

عنوان مقاله:

Radiation hormesis and adoptive response induced by low doses of limiting radiation

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خلاصه مقاله:

Ionizing radiation has long been known to produce detrimental biological effects. Although these harmful effects are the results of high doses of exposure, some other maladies such as mutation and cancer seems to be induced at low doses of exposure. In recent decades, however, some pioneer scientists have indicated that ionizing radiation like many other essential agents has toxic effects at important doses but low-level ionizing radiation not only is harmless but also has a stimulatory or hermetic effect on the growth of animals and plants. Furthermore, epidemiological studies confirm the results obtained from plant and animal studies and show that low-level ionizing radiation may be essential for life. According to these studies, ionizing radiation, like many other physical or chemical agents (UV, vitamins, hormones and Trace elements), can be completely beneficial at low doses and harmful at higher doses. It has been indicated that when human cells are exposed to low doses of ionizing radiation and other agents that induce DNA damages, they often become less sensitive to the detrimental effects of higher doses of those agents administered subsequently. This phenomenon has been termed the adoptive response. So, today, some facts such as the necessity of nuclear energy in modern life, areas with high background radiation and a considerable increase in the use of radiography and radiotherapy in medicine, make it necessary to do more researches on the biological effects of low doses of ionizing radiation and especially on some phenomena such as hormesis and adoptive response.

کلمات کلیدی:

Hormesis, low dose radiation, adoptive response, cancer

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