

RADIOIMMUNOTOXICOLOGICAL EFFECT OF ENRICHED URANIUM ON CENTRAL AND PERIPHERAL IMMUNE CELLS AND THE PROTECTIVE ACTION OF IL-1 AND IL-2

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Abstract With accumulation of enriched uranium $^{235}\text{U-UO}_2\text{F}_2$ in organism, it was found that enriched uranium had injurious effect on the immune function of central and peripheral immune cells. After intravenous injection of enriched uranium the spontaneous $^3\text{H-TdR}$ incorporation in thymocytes and bone marrow cells decreased. Though the sensitivity of immune cells to $^{235}\text{U-UO}_2\text{F}_2$ was different. The thymocytes were destroyed more markedly. Also the proliferation ability of T and B lymphocytes were both inhibited by enriched uranium ^{235}U . As compared with them, spleen B lymphocytes were inhibited more markedly than T lymphocytes. At the same time spleen lymphocytes IL-1 production and IL-2 consumption were diminished. It should be noted, that the inhibition of spleen B lymphocytes proliferation by enriched uranium $^{235}\text{U-UO}_2\text{F}_2$ was partially restored by exogenous IL-1 or IL-2. The recovery rate of protective action at the very most was $67.1 \pm 11.2\%$ with exogenous IL-1 and $50.2 \pm 8.0\%$ with IL-2. Moreover, both exogenous IL-1 and IL-2 had synergetic effect, and the recovery rate was elevated to $83.1 \pm 12.3\%$.