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Comparing the radioprotective effect of vitamins A, E and *Cotoneaster nummularia* on mouse bone marrow cells against Gamma irradiation

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Study of the different aspects of protection against spontaneous exposure to ionizing radiation, always, has been an active area of research. High cost and toxicity of radioprotective drugs has limited their use. So, search for new drugs with high protection value and lower cost and toxicity seems a necessity.

In this study radioprotective effect of vitamins A, E, and *Cotoneaster nummularia*, regarding their high accessibility and low side effects on human as well as animals, against Gamma irradiation, was analyzed using micronucleus assay on bone marrow cells of male mouse (Balb/c).

Vitamins E, A, water soluble extract as well as alcoholic extract of *Cotoneaster nummularia* have been administered (IP) at various doses for five days. One hour after last administration, mice were exposed to 2 gray of Gamma radiation. Micronucleus assay performed on bone marrow cells 24 hours post-exposure. One thousands nucleated cells were scored per slide and the frequency of micronucleus calculated. High frequency of micronucleus was observed in non treated gamma-exposed mice, which represented the clastogenic effect of irradiation. Vitamin E, A, and *Cotoneaster nummularia* treated mice represented the lower frequency of micronucleus ($P < 0.01$). The results showed a 5.56, 3.93, 3.32 and 2.1 times decrease in the gamma induced micronucleus frequency in vitamin E, A, water soluble and alcoholic extract of *Cotoneaster nummularia* respectively.