

POTENTIAL ANTIDIABETIC OF TAMARIND WASTE: EFFECTS ON THE PANCREATIC α -AMYLASE

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Diabetes is a complex metabolic disease characterized by plasma hyperglycemia. One of the ways of treatment of diabetes is the inhibition of pancreatic α -amylase. However, drugs available in the market carry out a range of side effects. Therefore, the present work aimed to evaluate the effect of tamarind waste (skin and seed) rejected by the food industry on the activity of pancreatic α -amylase. Hydroethanolic extract (70%) of tamarind skin and seed were prepared, lyophilized, and used in a concentration curve on the α -amylase activity by 3,5 dinitro-salicylate assay. Kinetic analysis was performed simultaneously varying both substrate (starch) and extracts. Statistical analyses were carried out by Scientist Program. Both extracts (skin and seed) reduced the enzymatic activity in a concentration dependence way. However, the seed extract reported a bigger strength of inhibition, as revealed by IC₅₀ of 13,26 μ g/mL, compared to IC₅₀ of 470,16 μ g/mL for skin extract. Kinect studies showed that the seed extract presented an enzymatic inhibition of parabolic and non-competitive type (KI₁ 10,07 μ g/mL e KI₂ 10,37 μ g/mL). Conversely, skin extract performed a mixed linear inhibition (KI₁ 615,78 μ g/mL e KI₂ 411,01 μ g/mL). We concluded that tamarind waste, mainly seed extract, can be considered preparation with therapeutic potential for the management and treatment of diabetes.

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