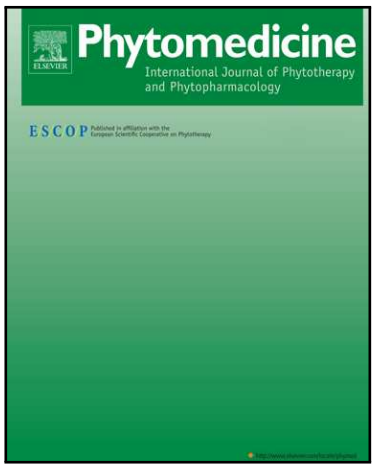

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Antioxidant Effects of an olive oil total polyphenolic fraction from a Greek *Olea Europea* variety in different Cell cultures

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ABSTRACT

Background: Numerous studies have been carried out concerning the advantageous health effects, especially the antioxidant effects, of Olive oil's (OO) individual biophenolic compounds, but none until now for its total phenolic fraction (TPF). Plenty of evidence, in research about nutrition and healthiness, points out that it is the complex mixture of nutritional polyphenols, more than each compound separate, which can synergistically act towards a health result.
Purpose: The aim of the present study was to examine the antioxidant properties of an extra virgin olive oil (EVOO) total polyphenolic fraction, from a Greek endemic variety of *Olea Europea* in cell lines.
Methods: EVOO from a Greek endemic variety was used for the extraction of a total polyphenolic fraction, using a green CPE-based method. The redox status [in terms of ROS, GSH, TBARS, protein carbonyls] was assessed at a cellular level, particularly in EA.hy926 endothelial, HeLa, HepG2 hepatic cells and C2C12 myoblasts. Moreover, the levels of glutamate-cysteine ligase catalytic subunit (γ-GCLc) of GSH, one of the most important antioxidant enzymes, were assessed by western blot.
Results: According to the results, TPF improves the redox profile of all cell lines, mainly by increasing GSH and its catalytic subunit, while at low, not cytotoxic TPF concentrations there was a decrease in TBARS and carbonyls. Regarding ROS levels a reduction was observed