ORIGINAL ARTICLE

Inhibitory Effect of Ferula persica, Ginkgo biloba, Nelumbo nucifera, and Dicyclomine on the Activity of Pancreatic Lipase

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Abstract

Background and purpose: Pancreatic lipase is a major digestive enzyme in digestion and absorption of fats. Inhibition of the pancreatic lipase activity has always been one of the goals of researchers to control obesity and related disorders. Current inhibitory agents have several side effects. The aim of this study was to investigate the inhibitory effect of *Ferula persica*, *Ginkgo biloba*, *Nelumbo nucifera*, and Dicyclomine on pancreatic lipase activity.

Materials and methods: In this experimental study, *Ferula persica*, *Ginkgo biloba*, and *Nelumbo nucifera* were extracted by soxhlet method. Methanolic or aqueous extracts of plants and dicyclomine at 10, 25, 50, 100, 200, and 400 µg/ml were prepared and their inhibitory effect on a fixed concentration of commercial pancreatic lipase were investigated. The combined extracts of *Ferula persica* and *Nelumbo nucifera* were also applied to the enzyme at the ratio of 1:3, 2:2, 3:1, and without quotas. Lipase activity was measured based on the release of methyl resorphine as colorimetric assay.

Results: Extracts of *Ferula persica* and *Nelumbo nucifera* alone or combined in a ratio of 1:2 at 50 µg/ml led to further decrease in pancreatic lipase activity compared to the unexposed enzyme. *Ginkgo biloba* and Dicyclomine did not show any considerable inhibitory effect at concentrations and ratios studied.

Conclusion: The extracts of *Ferula persica* and *Nelumbo nucifera*, alone or in combination, showed inhibitory effect on pancreatic lipase activity. Further studies, especially clinical trials are suggested to evaluate the efficacy and safety of these compounds.

Keywords: pancreatic lipase, *Ferula persica*, *Nelumbo nucifera*, *Ginkgo biloba*, Dicyclomine

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