



Applicant Information

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Abstract Details

Title:

In Vitro Antidiabetic Activities of Crude Pectin Extracted from Abelmoschus Esculentus (Okra)

Category:

Non-communicable diseases including mental health

Authors:

John Nor-Atindana, Usman Abdul Gafar, and Fidelis Kpodo

Objectives:

Diabetes mellitus is a complex metabolic disorder that is considered a worldwide epidemic and is associated with the development of many complications. Okra (*Abelmoschus esculentus*) is a traditionally important vegetable herb used to treat numerous illnesses, including diabetes mellitus in many rural parts of Asia and Africa. The aim of the study was to determine antidiabetic effects of crude pectin extract from okra.

Method:

Okra pectin was isolated using the hot phosphate buffer extraction method at pH 6.0. The antidiabetic properties crude pectin was determined using in vitro simulation techniques to simulate glucose absorption, and enzymatic hydrolysis of starch and the released glucose tested from starch in the presence of the crude pectin extracts. Data was analyzed using GraphPad Prism.

Results:

The results showed that crude okra pectin significantly ($p < 0.05$) exhibited higher glucose and oil adsorption and binding capacity respectively. The analysis of the influence the okra pectin on glucose diffusion showed that pectin exhibited significant inhibitory effects ($p < 0.05$) against the movement of glucose across the dialysis membrane into the external liquid, when compared with the control group. The addition of the sample to soluble starch containing alpha amylase and alpha glucosidase significantly impeded the enzymes hydrolysis rate causing reduced glucose release.

Conclusion:

Okra pectin okra can attenuate postprandial blood glucose spike by inhibiting alpha amylase and alpha glucose activities during starch digestion and inhibit glucose diffusion into the bloodstream. These findings suggest that okra pectin could be a potential alternative for managing diabetes mellitus.

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