

## ALTERATION OF PERCENTAGE OF BLOOD SERUM PROTEINS BY EXTRACELLULAR UBIQUITIN IN IRRADIATED MICE

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**T**reatment of cancerous patients by radiotherapy may be dangerous, as it increases a possibility of various long term complications. Radiation disease can be characterized by inappropriate cell proliferation and early cell death. Our earlier works proved that intraperitoneally induced ubiquitin impacts proliferative activity of various cells in mice. Usually changes in different fractions of blood serum proteins indicates the presence of abnormal cells typical for carcinoma, iron deficiency anaemia, amyloidosis, malignant lymphoma, multiple myeloma and etc. It seems very important to find the biological agents that can regulate the cellular processes via modification of protein composition. Therefore, in the present work, we conducted quantitative analysis of high molecular weighed proteins of blood serum, after the ubiquitin injection in irradiated mice. Irradiation of tested animals with 3 Gy has been conducted by gamma-irradiating device GUPOS, at the Nuclear Research Centre, Institute of Physics, Tbilisi State University, Georgia. The source of radiation was <sup>137</sup>Cs with dose rate of 1.1 Gy/min. Animals were divided into three groups: control intact, irradiated animals and animals intraperitoneal injected by 200µg/ml ubiquitin in 72 hours after irradiation. Protein composition of blood serum samples has been studied by SDS-PAGE electrophoresis with further densitometrical analysis using image gel analysing option. Analyzing the percentage ratio of proteins in high molecular weight fractions, we found the evidence of injected extracellular ubiquitin participation in regulation of quantity of blood serum proteins in irradiated mice. Hence, the results indicate the possible therapeutic potential of extracellular ubiquitin for stimulation and regulation of recovery processes after irradiation.

### Biography

Irine Ioramashvili MD, Physics, Specialization in Biophysics, holds position of a Researcher in a group of Cellular Biophysics at the Department of Biophysics, Iv Beritashvili Center of Experimental Biomedicine. She obtained her MSc degree after graduating from Iv Javakishvili Tbilisi State University in 2002. Participated in research projects granted from CRDF Global, with funding from the US Defense Threat Reduction Agency (DTRA) in 2015-2016 and Shota Rustaveli National Science Foundation in 2016-2019. She has published 12 scientific works in recent years.

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