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Poster - [A-10-379-1]

Effect of barberry fruit (Berberis vulgaris) on serum glucose and lipids in streptozotocin-diabetic rats

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Objectives: Barberry (*Berberis vulgaris*) is used in traditional medicine for a number of diseases including diabetes mellitus. The aim of the present study was to evaluate the antidiabetic activity of aqueous extract of Berberis vulgaris fruit in streptozotocin-induced diabetic rats.

Material and Methods: Male Wistar rats were randomly divided into 4 groups, including 1) control, 2) diabetic, 3,4) diabetics treated with aqueous extract of barberry. The treatment groups received the barberry fruit extract daily in drinking water containing 3.5% and 7.5% from a 100mg/ml of the initial extract, since the day after diabetes confirmation for 6 weeks. The blood glucose and lipids were spectrophotometrically measured in all groups at weeks 0 (before diabetes induction), 3 and 6.

Results: Diabetic rats showed an elevated serum glucose level over those of control rats (p<0.0001) and treatment of diabetic rats for 6 weeks with the aqueous extract of barberry fruit did not change the serum glucose concentration in comparison to diabetic rats. Regarding serum lipids, diabetes induction caused a significant increase in triglyceride concentration compared to control (p<0.05) and treatment with barberry fruit did not change the triglyceride concentration compared to diabetic group. Meanwhile, diabetes induction did not change the total cholesterol and HDL-cholesterol concentrations in diabetic rats compared to controls.

Conclusion: The aqueous extract of *Berberis vulgaris* fruit at amounts of 3.5 and 7.5% of drinking water did not possess the hypoglycemic and hypolipidemic effects in streptozotocin-diabetic rats during 6-week treatment period. Therefore, the usage of barberry fruit in traditional medicine for the lowering of glucose or lipids in diabetic patients may need more investigation.

Keywords: *Berberis vulgaris* fruit, Diabetes mellitus, Hyperglycemia, Hyperlipidemia, Rat

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Poster - [A-10-393-1]

Antibacterial effect of Salvia leriifolia Benth essential oil obtained in different phenologic stages against cariogenic bacteria

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Method: Essential oil of plant leaves at three different phonologic stages (vegetative, flowering and seed formation) was extracted by steam distillation method and then its antibacterial activity against *Streptococcus mutans* (PTCC:1683), *Streptococcus sangius* (PTCC:1449) and *Actinomyces viscosus* (PTCC:1202) was evaluated by Agar dilution method. The study was conducted based on Completely Randomized Design (CRD) and data were analyzed with JMP and MSTATC softwares.

Result: Minimum inhibitory concentrations (MICs) of essential oil at vegetative stage were 21, 25 and 12.5 mg/mL against *Streptococcus mutans*, *Streptococcus sangius* and *Actinomyces viscosus*, respectively. The evaluated MICs at flowering stages were 21, 21 and 25 mg/mL for the above mentioned bacteria with the same order. At the stage of seed formation, MIC was 25 mg/mL for all bacteria.

Conclusion: Results showed that the essential oil of *S. leriifolia* had significant inhibitory effect on growth of all tested bacteria. In flowering time, the plant showed more antibacterial activity than other phenologic stages and *Actinomyces viscosus* showed to be the most sensitive bacteria.

Keywords: Antibacterial activity, Agar dilution, Essential oil. Phenologic stages, *Salvia leriifolia*, *Streptococcus mutans*, *Streptococcus sangius*, *Actinomyces viscosus*

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Poster - [A-10-403-1]

Protective effects of pulp aqueous and hydro-alcoholic extracts of *Punica granatum*, on serum/glucose deprivation-induced PC12 cells injury

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The serum/glucose deprivation (SGD)-induced cell injury in cultured rat pheochromocytoma (PC12) cell line represents a useful in vitro model for studying the induction of cell injury following brain ischemia and other neurodegenerative disorders. Pomegranate (Punicagranatum L.) has been known for its antioxidant constituents. To elucidate the neuroprotective effects of pomegranate, we have evaluated pulp aqueous (PHE) and hydro-alcoholic(PAE) extracts, on viability of cultured PC12 cells under serum/glucose deprivation conditions. PC12 cells were grown in DMEM media, supplemented with 10% FCS, and 1% antibiotic, containing 100 IU/ml penicillin and 100 µg/ml streptomycin. After seeding overnight, cells were depriviated from serum/glucose for 6 and 12 hrs. In treatment groups, cells were pre-incubated with PHE and PAE (6.25-800 $\mu g/ml$) for 2 h before inducing SGD, in which the same treatments were applied. Cell viability was evaluated by MTT assay. Exposure of PC12 cells to SGD condition for 6 and 12 hrs induced a significant decline in cell viability (p < 0.001). Treatment of PC12 cells for 6 and 12 h with PHE, PAE (6.25-800 μg/ml) significantly reduced the SGD-induced cytotoxicity in PC12 cells Herein, we have shown that PHE, PAE increased cell viability following serum/glucose deprivation in PC12 cells. It

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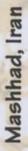
Title of presentation: Antibacterial effect of Salvia Ieriifolia Benth essential oil obtained in different phenologic stages against cariogenic bacteria



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Antibacterial effect of Salvia leriifolia Benth essential oil obtained in different phenologic stages against cariogenic bacteria

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Conclusion: Results showed that the essential oil of *S. leriifolia* had significant inhibitory effect on growth of all tested bacteria. In followering time, the plant showed more antibacterial activity than other phenologic stages and *Actinomyces viscosus* showed the most sensitive bacteria.

Key words: antibacterial activity, Agar dilution, essential oil, phenologic stages, Salvia leriifolia, Streptococcus mutans, Streptococcus sangius, Actinomyces viscosus