

SYNERGISM OF SIMULTANEOUS ACTION OF HEAVY METALS IN VARIOUS CONCENTRATION AND IONIZING RADIATION (OR HYPERTHERMIA) ON YEAST CELLS SURVIVAL

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New experimental results are presented on the synergism of simultaneous application of heavy metals in various concentration and ionizing radiation (or hyperthermia) on survival of *Saccharomyces cerevisiae* diploid yeast cells. It is shown that the synergistic interaction of damage produced by these agents at a constant drug concentration is observed only within a certain temperature range, within which there is an optimal temperature when the greatest synergistic effect is achieved. An increase in the drug concentration resulted in the necessity to increase the acting temperature to keep the greatest synergistic effect. At variation of heavy metal salts concentration at a fixed dose rate of ionizing radiation, the synergistic interaction is observed only within a certain range of the salt concentrations studied. Within this range, there is an optimal concentration at which the greatest synergistic effect is observed. The general patterns of synergistic effect display that are independent of the acting agents, biological objects and tests are analyzed. The possible mechanisms of the effects described and the ways of their practical use are discussed.

Keywords: heavy metals, synergism, ionizing radiation, hyperthermia, dose rate, combined actions, yeast cells