

November 05-06, 2018
Paris, France

R. Sujashvili et al., Arch Cancer Res 2018, Volume:6
DOI: 10.21767/2254-6081-C5-016

NEGATIVE CORRELATION BETWEEN LEVELS OF EXTRACELLULAR UBIQUITIN AND REGENERATING BLOOD CELL COUNT IN IRRADIATED MICE

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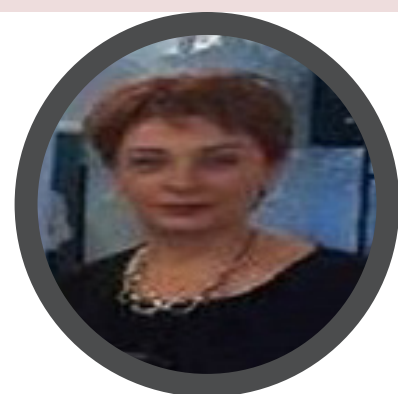
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Ubiquitin origin and especially functions in extracellular fluids and blood plasma are still unclear. Several studies have revealed that ubiquitin concentrations in body fluids are increased in patients with various diseases. However, serum concentrations of extracellular ubiquitin after irradiation have not been studied. The main goal of our investigation is quantitative assessment of serum extracellular ubiquitin and assignment of correlation between extracellular levels of ubiquitin and blood cell count after irradiation in mice. We used 3Gy and 5.5Gy ¹³⁷Cs gamma-irradiated mice of 6 week age for modeling cytopenia. Microscopy, immunological and statistical methods have been implicated for calculation of total cell count of peripheral blood cells and concentration changes of ubiquitin in blood serum of mice. Study revealed the negative correlation between levels of extracellular ubiquitin and regenerating blood cell counts. Our results may prove the hypothesis that ubiquitin levels increase in extracellular area due to cytolysis. But here become apparent a question about diminution of ubiquitin level in the extracellular area during cell count elevation. Farther investigation is required for elucidation of pathways of serum ubiquitin especially with regard to its prognostic importance in patients suffering from radiation diseases.

Biography

Rusudan Sujashvili, Doctor of Biology, Full Professor, School of Medicine, New Vision University is a Chief scientist and a group leader for Cellular Biophysics at the Department of Biophysics, Iv. Beritashvili Center of Experimental Biomedicine. She obtained her Ph.D. degree from Iv. Javakhishvili Tbilisi State University in 2000. Her projects have been granted from Shota Rustaveli National Science Foundation in 2010-2012 and 2016-2019. Goal of her research group is to study the advantages of extracellular ubiquitin in regulation of molecular and cellular pathological changes implemented by genotoxic agents (ionizing radiation, chemo preventive drugs). Rusudan Sujashvili has published about 50 scientific works in recent years.

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