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**PAPER TITLE** ESTIMATION OF RADIOPROTECTION EFFECTS OF UKRAIN  
BY MATHEMATICAL THEORY OF EXPERIMENTS

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**ABSTRACT** (See instructions overleaf)

The problem of choosing the optimal conditions using drugs is a cardinal one for any experimental research. Basing on principles of mathematical theory of experiments, optimal doses and periods of drug administration were determined using both the rate of survival at day 30 following as response indices.

The ability of Ukrain (Uk), a cytostatic and immunomodulating semi-synthetic compound of thiophosphate-modified alkaloids of Chelidonium Majus L., to modify the effects of irradiation was studied in CBA mice.

The doses of irradiation from 6.0 to 7.5 Gy at the dose rate of 1.5 Gy/min, the dose of Uk from 0.2 to 10 mg/kg and time: from 24 h before to

to 24 h after irradiation of its administration were chosen as the most significant factors that may influence the survival of irradiated animals. The drug (0.2 - 1.4 mg/kg) was found to increase the survival rate of mice by 50 - 60 percent at irradiation doses from 6.00 to 6.75 Gy with no effect at the dose of 7.50 Gy. Maximal increase in the survival rate of the mice was noted when the drug was administered within the interval from 6 h before to 3 h after irradiation.

To conclude, the main outcome of the work presented is the finding that Ukrain is capable of modifying the effects of irradiation when applied in both prophylactic and curative regimes. The drug was also found to be able of modifying the effects of prolonged irradiation with the cumulative dose of 8.75 Gy (LD 85/30) at the dose rate of 0.02 Gy/min.