Abstract

Composition Analysis and Anti-Cancer Properties of Two Endemic *Phlomis* Species (*Phlomis cypria* Post and *Phlomis brevibracteata* Turrill) from Cyprus [†]

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Abstract: Recently, different herbal compounds have been studied for their curative properties against Hepatocellular Carcinoma (HCC). There are over 100 *Phlomis* species native to the Mediterranean region, which have pharmacological activities against gastrointestinal system and liver diseases. *Phlomis brevibracteata* Turrill (PBT) and *Phlomis cypria* Post (PCP) are endemic plants of North-Cyprus belonging to the Lamiaceae family. In this study, chemical composition of the 70% methanol extracts of *Phlomis* species were analyzed by LC/MS/MS and antiradical activities were evaluated by DPPH• and ABTS•• radical scavenging activity tests. Anti-carcinogenic activities on HCC cell lines were investigated using MTT and wound healing assays, intercellular ROS scavenging activities were tested by DCFH-DA assay. Forsytoside B and caffeoylquinic acids were found as the main phenolic compounds which are possibly responsible for antiradical activities of the plant extracts. Significant decrease in cell viability was noticed for both extracts at concentrations over 1000 µg/mL. PBT treatment also resulted in cell motility inhibition. Additionally, both basal and induced oxidative states of all cell lines significantly were decreased by PBT. Since extracts showed cytotoxic, antioxidant and motility inhibitory activities, *Phlomis* species can be a good candidate for further studies with the goal of new anticancer chemotherapeutic discoveries.

Keywords: *Phlomis*; HCC; anti-carcinogenic activity

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