac^-) \times 100$, where Ac^+ , Ac^- , As, Ab are defined as the absorbance (405 nm) of 100% enzyme activity (only solvent with enzyme), 0% enzyme activity (only solvent without enzyme), test sample (with enzyme), and a blank (a test sample without enzyme), respectively. Reagents to evaluate anti-diabetic activity were of analytical grade and purchased from Sigma-Aldrich. For anti-diabetic activity, acarbose (anti-diabetic drug) was used as control.

Troubleshooting

