

Modification of Gamma Radiation and 4-Nitroquinoline 1-Oxide Induced Genotoxicity by Tumour Promoter Iodoacetate

K. B. Anjaria*, N. N. Bhat, K.B. Shirsath and Sreedevi B.

*Radiological Physics and Advisory Division, Bhabha Atomic Research Centre, Trombay,
Mumbai 400 0085, Maharashtra, India*

KEYWORDS Iodoacetate; tumour promoter; gamma radiation; 4-nitroquinoline 1-oxide; genotoxicity; yeast

ABSTRACT Modifying effects of tumour promoter Iodoacetic Acid – sodium salt (IA) was studied on ^{60}Co gamma radiation and 4-Nitroquinoline 1-oxide (4-NQO) induced recombination (gene conversion), back mutation and aberrant colony formation (ACF) using eukaryotic model system, yeast. Cells were exposed to 0-400 Gy of radiation or were treated with 0.15-1.5 mM 4-NQO and grown on the media containing 0-200 μg IA/ml. The results indicated that IA reduced the frequencies of spontaneous; gamma radiation as well as 4-NQO induced back mutation and ACF significantly. Further, it had no effect on spontaneous, radiation or 4-NQO induced recombination (gene conversion) frequency. These observations suggest that IA does not act like other tumour promoters, which enhance the frequency of genetic events induced by carcinogens *in vitro*.