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A systematic review on the *Heracleum persicum* effect and efficacy profiles

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ABSTRACT

Heracleum persicum, commonly known as Persian hogweed or golpar, is a flowering plant in the family Apiaceae, native to Iran. The aim of this study is to view its pharmacological effect and efficacy profiles. This review article was carried out by searching studies in PubMed, Medline, Web of Science, and IranMedex databases up to 2016.totally, of 116 found articles, 40 articleswere included. The search terms were "Heracleum persicum.", "therapeutic", "pharmacological", "traditional medicine". Various studies have shown that Heracleum persicum. Process Angiographic properties Antioxidantproperties, Anti-Candida Activity, Coronary angiography, Lipid profile,Infertility, Anti-inflammatory and analgesic properties, Anticonvulsantproperties. Heracleum persicum is widely used for therapeutic and purposes that trigger its significant value. Various combinations and numerous medicinal properties of its extract, essential oils, its stems and leaves demand further and more studies about the other useful and unknown properties of this multipurpose plant.

Keywords: *Heracleum persicum*, therapeutic, pharmacological, traditional medicine

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INTRODUCTION

It is proved that herbal medicine is effective in the treatment of many diseases [1-10]. *Heracleum persicum*, commonly known as Persian hogweed or golpar , is a flowering plant in the family Apiaceae, native to Iran[11-14]. It grows wild in humid mountainous regions in Iran, as well in some adjacent areas. Having been introduced in the 1830s, it is now very common in northern Norway, where it is known as the Tromsø palm [15-18]. The plant has also been spotted in Sweden.

The seeds are used as a spice in Persian cooking. The very thin, small seedpods are aromatic and slightly bitter. They are usually sold in powdered form and are often erroneously sold as "angelica seeds"[19]. The powder is sprinkled over broad beans, lentils and other legumes, and potatoes. Golpar is also used in soups and stews. It is often used sprinkled over pomegranate arils [20]. Golpar is also mixed with vinegar into which lettuce leaves are dipped before eating. Golpar can be used in small amounts 1 or 2 tsp per pound] when cooking beans to reduce the effect of gas in the digestive tract associated with consuming beans [15] In Persian cuisine, the petals are used in the spice mixture advice to flavor rice dishes, as well as in chicken and bean dishes. The tender leaves and leaf stalks are also pickled [known as golpartoraei][7, 11, 16, 21-33]

Angiographic
The impact of supplementation with *H. persicum* fruits on serum lipid concentrations in a group of patients with minimal coronary artery disease was investigated. The findings showed that serum triglycerides levels were reduced

after *H. persicum* extract supplementation in a borderline significant manner (p=0.063). Short-term supplementation with *H. persicum* fruit extract might be used as an adjunctive treatment for patients with hypertriglyceridemia (34).

The effects of supplementation with *H. persicum* fruit on the angiographic findings of patients with minimal coronary artery disease (CAD) was examined. The results do not support any clinically significant benefit of supplementation with *H. persicum* extract on the angiographic findings of in patients with minimal CAD (38).

Antioxidant
The efficacy of supplementation with *Heracleum persicum* fruit-a common dietary spice-in modulating systemic biomarkers of oxidative stress in subjects undergoing coronary angiography was investigated. The findings of the present randomized double-blind placebo-controlled trial clearly support the efficacy of *H. persicum* fruit extract as a safe antioxidant supplement in subjects with minimal CAD (20, 35, 36).

Anti-Candida Activity
The in vitro anti-Candida activity of the hydroalcoholic extracts of *Heracleum persicum* fruit was investigated. The results of this survey confirmed that tested plant extract had a potential anti-Candida activity. Hence, it is suggested to isolate and identify its active compounds in future (37).

Lipid profile
The effect of hydroalcoholic extract and essential oil of *Heracleum persicum* (Apiaceae) on lipid profile of male hyperlipidemic rabbits was investigated. These findings suggest that essential oil of the plant fruits may have some benefits in reducing cardiovascular risk factors (39).

Infertility
The effects of the golpar plant on ovarian tissue and folliculogenesis was investigated. The results showedin vivo effects of the HPHE on the ovarian follicles of the female Wistar rat. Besides, the results suggest that administration of HPHE may have inhibitory effects on folliculogenesis and cause infertility in females (30).

Anti-inflammatory and analgesic properties
The anti-inflammatory and analgesic effects of the hydroalcoholic extract and essential oil of the plant fruits and analyzing the essential oil was evaluated. The results clearly show the analgesic and anti-inflammatory effects of the plant essential oil and hydroalcoholic extract. Further studies are needed to clarify the mechanism of action and the components responsible for these pharmacological effects (21).

Anticonvulsant
The anticonvulsant activity of acetone extract of the seeds of *Heracleum persicum* (Umbelliferae) was examined against pentylenetetrazole. The extract showed a dose-dependent protective effect in both seizure models. However, the sedative dose of the extract, examined by rotarod test, was close to the anticonvulsant doses. Preliminary phytochemical analysis showed the presence of alkaloids, terpenoids, triterpenes and steroids in the extract. The observed pharmacological effects could be due to alkaloids, terpenoids and triterpenes present in the plant (40).

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