POTENTIAL INHIBITORY ENZYME PANCREATIC α-amylase BY KIND AS POSSIBLE SYZIGIUM CUMINI AUXILUAR HERBAL THE TREATMENT OF DIABETES MELLITUS

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INTRODUCTION AND OBJECTIVES

Jambolão is a particular plant of India that has adapted to Brazilian Northeast. Due its possible reduction of the glycemic index, the fruit is presenting itself as an aid to diabetic people. This study evaluated in vitro assays inhibition of pancreatic α-amylase by the aqueous extract of Jambolão as an explanation of the potential therapeutic effects by inhibiting the enzyme and consequently decreases glucose uptake in the duodenum.

MATERIALS AND METHODS

Leaves of Jambolão were purchased in health food store with report of good origin. The extract was prepared as recommended (tea). The leaves were maintained in infusion for 10 minutes then filtered. The activity of α-amylase enzyme was determined according Noelting & Bernfeld; in order kinetics 4 times (10, 20, 30 and 40 minutes).

The percentage of enzyme inhibition was calculated by the expression:

\[
\%\text{inhibition} = (\frac{\Delta a_{\text{control}} - \Delta a_{\text{sample}}}{\Delta a_{\text{control}}}) \times 100
\]

The inhibition percentage was obtained by the slope of the graphic line (absorbance x time) of enzyme activity control test (without sample) and enzyme +
RESULTS AND CONCLUSIONS

The results are demonstrated in the following table 1.

Table 1: Inhibition of α-amylase

<table>
<thead>
<tr>
<th>Proportion of Jambolão solvent</th>
<th>Inhibitory percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:1000</td>
<td>90,50</td>
</tr>
<tr>
<td>1:1250</td>
<td>97,62</td>
</tr>
<tr>
<td>1:2000</td>
<td>84,13</td>
</tr>
</tbody>
</table>

The aqueous extract of Jambolão, even at high dilutions, strongly inhibited the α-amylase.

The high percentage of inhibition of pancreatic α-amylase by Jambolão extract suggests an action mechanism for the possible hypoglycemic effect. Other tests are needed to assess the stability of the inhibitor under physiological conditions. The progress of research suggests assays for determining the inhibitory molecules and theoretical studies of the inhibition of the enzyme.

Acknowledgements

Study prepared with the support of FAPEMIG.
Key Words: enzyme inhibition, jambolão, hypoglycemic