

Food, Nutrition and Health: Nutrigenomics

PP-838a

Antioxidant, antimicrobial and cytotoxic activities of some Turkish plant extracts

E. Altıok¹, L. Abbasi Asbagh², C. Bulut¹, S. Ulku¹ and O. Bayraktar¹

¹Chemical engineering, Izmir Institute of Technology, Izmir, Turkey, ²Biotechnology, Izmir Institute of Technology, Izmir, Turkey. E-mail: laykaabbasi@iyte.edu.tr

Plant extracts have been known to possess notable biological activity, including antioxidant, antimicrobial and cytotoxic properties. There is a growing interest in the use of natural products in the human food industries as consumer resistance to synthetic additives increases. These products can be used to improve human health. *In vitro* antioxidant, antimicrobial and cytotoxic activities of ethanol extracts of some plants from Urla region in Turkey were investigated. Plant materials were collected from *Pistacia lentiscus*, *Vitex agnus-castus*, *Cistus creticus* and *Nerium oleander* in October, November and December. Antioxidant capacities were measured using photochemiluminescence detection method. Antimicrobial activities of extracts were determined by disc diffusion method on *Escherichia coli*, *Klebsiella pneumoniae*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*. Cytotoxicity was measured by Trypan blue exclusion assay and XTT colorimetric cytotoxicity assay against the human acute myeloid leukaemia cell line (HL-60). The highest antioxidant activity was measured for *C. creticus* extracts. Total antioxidant capacities for leaf extracts of *C. creticus* were found to be 275, 487, 142 mg ascorbic acid/mg plant in October, November, and December respectively. The highest antimicrobial activity was observed for *C. creticus* extracts cultivated in November. Antioxidant, antimicrobial and cytotoxic activities were found to vary with the cultivation time of plant materials.

Other

PP-1085

Leptin level in obesity patients and healthy subjects

S Trajkovska¹, S Shubevska², M Krstevska¹, Z Fathi¹

¹Department of Medical and Experimental Biochemistry, ²Clinic of Endocrinology and Metabolic Diseases, Medical Faculty, Skopje, Macedonia. E-mail: zanairina@yahoo.com

The aim of our investigation was to obtain leptin reference values (LRV), for Macedonian population (n = 336) and to compare with these of obese patients. Immunoenzyme method was used. The other parameters: height, weight, blood pressure, body mass index (BMI), cholesterol, triacylglycerol, urea and glycemia were determined with routine methods. The LRV depended on gender. Mean value and standard deviation SD for leptin in male

healthy population aged 18-58 years was 4.42 ± 4.12 ng/ml. Mean value and SD for leptin in female healthy population aged 19-63 years was 7.64 ± 7.90 ng/ml. Leptin concentrations were in correlation with BMI and the LRV could be presented depending on the BMI: in the female population with BMI from 18.5 to 24.9 kg/m² – up to 14.5 ng/ml; with BMI from 25 to 29.9 kg/m² – up to 26.2 ng/ml; with BMI from 30 to 34.9 kg/m² – up to 35.0 ng/ml and with BMI above 35 kg/m² up to 39 ng/ml. In the male population with BMI from 18.5 to 24.9 kg/m² – up to 8.57 ng/ml; with BMI from 25 to 29.9 kg/m² – up to 8.56 ng/ml and with BMI from 30 to 39 kg/m² – up to 9.83 ng/ml. Leptin showed high positive correlation with body mass index in both sexes. Obese patients from both sexes (n = 32) presented with significantly increased values for plasma leptin 52.03 ± 3.39 ng/ml, total cholesterol 5.44 ± 0.92 mmol/L and triacylglycerols 2.31 ± 0.96 compared to the reference group whereas the other determined biochemical parameters glucose and urea were within the reference limits.

PP-1086

Evaluation of endangered twelve medicinal plants from Jammu region for anti-cancer activity: role of rotterlin

V. Sharma¹, S. Sundaram², A. K. Saxena³ and D.K. Gupta¹

¹Biochemistry Department, Allahabad University, Allahabad, India,

²Center of Biotechnology, Allahabad University, Allahabad, India,

³Division of Biochemistry, Regional Research Laboratory, CSIR,

Jammu-Tawi, India. E-mail: dwijenkumar@rediffmail.com

We have done an extensive study on 12 plant species, some of which are endangered, and are found in hills around Jammu (India) with diversified therapeutic values, to evaluate whether they possess any anti-cancer activity and to facilitate purification of new compounds with potential anti-cancer activity. Aqueous, ethanolic (50%, v/v) and ethanolic (95%, v/v) extracts from different parts of 12 plants were prepared and used for *in vitro* cytotoxicity assays on 8–16 human cancer cell lines. Using appropriate controls (Adriamycin, Taxol, Mitomycin A and 5-Fluorouracil), we observed that with the exception of *Mentha arvensis*, all 11 plants showed *in vitro* anti-cancer activity. According to their cytotoxicity against more number of human cancer cell lines, plant extracts from *Apium graveolems*, *Holarrhena antidyentrica*, *Mallotus philippensis* and *Nardostachys jatamasi* were fractionated and assayed. They all showed anti-cancer activity but the ethanolic extract of *Mallotus philippensis* was found to be more pronounced. Column chromatographic analysis of chloroform-soluble fraction of *Mallotus* sp. on Silica gel yielded a compound identified as Rotterlin on basis of its melting point and spectral data, in agreement with published values. Rotterlin demonstrated high anti-cancer activity against eight human cancer cell lines of colon, cervical, lung, liver and ovarian origins. Rotterlin can surely serve as a leading molecule for further development of anti-cancer drugs.