Sep 04, 2018

In vitro α-glucosidase inhibitory assay

DOI
dx.doi.org/10.17504/protocols.io.s9qeh5w

Maira Rubi Segura Campos[1]

[1]Universidd Autónoma de Yucatán

Maira Rubi Segura Campos

DOI: dx.doi.org/10.17504/protocols.io.s9qeh5w

Document Citation: Maira Rubi Segura Campos 2018. In vitro α-glucosidase inhibitory assay. **protocols.io** **https://dx.doi.org/10.17504/protocols.io.s9qeh5w**

Manuscript citation:
Dineshkumar B, Mitra A, Manjunatha M. Studies on the anti-diabetic and hypolipidemic potentials of mangiferin (xanthone glucoside) in streptozotocin-induced type 1 and type 2 diabetic model rats. Int J Adv Pharm Sci. 2010; 1: 75-85.

Created: September 04, 2018

Last Modified: September 04, 2018

Document Integer ID: 15376

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 µL of plant aqueous extract at a concentration of 1,000 µg/mL and incubated for 5 min at 37 °C. Then 1 mM p-nitrophenyl gluco-pyranoside (pNPG) (20 µL) 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 µL 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.