

Salvia fruticosa reduces intrinsic cellular and H₂O₂-induced DNA oxidation in HEK 293 cells; assessment using flow cytometry.

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Abstract: OBJECTIVE: To investigate the role of water-soluble extract of *Salvia fruticosa* (Greek sage) (*S. fruticosa*) leaves in reducing both intrinsic cellular and H₂O₂-induced DNA oxidation in cultured human embryonic kidney 293 cells. *S. fruticosa*, native to the Eastern-Mediterranean basin, is widely used as a medicinal herb for treatment of various diseases. METHODS: Dried leaves of *S. fruticosa* were extracted in phosphate buffer saline and purified using both vacuum and high pressure filtrations. Each mL of the preparation contained (7.1±1.0) mg of extract. HEK-293 cells were incubated in one set with *S. fruticosa* extract in the presence of 0.1 mmol/L H₂O₂, and in the other set with the addition of the extract alone. The DNA oxidation was measured using fluorescence upon fluorescein isothiocyanate derivatization of 8-oxoguanine moieties. The fluorescence was measured using flow cytometry technique. RESULTS: Cells incubated 3 h with 150 µL extract and exposed to 0.1 mmol/L H₂O₂ showed lower intensity of fluorescence, and thus lower DNA oxidation. Moreover, cells incubated 3 h with 100 µL of the extract showed lower intensity of fluorescence, and thus lower intrinsic cellular DNA oxidation compared to control (without *S. fruticosa*). CONCLUSIONS: The results from this study suggest that the water-soluble extract of *S. fruticosa* leaves protects against both H₂O₂-induced and intrinsic cellular DNA oxidation in human embryonic kidney 293 cells.