

α -Amylase Inhibitory Activity of Some Tunisian Aromatic and Medicinal Plants

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Abstract : Aqueous and ethanolic extracts of eight Tunisian aromatic and medicinal plants (TAMP) were characterized by studying their composition in polyphenols and also their antiradical and antioxidant capacities. In absence and in the presence of the various extracts, α -amylase from *Bacillus subtilis* activity, was measured in order to detect a potential inhibition. The total contents of polyphenols and flavonoid vary in function of TAMP and the mobile phase used for the extraction (distilled water or ethanol). The ethanolic extracts showed the most significant antiradical and antioxidant activities. Only the extracts from *Coriandrum sativum* showed a significant inhibiting effect on the α -amylase activity. This inhibiting capacity could be correlated with the chemical profile of the two extracts, due to the fact that they have the greatest amount of total flavonoid. The ethanolic extract has the most important antioxidant and anti-radicalizing activities among the sixteen extracts studied. The inhibition kinetics of the two coriander extracts were evaluated by pre-incubation method, using Lineweaver-Burk's equation, obtained by linearization of Michaelis-Menten's expression. The results showed that both extracts exercised a competitive inhibition mechanism.

Keywords : α -amylase, antioxidant activity, aromatic and medicinal plants, inhibition

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