

عنوان مقاله:

Antioxidant and cytotoxic potentials of the methanolic extract of *Teucrium persicum* Boiss. in A-375 melanoma cells

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خلاصه مقاله:

Objective: *Teucrium persicum* is an Iranian endemic plant used in Iranian traditional medicine. **Materials and Methods:** The total phenolic and total flavonoid contents, and antioxidant potential of the methanolic extract of *T. persicum* were determined. The MTT test was used to evaluate the inhibitory effect of the extract on the viability of A-375 cells. The clonogenic, micronucleus formation, and acridine orange/ethidium bromide staining methods were used to evaluate the survival and proliferation of A-375 cells. Apoptosis was evaluated by using DNA fragmentation assay and measuring the activity of caspase 3/7. To study the effect of the extract on the migration of A-375 cells, the in vitro wound-healing (scratch) assay was employed. **Results:** The average total phenolic and flavonoid contents and antioxidant properties of the extract were 6.97 ± 0.01 mg Ellagic acid (EGA)/g, 46.83 ± 0.0019 mg of the ethoxyquin (1,2-dihydro-6-ethoxy-2,2,4-trimethylquinoline; EQ)/g of dried extract, and 10 ± 0.002 μ g/ml, respectively. The IC₅₀ value of the *T. persicum* methanolic extract was 13μ g/ml for 48 hr. The DNA fragmentation pattern and the activity of caspase 3/7 suggested that the reduction of the cell viability may be due to apoptosis induction. Microscopic observations showed nuclear condensation, a considerable increase in micronuclei formation, and inhibition of the colony formation in A-375 cells treated with 7μ g/ml to 15μ g/ml of the extract. Wound-healing assay supported the anti-migration activity of the extract. **Conclusion:** *T. persicum* has significant antioxidant and cytotoxic properties. Surely, more detailed molecular and biochemical studies are needed to find the mechanism(s) behind these effects

کلمات کلیدی:

Teucrium persicum, A-375 cells, Antioxidant potential, Cytotoxicity, Caspase 3/7, Genotoxicity

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