Research in Pharmaceutical Sciences, 2012;7(5)
School of Pharmacy and Pharmaceutical Sciences
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Relative cytotoxicity of fractionated extract of aerialparts of *Mentha pulegium* on ovarian cancer and other human tissue

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Background and Aims: Now a days, achievement of drugs and chemicals which are able to suppress the out of control growth and proliferation of cancer cells, is the goal of many cellular investigations. Scientific consideration and test of traditionally used herbs for the treatment of different malignancies could be considered as a very valuable source for new chemotherapeutic drugs. Mentha pulegium from Labiatae family is a herb that has many indications in traditional and modern medicine.
Methods: In this project, aerial parts including leaves of this plants were extracted by methanol and fractionated extracts have been respectively produced by petroleum ether, ethyl acetate, acetone, methanol and distilled water. For the purpose of cytotoxic evaluation of methanolic extract and its fractions on human-ovary carcinoma cells (C13), human hepatocarcinoma cells (HepG2) and human-lung carcinoma cells (A549), clonogenic assay was performed. Cells were seeded in the amount of 200 cells per each well of 12 well plates in RPMI 1640 with 10% FBS media.They were incubated in 5% CO2 atmosphere at humified 37◦C. After 24 hours 0-50 µg/ml of methanolic extract and its fractions were exposed to those cells. Finally, colonies with more than 50 cells each were counted after 7 days. In each case, a control row was set with exposure of cells to compounds-free solvents. LD50 values (compare to controls) were calculated using regression fitness analysis (percent survival versus log concentration) on Graphpad prism software.
Results: The methanolic extract and its fractions are cytotoxic on all three studied human carcinoma cell lines at different degrees.
Conclusions: Methanolic fraction has the most cytotoxic effect and human-ovary carcinoma cells (C13), which is resistant to many other most used chemotherapeutic agents (e.g cisplatin), is the most sensitive cell line to methanolic extract and its fractions in compare with two other cell lines.

Keywords: Cytotoxicity; *Mentha pulegium*; Clonogenic assay; C13; HepG2; A549