

Pistacia Lentiscus: A Plant With Multiple Virtues for Human Health

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Abstract : Medicinal plants are believed to be an important source for the discovery of potential antioxidant, anti-inflammatory and anti-diabetic substances. The present study was designed to investigate the neuroprotective, anti-inflammatory, anti-diabetic and anti-hyperuricemic potential of *Pistacia lentiscus*, as well as the identification of active compounds. The antioxidant potential of plant extracts against known radicals was measured using various standard in vitro methods. Anti-inflammatory activity was determined using the paw edema model in mice and by measuring the secretion of the pro-inflammatory cytokine, whereas the anti-diabetic effect was assessed in vivo on streptozotocin-induced diabetic rats and in vitro by inhibition of alpha-amylase. The anti-hyperuricemic activity was evaluated using the xanthine oxidase assay, whereas neuroprotective activity was investigated using an Aluminum-induced toxicity test. *Pistacia lentiscus* extracts and fractions exhibited high scavenging capacity against DPPH, NO. and ABTS+ radicals in a dose-dependent manner and restored blood glucose levels, in vivo, to normal values, in agreement with the in vitro anti-diabetic effect. Oral administration of plant extracts significantly decreased carrageenan-induced mice paw oedema, similar to the standard drug, diclofenac, was effective in reducing IL-1 β levels in cell culture and induced a significant increase in urinary volume in mice, associated to a promising anti-hyperuricemic activity. Plant extracts showed good neuroprotection and restoration of cognitive functions in mice. HPLC-MS and NMR analyses allowed the identification of known and new phenolic compounds that could be responsible for the observed activities. Therefore, *Pistacia lentiscus* could be beneficial in the treatment of inflammatory conditions and diabetes complications and the enhancement of cognitive functions.

Keywords : *Pistacia lentiscus*, anti-inflammatory, antidiabetic, flavanols, neuroprotective

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