

# **Investigation of antioxidant, anticancer and Inhibitory properties of Golpar ( Heracleum Persicum ) extract on the production of amyloid nano-biofibrils bovine serum albumin as a model protein**

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**Abstract : Introduction :** Golpar with scientific name *Heracleum persicum* is medicinal and aromatic herb Apiaceae family, Which despite the presence of coumarin with anti-inflammatory properties and various antioxidants such as pimpinellin, can have significant therapeutic effects in the treatment of Alzheimer's disease. In this study, Anticancer and anti-Alzheimer's effects of golpar were evaluated by two methods of analyzing the antioxidant and inhibitory effect of golpar extract on the production of amyloid nanobiofibrils. **Methods:** cancer cells of MCF7 were cultured in culture medium MEM, containing fetal bovine serum, penicillin and streptomycin and incubated at 37°C and 5% CO<sub>2</sub>. Then the grown cells, trypsinized and plated in 96 well-plates and placed in an incubator. After 24 hours, Golpar extract at a concentration of 10 mg/ml was added and to eliminate the error rate, repeat 12 times and after 72 hours, The cell cytotoxicity of the golpar extract was investigated with using MTT method. To investigate the inhibitory effect on the production of amyloid strands, different concentrations of the golpar extract in solution of bovine serum albumin were prepared and placed on a heater with temperature of 60-70 °C for 72 hours. Then the amount of production of amyloid strands was investigated as the maximum wavelength in the spectrum obtained the spectrophotometer congruent and then reported. DPPH test was performed to evaluate the antioxidant effect at different doses. **Results :** The amount of cell survival in the MTT test in the presence of *Heracleum persicum* extract was obtained 14.72%. The highest reduction in the production of amyloid strands was obtained in the concentration of 0.4 mg/ml of

**Heracleum persicum extract and the highest percentage of antioxidant activity at 3 mg/ml. Conclusion : According to the results, Heracleum persicum extract has anticancer and anti-Alzheimer's effects and its compounds can be used to reduce the complications of these diseases in the combination of drugs. Key words: Heracleum persicum, Alzheimer, cancer, Amyloid, bovine serum albumin.**

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