

# Methods of genetic toxicology in the assessment of genomic damage induced by electromagnetic ionizing radiation

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## Abstract

Medical or occupational exposure of patients and healthcare personnel to ionizing radiation (IR) can be a cause of genetic disorders. In this article we discuss the efficiency of the following tests used to comprehensively assess the effects of ionizing radiation on the genetic apparatus of a cell: The Ames test, the micronucleus test and the FISH method. We provide examples of their use, outline their advantages and drawbacks, estimate the possibility of designing more advanced test systems and discuss requirements for their implementation.

## Keywords

Ames test, FISH, Gamma rays, Genetic toxicology, Ionizing radiation, Micronucleus test, Test system, X-ray radiation

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