P-I-36

DETERMINATION OF ANTICANCER ACTIVITY OF RESVERATROL ON CANCER CELLS, BASED ON THE CYTOMETRIC MONITORING OF THE NK LYMPHOCYTES STIMULATION

T. Daskalou [a], S. Karkabounas[a], I. Toliopoulos[a], D. Bougiouklis[a], A. Evangelou[a], A.Metsios[a], P. Veltsistas[b] and S. Gerou[c].

[a]Laboratory of Experimental Physiology, Faculty of Medicine, University of Ioannina, 45110 - Ioannina, GREECE.

[b]Laboratory of Analytical Chemistry, Department of Chemistry, University of Ioannina, 45110 - Ioannina, GREECE.

[c]"ANALYSI", Microbiological and Biomedical Research Lab., 54623, Thessaloniki, GREECE.

Introduction: Natural Killer Cells (NK Cells - NKCs) are a subpopulation of lymphocytes that play an important role in immunotherapy. Resveratrol (3,4,5-trihydroxy-stilbene-3-β-D-glucoside) is an ingredient of many plants, with antioxidant properties.

Purpose: The investigation of possible anticancer actions of resveratrol, by stimulation of NK cells.

Material and Methods: 18 healthy volunteers participated in the study. The methodology of quantification of cytotoxicity of NKCs was used in the in vitro study, which included four stages: a) isolation of NKCs from blood and their quantification, b) quantification of cancer cells (leiomyosarcoma - Wistar rats), which used as cancer target cells (CTCs), c) incubation of NKCs with CTCs in CO_2 chamber in the ratios 12.5:1, 25:1, and 50:1 and d) determination of cytotoxicity by flow cytometer Epics XL-MCL of Beckman-Coulter Co. The same trials were repeated after the addition of resveratrol during stage c.

Results: The cytotoxicity of NKCs against CTCs indicated an increase at 320%, 440%, 67% average rate in the ratios 12.5:1, 25:1 and 50:1 respectively.

Conclusions: Resveratrol seems to be an important anticancer substance and therefore further clinical studies should be performed, for more convenient prevention and therapy of cancer.